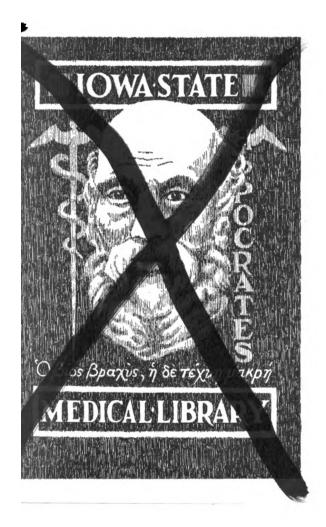
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An Address MEDICAL EDUCATION.

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Delivered at the Opening of the Medical Department of the Viotoria University of Manchester on Oct. 1st, 1909,

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MR. VICE-CHANCELLOR, LADIES, AND GENTLEMEN, -The opening of a fresh winter session, marking as it does the commencement of a new academic year, is a fitting occasion on which not only to review the present state of medical education but also to endeavour to indicate the lines on which its future progress may be most efficiently developed. At the outset it is important to realise that no system of medical education, however good, can be permanent. The science and art of medicine are ever advancing, sometimes rapidly, sometimes slowly, and therefore from time to time our scheme of education must be readjusted to the requirements of the day so that our students may have the best equipment we can give them for the profession of their

To indicate the many ways in which this has occurred would require a review of the progress of medicine during the last 20 or 30 years, but a few illustrations will suffice to emphasise this point. Twenty years ago, when the tubercle bacillus had only recently been discovered, the examination of excretions for this micro-organism, as an aid to diagnosis, was regarded almost as a special investigation, whereas now every student is taught how to carry this out as part of his regular work in the hospital. The various instruments by means of which the blood pressure may be quickly ascertained at the bedside are yet more recent additions to our routine methods of investigating disease with which all now require to be familiar. Although students have not time to acquire the necessary technical knowledge to carry out X ray examinations, still it is essential that they should know what information can be obtained by the skilled use of this and other elaborate methods of clinical investigation and under what circumstances they may be profitably employed. Thus, although the principles of true education remain the same, their practical application to medical training must be re-adapted from time to time as fresh developments in medical science and practice take place. A course of medical education which fulfils our requirements to-day will not do so five or ten years hence, when we may confidently expect that still further stages of development in medicine will have been reached. Too frequent changes in the medical curriculum are not desirable, but it is evident that from time to time we should review our courses of instruction and methods of examination so as to bring them into line with recent but real and proved advances in knowledge. For this purpose it would be a great advantage to have occasionally a conference of medical teachers at which those engaged in teaching the various subjects included in the medical curriculum might meet to discuss the best methods of education and the true relationship of the different parts of the curriculum to each other. If such a conference were held every second or third year it would serve a useful purpose without taking up too much of our time. As it is, the teachers in the different universities and medical schools work more or less independently, whereas they might derive great advantage from a freer discussion of their experiences of different methods of teaching. It would doubtless add interest to the proceedings if some senior students and recent graduates could also, on suitable occasions, take part in the discussions As it is, many of us have derived great help and inspiration even from casual conversations with those who are engaged in teaching in the medical schools of this and other countries. The General Medical Council, of course, controls the general scheme of medical education and examination, but in the practical application of these principles to the special requirements of our medical schools such a meeting of teachers would be of much practical assistance.

In medicine old customs and usages die hard. In certain cases where they are good and still serve some useful purpose this is as it should be, but we are apt to cling to old empirical methods of practice and teaching long after the original reason for their adoption has passed away or has been found to be erroneous. Dr. Lusk, in a recent address, in order to illustrate this tendency, related the experience of an American officer who was visiting St. Petersburg. As he was being shown over the palace by a Russian officer he noticed a sentinel pacing up and down the middle of a courtyard, and inquired the reason of his being placed in such an unusual position. His companion did not know, but promised to find out. Investigation showed that 60 years before a little princess had found a snowdrop growing in the centre of this courtyard and had requested that it might be allowed to remain. Her father gave an order for a guard to be placed there to protect the flower. This order had never been rescinded, and so for 60 years a sentinel had paced up and down the centre of the

courtyard where the snowdrop had bloomed.

With the notable exception of Oxford and Cambridge, it is the usual custom in this country for a student to complete his curriculum at one medical school. Owing to the fact that these two universities are situated in comparatively small towns, the clinical subjects are generally studied in London or some other large medical centre. An interesting comparison was made by Sir Felix Semon in his address to the Manchester Medical Society between English and German medical education two years ago, in which he drew attention to the fact that in Germany a student is at liberty to migrate from one university to another. He may, if he wishes, change his university at the end of each half-year, and many students avail themselves of this liberty to the extent of visiting two or three universities in the course of their education. Owing to the relationship of the universities to the State this is easily done. It would be a decided advantage if in this country arrangements could be made so that a student of one university could, without incurring any additional expense, spend at least one of his five years at another. Perhaps in the future it may be possible for British, American, German, and French universities to interchange medical students with mutual advantage under some such arrangement as that which obtains in the case of the Rhodes scholars at Oxford. Our methods of education would also develop more rapidly if in British universities the members of the medical teaching staff migrated more frequently from one medical school to another. Such changes among the teachers of the advanced medical subjects are uncommon in this country, whereas in Germany and in America it is quite a usual custom to appoint a teacher from another university to a professorship or lectureship in one of these subjects.

Modern medical education may be conveniently considered as general and special. General medical education is the ordinary training which all students require to prepare them for a final or qualifying examination. Under the heading of special education may be included the more special or postgraduate training which is becoming more and more necessary for those who are preparing for one of the special branches of medical work or for one of the services. All those who wish to enter the medical profession must go through the five years' curriculum, and during this period the training is the same for all, as any specialisation in work

should be left until after graduation.

We must clearly recognise at the outset that the object we have in view in arranging a course of medical education is to train men and women to be as efficient medical practitioners as possible in the time at our disposal. It must always be borne in mind that our most important duty is to train men how to observe so that they may continue to be students and to go on learning all their days. There is rather a tendency to exalt the importance of teaching at the expense of training. Too much time and energy are expended on the mere imparting of knowledge in a form in which it may be readily absorbed and reproduced at an examination, while insufficient attention is given to training the student how to observe and act for himself. A medical man who can observe and make the best use of a moderate amount of knowledge often attains better results than one who has absorbed much knowledge and gained possibly many prizes but who has neglected to cultivate his powers of observation and action.

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The main object of the five years' course of education is to train and equip students as good all-round medical men, so that they may be able to take a resident appointment in a hospital, to take a special course of post-graduate work so as to obtain the special knowledge required for the navy, army, or public health service, or if needs be to proceed at once to engage in private practice. The general course of medical education, or as it is commonly called the five years' curriculum, is arranged on certain ines which are regulated by the General Medical Council. The details of the course and the amount of time allotted to each subject are left to the discretion of each medical school. The actual five years' curriculum is a minimum of 57 months from the time of registration to the time of passing the qualifying examination. This minimum period is too short for the average student to prepare for his final examination. The investigations of the General Medical Council have shown that the average time taken by some 1111 students to qualify for registration is only three weeks under seven years. Only 14 per cent. qualified in five years. It is evident, therefore, that either the present five years' curriculum is too short or that too much is crowded into it. In order to arrive at a more satisfactory state of affairs we must either lengthen or rearrange the curriculum. The new University of Bristol, recognising this at the outset, has fixed five and a half years as the minimum period, while the University of Wales has a curriculum of six years. The University of Belfast has, like the University of Durham, allotted only two years to preliminary subjects, leaving three years for hospital work and the final subjects. In our own University the curriculum has recently been rearranged, so that two years and one term are given to preliminary subjects, the remaining two years and two terms being left free for clinical work and final

The first year of medical work is devoted to the study of chemistry, physics, biology, and elementary human anatomy. The subjects are selected, not only because a knowledge of them is essential for the proper understanding of the later parts of the course, but also on account of the valuable training they afford for powers of observation, which require to be developed in every possible way. Chemistry and biochemistry, which has recently been added to our own curriculum, are becoming more and more important in daily medical work. Many students are imbued with the idea that once they have passed their first M.B. examination the only chemistry they really require is such as will enable them to prescribe correctly without mixing incompatible drugs and to carry out some simple tests for certain substances found in the excreta of patients in various diseases. This, however, is far from being the case, as the more physiological and pathological investigations teach us of the metabolism of the tissues in health and disease the more important a knowledge of chemistry becomes in the daily task of the diagnois and treatment of many maladies. We have, however, to arrange our courses of instruction in the preliminary subjects so as to leave sufficient time in the later part of the curriculum for the strictly professional subjects of medicine, surgery, and obstetrics. In order to do this recent changes have been made in this University which will prove to be an advance in the right direction. The classes in elementary biology, chemistry, and physics are now completed by the end of the first winter session, when the examination in them is held. Elementary anatomy is taken in the first summer session along with organic chemistry and bio-chemistry. The whole of the first examination should certainly be passed at the end of the first year. If no instruction in biology, chemistry, or physics has been received before entering the University this means a year of steady work. Many of our secondary and public schools now provide such good elementary teaching in these subjects that a boy on leaving school should already have acquired some useful knowledge of them.

The training for the navy has now become so special that a boy has to go to Osborne College as soon as he leaves a private school. Special classes for the army have for long been provided in public schools. If such early special train-

Thomson, in his recent presidential address to the British Association, protested against the early specialisation of school education for the sake of preparation for the scholarship examinations at the universities. There may be some danger of reducing the value of a general education when this is done to any large extent, but a boy can quite easily devote a sufficient amount of time to natural science and modern languages at school without unduly curtailing the scope of his general education. In order to encourage this, chemistry, physics, and biology should be made optional subjects in all entrance or registration examinations, or a student might have the option of passing the First M.B. examination on admission to the University. as at Cambridge. Speaking from personal experience, I should say the teaching in these subjects at some, at any rate, of our public and secondary schools, is excellent, and well adapted to the object in view. The education given at our public schools is often unjustly criticised, but I am a firm believer in its efficiency as a means of developing a boy's best qualities. If a student has made good use of his opportunities at school he should have no difficulty whatever in passing the examination in chemistry, physics, and biology by the end of his first year. In this University he is then free to devote himself entirely to anatomy and physiology during his second year and for the first half of his third winter session so as to pass his second examina-tion at the end of the Michaelmas term. The importance of a sound knowledge of anatomy and physiclogy cannot be over-estimated as a sure foundation for the more strictly professional subjects which follow. It is only by the careful study of anatomy and physiology that a detailed knowledge of the structure and functions of the body can be acquired which will enable a mental picture of any part of the body to be framed at will. I shall refer again to this power of mental vision in the diagnosis of disease, which is of such importance in medicine and for which a good practical knowledge of anatomy and physiology is the first essential. In arranging a syllabus for the preliminary subjects in any medical school it is most important that it should always be borne in mind that the ultimate object is the training of medical men. Many still believe, however, that these subjects should be taught as if for a degree in science. This, I am convinced, cannot be done, in the case of the majority, with satisfactory results in a five years' curriculum, without curtailing the time to be devoted to the more strictly professional training. When a man has the time to spare and the inclination he should certainly take a degree in science as well as in medicine, but for the majority of students the syllabus should only include what is likely to be of real use to them. Professor Starling has strongly urged that all unnecessary details in anatomy and physiology should be omitted so as to lighten as far as possible the load which the medical student is expected to carry.

In order to ensure the proper development of medical training it is important that each examination should be passed at the right time. No good purpose is served by attending lectures and classes in one group of subjects while the chief attention is directed to mastering another. Thus it is not advisable for a student who has failed to pass his first M.B. examination to attend lectures and classes intended to prepare him for the second examination before he has passed the first. This applies even more forcibly to later stages of the curriculum. A man can derive no benefit from attending lectures on medicine or surgery while all his energies are being directed to prepare himself for his second attempt to pass an examination in anatomy and physiology. If the percentage of students who fail to pass or to present themselves for examination at the right time is too high, it is usually an indication that the curriculum is overloaded rather than that the standard of the examination is too high.

When a student first commences work in a hospital he is apt to be bewildered by the mass of new facts with which he is suddenly brought into contact. It is therefore important that he should learn at the outting has been found advisable for these two professions, the time has certainly arrived when a larger amount of time has certainly arrived when a larger amount of time during the three or four years spent at a public or secondary school should be devoted to chemistry, physics and biology, as well as to French and German, by those who intend to enter the medical profession. Sir J. J.

practical knowledge of the diagnosis, course, and treatment of disease can be obtained, such as is required daily and hourly in actual practice. Many students are apt to overestimate the value of lectures and demonstrations as compared with individual work in the wards. In hospital training every opportunity must be given to students to examine and observe actual cases for themselves. Nothing is more conducive to this than the careful taking of notes in the wards and out-patient departments. In addition to taking full ward-notes for the hospital case-books every student should keep his own case-book and enter brief notes of all the cases he sees in the ward in which he works as clinical clerk, as well as of any other special cases he may have the opportunity of examining in the hospital. No cases leave a more lasting impression than those which are seen during this period of medical work, and they often serve as standard types with which to compare other cases seen later on in life. Many a man is able years afterwards to recall cases which he observed as a clinical clerk or house physician in the wards of his hospital with remarkable clearness, and so it is of the greatest importance that these early cases should be accurately observed and carefully noted. Such observations are greatly aided by reading the description of the disease in the text-book, as far as possible, the same day as the case has been seen, instead of postponing such reading until a later period.

In order to enable a student to make the best use of his time spent in hospital he first of all receives instruction in the methods of examining patients. This training in the various methods of making physical examinations is of the utmost importance to students, and is the foundation of good hospital work. I would urge all students to take the greatest pains to acquire this practical knowledge as far as is possible in the time allotted to it before beginning actual clerking or dressing in the wards, by regular attendance at the classes, and by the use of one of the excellent books on clinical methods. If a student fails to get a good grasp of this part of his work he will lose much of the benefit of his work as a clerk. In order to ensure full instruction in these clinical methods we should do well to adopt the mode employed in Johns Hopkins Hospital, where a number of instructors, usually young graduates living in the neighbour-hood, are appointed, who take only two or three students at a time for this work, so as to ensure the thorough training for every one of them which is so difficult to accomplish in dealing with larger classes. It is essential that the student should acquire the knowledge of how to use the laryngoscope and ophthalmoscope, as many lose valuable opportunities of seeing interesting conditions of the larynx and of the eye during their work in the wards because they failed to acquire the art of using these instruments at the outset. It is largely a question of practice, and there is no difficulty in accomplishing this by the aid of an obliging friend, to whom similar facilities may be granted in return.

One of the most recent developments in medicine is the great increase in the special means of investigating disease by the direct application of laboratory methods in clinical pathology. Many of these methods of examination are easily learned and are of great practical importance, as, for example, the routine examination of the blood, of various secretions and excretions by chemical, microscopical, and bacteriological methods. Every student at the Manchester Royal Infirmary now has a course of practical instruction in these methods, so that he may be able to employ them for himself in the course of his work in the wards. To facilitate the attendance of students at the infirmary the provision of a special residential hall in close proximity to the hospital is much to be desired, so that those who hold non-resident appointments may see as much hospital practice as possible. The hours at present allotted to work in the wards in some hospitals are insufficient. Ward work should be carried on for not less than two hours both morning and afternoon, so as to allow sufficient time for note-taking at a time of day when the medical staff are not visiting the hospital.

In no department of medical education has more remarkable progress been made than in the teaching of pathology. It seems superfluous now to emphasise the importance of a thorough knowledge of medical and surgical pathology and bacteriology to every student. This is necessary to enable him to understand not only the results but also the actual causes of many diseases. In comparatively recent times to the actual the superfluored was taught in our medical schools by one of the

physicians on the staff of the hospital. advantage in that it kept medicine and pathology closely in touch. Owing, however, to the rapid growth of pathology nearly all our universities now require the professor of pathology to devote his whole time to the subject, and in order that he may still be closely associated with clinical work it is essential that he should be ex-officio pathologist to the hospital and so a member of its staff, as is now the case in Manchester and other university medical schools. This arrangement is of the greatest advantage to both the university and the hospital concerned for the purposes of teaching and research. It would be a great advantage if we could have a ward set aside in each university hospital in which special cases could be observed and studied by the physicians and pathologist in association for the investigation of such questions as the changes in metabolism which occur in disease. Such a hospital is now attached to the Pasteur Institute in Paris for the investigation of infectious diseases. Special work in such a ward would be done by senior students or graduates preparing a thesis for the M.D. degree.

In actual practice the most important duty a medical man is called upon to perform, and one to which all else should lead, is naturally the treatment of disease. This at the present day includes a great deal more than the prescribing of suitable medicines. In this branch of his work the student has to learn how to deal with his patient as well as his friends and relations, so as to inspire them with confidence and hope. We hardly appreciate sufficiently how much this art, which in reality is but the expression of true sympathy and tact, may contribute to success. These are things which are not included in the curriculum. In the ordering of a patient's surroundings, mode of life, and diet, the exercise of common sense will often save the young practitioner from such errors of judgment as recommending expensive luxuries to patients who can barely afford the necessities of life.

With regard to the teaching of the uses of drugs we should do well to reduce the amount of materia medica which a student should learn to a minimum. As Professor W. E. Dixon has recently indicated, this is one of the subjects retained in the curriculum long after the need for it has ceased. On the other hand, more time should be devoted to pharmacology and therapeutics. All students should have a thorough knowledge of our chief and well-tried remedies. The list need not be a long one but he should be able to use them with confidence and even with boldness on suitable occasions. A first-hand acquaintance with many physical means of treatment, such as the use of heat, light, electricity, baths, exercises, &c., is important. The develop-ment of modern bacteriology has placed new methods of treatment, by means of vaccines and antitoxins, within our reach. The methods of preparing and using these remedies have now to be learned by students. A general knowledge of the influence of climate on disease and of the health resorts where special courses of treatment for certain chronic maladies can best be obtained will be useful, but special details can always be obtained from books when required.

Much of this knowledge will be acquired by degrees after qualification, but as it is I fear many men pass through their curriculum without taking the trouble to acquire as much knowledge of the methods of treatment as they should, and only realise when they are called upon to treat patients of their own how much they are expected to do and how limited their resources are.

In all English medical schools systematic lectures occupy an important part of a student's time. Three lectures a week are usually given in the major subjects. In the Scotch schools the number of lectures is even larger. Many opinions have been expressed about the utility of fixed courses of lectures. They are certainly perhaps not so essential now that text-books are so plentiful, but I maintain that as long as a student is not overburdened by having too many lectures to attend they serve a useful purpose. Much of the value undoubtedly depends upon the lecturer, and all who attended such lectures as those given by the late Sir Michael Foster on physiology or the late Mr. Marcus Beck on the principles of surgery realise how valuable such systematic courses may prove. I have had no personal experience of the recitations which in American medical schools have been substituted for regular lectures, but from what I can learn it appears that useful

as such classes may be they do not really take the place of our systematic lectures, though they may well be employed to supplement them. A systematic course of lectures should enable a student to take a good comprehensive view of the subject as seen by the lecturer, and the value of such lectures may be greatly enhanced by the use of specimens, diagrams, drawings, and lantern slides, to illustrate the subject under consideration, as in this way the visual as well as the auditory memory may be utilised in acquiring knowledge. In medical teaching it is so important to help students to acquire the power of mental visualisation, which is of so much value in helping them to understand the relationship between morbid processes and the symptoms of disease. The capacity to do this varies greatly in different individuals and appears to be connected with the power of imagination. Some seem to acquire it naturally without any conscious effort, as is shown by the possession of "number-forms" by some people and not by others. Number-forms, to which attention was drawn by Sir Douglas Galton, are imaginary lines along which many persons arrange numbers in a mental picture while counting. Many of them begin with a circle for the numbers up to 12, owing to these numbers having been originally learned from the face of a clock in childhood. The days of the week and the months of the year are also arranged in certain order along a line which can be visualised by many persons. By the study of anatomy and physiology the power is acquired of visualising all the various organs of the body, not only at rest but also at work, with as much ease in some cases as a mental picture can be formed of some familiar house or wellknown district in the country. If this has been accomplished a good foundation has been laid upon which to build a knowledge of disease.

In clinical work in the wards and in the out-patient room an endeavour should constantly be made to co-relate what is observed with the already acquired knowledge of anatomy, physiology, and pathology, not only by reading but by frequent attendance in the post-mortem room and reference to the specimens in the pathological museum. In this manner the power will in time be acquired of forming a mental picture of what appears to be the state of affairs in the patient. The picture thus constructed, in other words the diagnosis, will not always be correct, and even at times it will be rudely shattered by a necropsy, but having framed such a picture it will be instructive to trace the source of the error and to learn how to avoid it, if possible, in the future. To encourage this further, in some of the American schools a fatal case is gone over and reconstructed after death by the physician and the students from notes and observations taken during life, the conclusions being written up on a black-The specimens are then brought in and demonstrated by the pathologist, and if the diagnosis proves to be incorrect the cause of the error is fully considered on the spot. In cultivating this power of mental visualisation, however, it is most important to avoid the attempt to commit printed pages to memory. Some students do attempt to visualise pages of text-books of medicine or surgery, probably as a result of having learned to recite English or Latin at school. power is very highly developed in some people, and in one case I remember seeing it stated that the whole of "Paradise Lost" could be recited after reading it through once or twice, the reciter having retained as clear a mental picture of each page as if it were still before him. Such a method of learning medicine is, of course, quite useless.

No means of cultivating the power of rapid and accurate observation should be neglected, for many opportunities are afforded, not only by daily work, but also by holidays and recreations. Life in the country offers many opportunities of training the power of observation to the man who knows how to make use of them. Field sports and games are valuable in this respect and fortunate are those who are able to make use of them. Not only are the powers of observation constantly being called into play but a love of open-air life is acquired which will persist in after years, so that when the holiday season comes round the longing for a favourite pursuit will become so strong that at least one real holiday in the year will be taken, however brief it may be. Many a man loses the holiday habit simply because he has no absorbing pursuit to take him away from home and his ordinary surroundings, with consequent diminution in his health and efficiency. In no other profession is a man so

reasonable amount of holiday and recreation. duction of the motor-car has been a great advantage to medical men in various ways. Driving a motor has added new interests to the daily round of many a medical man, and not the least important of these is the training it affords in rapid observation and immediate action. A daily endeavour should be made to acquire a knowledge of the best English writers. Well-known members of our own profession have provided us with useful guidance in general reading and no student should fail to read and read again Professor W. Osler's "Equanimitas" and Sir Arthur Conan Doyle's "Through the Magic Door."

In this country degrees in medicine and surgery are usually conferred at once after passing the final examination. the University of Cambridge, however, a thesis has to be presented before the degree is conferred. In American universities the M.D. degree is awarded at once on graduation without further examination or test. In this country, this degree is only conferred after a thesis has been accepted or a special examination has been passed. The preparation of a thesis is a useful stimulus to post-graduate study, under which many men do useful work they might not otherwise have attempted. It would be a great gain if the work which is done for the M.D. thesis could be to some extent coördinated so that the work of several candidates might be upon differentaspects of the same problem. There are, of course, many practical difficulties, but it would be a decided advantage if each medical school selected certain subjects in medicine, pathology, or therapeutics, in which it could offer special facilities for work to graduates who were anxious to obtain the degree. One of the most hopeful signs of the times is the tendency to organise definite campaigns against certain diseases. In some cases the work has been done by a small but devoted band of workers, in others the work is being done on a larger scale by many individuals working with similar objects in view. The results already obtained by similar objects in view. this method within the space of a few years have been enormous. The active campaign against malaria and yellow fever has been most successful in diminishing the frequency of these preventable diseases. Much is now being done tolimit the advance of sleeping sickness in Central Africa by the practical application of knowledge gained by research. A great deal has already been achieved in diminishing the frequency of tuberculosis by the good work done by the National Association in making simple preventive measures more widely known and in encouraging the establishment of sanatoriums in many parts of the country.

The subject of cancer is attracting much attention, and the large amount of good work done in collecting information and investigating the disease by the Imperial Cancer Research Fund will surely in time lead us to a clear knowledge of the causation of the dire diseases included under this general term. Work has, however, been hampered for want of funds, and therefore it is most encouraging to hear that the munificent gift of £250,000 has recently been madefor a new cancer hospital in association with the special department at Middlesex Hospital. Manchester, too, is helping in the great investigation, and we only hope that the good work which is being done by Dr. C. Powell White may be continued and extended by the aid of further private generosity. In the case of the disease just mentioned, the machinery for investigation is ready and the responsibility now rests with the public to provide the necessary funds to maintain and extend it.

The time has, however, now come when similar organised attacks must be made on other groups of diseases, and at the present moment no disease calls so urgently for further investigation and prevention as pneumonia, using this term in its widest sense to include all conditions induced by infection with the pneumococcus. Tuberculosis and cancer naturally have attracted attention first, owing to the long periods of ill health and suffering they cause before the fatal termination is reached. Pneumonia causes more than 40,000 deaths in England and Wales each year. an enormous number to be caused by an infective disease which is, presumably to some extent at any rate, preventable. Although the disease is of short duration, how many tragic deaths are caused by it! The strong and vigorous man in the midst of a useful career is carried off after a few days' illness, or a young family is deprived of a mother's care at the time when it is most needed. constantly on duty and consequently more in need of a The University of Cambridge is making a special study

of another serious malady, rheumatoid arthritis, which cripples so many useful people early in life. The near proximity of the Devonshire Hospital at Buxton affords a magnificent field for the observation of this malady in this district. Rheumatic fever is another disease in which much might be done by combined investigation to diminish or possibly prevent the chronic ill-health and premature death which so often result from the irreparable damage received by the heart during an acute attack of the disease early in life. Such diseases as these offer a splendid opportunity for the foundation of research fellowships which might be tenable for one or two years to enable graduates to do research work which might be presented for the M.D. degree. I would not, of course, suggest that theses should only be accepted on the selected subject, as many would not be able to avail themselves of the special facilities. There are, however, many young graduates anxious to do work for a thesis but who are in want of a suitable subject and the facilities to investigate it. In the past only about one-seventh of our graduates have taken the M.D. degree. There are various reasons to account for this. The exigencies of general practice make it very difficult for a man to do the work for a thesis. To meet the difficulty the University lately instituted an examination for the degree as an alternative to the presentation of a thesis, and it remains to be seen if this fulfils its purpose. The difficulties of preparing a thesis are apt to be over-estimated. The mistake is often made in postponing it too long. All graduates who wish to proceed to the higher degree would do well to begin at once to select a subject and collect material for a A resident appointment in a hospital should be obtained soon after qualification, and there should be no real difficulty during residence as a house physician to make observations on cases and collect material to form the basis of a thesis. A few weeks or months spent in a laboratory to supplement this would much enhance the value of the work. This plan would be aided if some benefactor would endow such a scheme for coordinated research so as to enable willing workers to devote an adequate amount of time to it. In this University where we are so closely allied with a great hospital such a scheme should work well. A great deal of the most valuable research work in physiology, pathology, and medicine in this country is done by our younger physicians and surgeons during that golden period from 25 to 35 or 40 years of age, before so much time becomes absorbed by the claims of hospital appointments, teaching, and practice. It is therefore largely to the rising generation of consulting physicians and surgeons that we must look for advancements in medicine by means of research work done during this period, and to them the words of Tennyson may well apply-

"Men, my brothers, men the workers, ever reaping something new;
That which they have done but earnest of the work that they
shall do."

It is so easy to allow the first five or ten years after graduation to pass by in simply acquiring knowledge and enlarging clinical experience, but this is not enough for those who are entering consulting or special practice and aspire to be hospital physicians or surgeons and teachers, as an honest and sustained effort should be made to break new ground and make some useful addition to our common stock of knowledge. Such work not only brings its own reward in the feeling of satisfaction which accompanies any useful achievement, but also in reputation and practice in the years to come. In the early years of practice much can be accomplished by giving certain hours each day to work of this kind or by devoting one whole day or two half-days each week to some special work. Still better it is when by means of a research scholarship a man can devote half or even the whole of his time to research work for one or two years. At the present time such research scholarships or fellowships in medicine are too few in number. Much good original work has been done by the holders of these scholarships and it is a great gain for practical medicine to have among its ranks many who have thus added greatly to our knowledge by research work carried out soon after graduation. It is the special function of a university to encourage this work, for the work of all universities is not only to train men and impart knowledge but also to make new knowledge, and it is desirable that a larger proportion of the resources of each university should be devoted to this purpose.

We are gradually approaching a time when, after the ordinary course has been completed and the qualifying examination has been passed, many students will devote six months or a year to more special work. This is already done in the case of those who are going to enter the services or who intend to become medical officers of health. A similar special course of instruction followed by an examination will in all probability shortly be inaugurated in psychological medicine for those who wish to become medical officers in our asylums. Those who are going to devote themselves to one of the special branches of medicine or surgery will naturally devote as long a period as possible to work at the subject of their choice. It would be a great advantage if some more practical instruction in the daily work of general practice could be given under the supervision of those who have had wide experience of this work, as so many recently qualified men who are obliged to start practice at once find themselves very incompletely equipped for their work. The system of pupilage with a general practitioner during the fifth year was intended to meet this difficulty, but few men appear to avail themselves of it; indeed, considering the amount of work which has to be accomplished in the five years it is much better to postpone the acquiring of the special knowledge of general practice until after qualification. The majority of students are preparing for this arduous and exacting work, in which a wide general knowledge of internal, external, and obstetric medicine is essential, and above all the power to observe accurately and to act promptly in emergencies.

The conditions of general practice are unfortunately often extremely trying, and owing to altered conditions of work and the developments of preventive medicine the field for general practice has in some directions become more restricted than it used to be. While the field for general practice has been curtailed in some respects, we must recognise that there are now more official posts to be obtained by medical men than formerly. The public health service is always increasing, and we may look forward to a time when the administrative work of preventive medicine will be entirely in the hands of specially trained medical officers of health. Every county will then be divided into districts, each of which will have a whole-time medical officer of health with one chief officer for the county to coordinate the work of the whole area. Every public health authority will have a working arrangement with the bacteriological department of the nearest university, where all the bacteriological examinations will be carried out in the manner so successfully originated and developed by Professor Delépine in Manchester and now also in operation in many other medical centres; so that there are ever increasing opportunities for work in these different branches of preventive medicine. In this branch of work there are now complete courses of post-graduate training and a special diploma which is awarded after an examination. Closely connected with this work is the medical inspection of school children, work which will prove to be of inestimable value to the community at large. number of medical men are required for this work and thus occupation will be provided for many who prefer definite hours of work at a fixed, though small, remuneration to the uncertainties of private practice.

The services offer a career to many which, owing to recent changes in methods of training and work, is yearly becoming more attractive. Owing to the recent developments which have taken place under the stimulating direction of Sir Alfred Keogh, the work of the Royal Army Medical Corps will attract many of the best men from our medical schools. The opportunities which are now given to suitable men to carry out original research in military hygiene are admirable and have already borne fruit. As one example I need only remind you of the discovery of the Micrococcus melitensis as the cause of Malta fever by Sir David Bruce and the tracing of this source of infection to goats' milk. The prompt application of preventive measures founded on the knowledge thus acquired has stamped out the disease in the military population of Malta. The amount of sickness which has thus been prevented is incalculable. In appealing to the public to endow research more liberally it is of interest to point out, in addition to these advantages. that in this case the actual saving in special food for the sick and in the expense of sending invalids home alone amounts to no less than £15,000 a year. Another question which is being investigated by the Royal Army Medical Corps is the occurrence of typhoid carriers and the best method of dealing with them. The special conditions of the army afford opportunities for investigating this difficult question which are almost unattainable in civil practice. The special difficulties of dealing with these cases have been admirably illustrated by Owen Seaman in Punch, who describes how Mary, the Irish cook—

"Herself immune and full of beans,
A state her ruddy cheek confirms,
They say she runs behind the scenes,
A tolling factory of germs;
Wherever, rosy and robust,
She was engaged to boil the victuals,
The family would bite the dust,
Falling about her path like skittles.

Our Mary being shut away For two whole years to get her clean, Is just as germy as the day On which she went in quarantine."

It is our object so to train men that they are capable of making observations for themselves in whatever department of medicine their future career may lie. Those who go into general practice are apt to consider that they have no opportunities for making observations and adding to our general stock of knowledge. This is not so, and good work can be done in general practice in this respect. In fact, there are many important phases of disease which can be better observed in general practice than in hospital wards. The splendid work done by Dr. James Mackenzie at Burnley in applying new methods of observation to the investigation of cardiac disease, and by Mr. A. Maude of Westerham by the accurate and continued observation of Graves's disease shows how much can be done by those engaged in private practice. Once the habit of recording observations is acquired it is not difficult to continue it, and even those who start practice as soon as they have graduated may make useful records of some disease prevalent in the district and so in time gather together useful material for a thesis. Such records may be kept by devoting a short time each day to the work and are in themselves a means of continuing medical education and afford a most valuable method of training and improving the powers of observation.

All those who can would do well from time to time in after life to visit a medical school and obtain post-graduate instruction so as to bring their knowledge up-to-date. On the continent facilities for these holiday courses have long been provided and have proved most attractive. In this country and in Scotland post-graduate courses are now also well arranged to suit the requirements of men who can only spare a short period in the year for such work. Many would do well to imitate the good example of Cullen and William Hunter who were in partnership and made an agreement that each would alternately spend the winter in study while the other carried on the practice. By some such arrangement with a partner or friend a fortnight's post-graduate work every second or third year ought not to be beyond the reach of the majority of medical men.

In conclusion, I should like to congratulate all of you who are entering the medical profession upon the wisdom of your choice, and to wish you all success as students now and as practitioners in the future. To quote the words of Sir Benjamin Brodie: "I know of no profession that is worthy of being pursued which does not require as much exertion, as much labour, as many sacrifices as that in which you are engaged, and I also know of none in which he who has the necessary qualifications is more sure of being rewarded for his labours." Remember that even when you are finally established in practice you will still be students ever striving to acquire greater skill and more knowledge so that you may be in the best position possible to assist all those who come to you for help. Cultivate friendly relationships with your fellow practitioners and avoid all petty jealousies. We may well admire the conduct of Dr. Richard Mead, who would only consent to attend Sir Robert Walpole on the condition that Dr. Friend was released from prison, to whom he then presented a bag containing 5000 guineas, the amount of the fees he had received for him during his imprisonment. In the words of Professor Marx: "The best regulation for the medical profession consists in dignified humanity: this will prescribe, in the simplest manner, its relation to the State, to science, to the public, and to the University. Pure morals, able qualifications, thorough cultivation, are the safest guides.

Abstracts

OF

INTRODUCTORY ADDRESSES, ETC.,

DELIVERED AT THE

MEDICAL SCHOOLS

AT THE

Opening of the Session 1909-10.

ST. GEORGE'S HOSPITAL.

INTRODUCTORY ADDRESS BY H. D. ROLLESTON, M.D. CANTAB., F.R.C.P. LOND., SENIOR PHYSICIAN
TO THE HOSPITAL.

DR. ROLLESTON took for his subject "St. George's Hospital and the Progress of Physic." He said: The objects of the introductory address may be numerous, but the most important motif should be one of welcome to the future, present, and past students. The future students, or those who are here for the first time, may be congratulated on joining a school with famous traditions. It is well on such an occasion as this to recall the achievements of our predecessors so as to keep their memory green, and thereby to stimulate esprit de corps and proper pride in our school. In attempting to record the influence of St. George's men on the advance of our professional knowledge I shall confine myself to medicine as apart from surgery, and as "medicine" on these occasions is commonly used for the whole healing art I must employ the old-fashioned and perhaps pedantic word "physic" to indicate the scope of my remarks.

One of the most distinguished of our physicians was Matthew Baillie, who held office from 1787 to 1800. Trained under the eyes of his uncle, John Hunter, it is not sur-prising that he was early distinguished by publishing, in prising that he was early distinguished by publishing, in 1793, the first book in the English language devoted solely to morbid anatomy. "The Morbid Anatomy of some of the most Important Parts of the Human Body" went through five English editions up to 1818, and was translated into French, German, and Italian. It differed from the monumental work of Bonetus, "Sepulcretum seu Anatomia Practica" (1700), and from Morgagni's famous "De Sedibus et Causis Morborum" (1761), in being restricted to morbid anatomy and not dealing with the records of clinical cases. anatomy, and not dealing with the records of clinical cases, or with the relations of morbid lesions and symptoms. of small size compared with modern works on the same subject, and consists almost entirely of personal observations. Baillie first recognised cirrhosis of the liver, though not under that name which was invented by Laennec in 1819. as a disease distinct from "scirrhous" tumours; he spoke of it as "common tubercle of the liver." He also first pointed out that "polypi of the heart" were really blood-clots, and drew a distinction between cysts and hydatids of the kidney. This work was subsequently supplemented by "An Atlas of Modern Anatomy" (1799–1802), illustrated from his private collection of morbid specimens which he presented to the Royal College of Physicians in 1819, four years before his death. His influence on the study of morbid anatomy was most fittingly recognised by the Pathological Society of London, a medallion of his face being embossed on the cover of the Society's Transactions surrounded by the motto "Nec silet mors." The lamp that he lighted was kept burning at his own hospital by his successors, Brodie, Hope, who published a beautifully illustrated work on "Morbid Anatomy" (1834); by Cæsar Hawkins, Sir Prescott Hewett, G. D. Pollock, Dr. W. H. Dickinson, and Dr. J. F. Payne, who may be specially mentioned as Presidents of the Pathological Society, and by John Ogle and Holmes. Baillie appears to have been a pioneer in the routine physical examination of patients. "Baillie's pill" (pilula digitalis co.), containing digitalis leaves, blue pill and squill, is much the same as the diuretic pill at Guy's. In 1808 Baillie was the second President of the Medical and Chirurgical Society, which, in 1834, became the Royal Medical and Chirurgical Society, and in 1907 was merged into the Royal Society of Medicine. Of the 51 presidents of this the premier medical society in London, St. George's has had its full share, viz., nine—four physicians: Baillie (1808-9), Ohambers (1845-6), Barclay (1881), and Dickinson (1896-7), and five surgeons:

Sir B. Brodie (1839-40), Casar Hawkins (1855-6), Pollock (1866-7), Holmes (1890-1), and Haward (1906-7).

Thomas Young, the most comprehensive genius and the greatest man of science who ever became a member of our profession, was physician to this hospital from 1811 to 1829. He was an example of the old adage that "a prophet is not without honour save in his own country," for it was not until it had been recognised and approved abroad that his great conception of the undulatory theory of light attracted attention in England. He wrote an encyclopædic "Introduction to Medical Literature," and formulated a "System of Nosology (1813), or a classification of diseases arranged in classes, orders, genera, and species on the lines initiated by Linnæus in the natural sciences. Nosological classification was then a burning problem in medical science and there were numerous rival systems, of which, to mention only those of British origin, Cullen's, Erasmus Darwin's, and MacBride's preceded Young's, whilst Mason Good's came out later. Dr. Young's Nosology is very different in arrangement from those of his predecessors, among whom he specially criticises Cullen, is full of bibliographical research, and contains numerous strange names of Greek origin for familiar diseases. In 1815 he brought out "A Practical and Historical Treatise on Consumptive Diseases" deduced from original observations and collected from authors of all ages. The practical part is interesting from the scattered references to the somewhat heroic methods of treatment employed in Dr. Young's own case, for, like many other eminent men of our profession, such as Sir James Paget, Sir Andrew Clark, Sir Michael Foster, he appears to have had pulmonary tuberculosis, but to have recovered. His death in 1829, which was preceded by hæmoptysis and weakness, was ascribed to "ossification of the aorta." For pulmonary tuberculosis in earlier life he had tartar emetic in small doses for hectic fever, had a blister which was kept open for a year, was bled twice, and was in the habit of riding daily.

The services rendered to physiology and so to pure medicine by John Hunter are too wide-reaching to be detailed. Like Hunter, Brodie's physiological and pathological work entitled him to be included among "The Masters of Medicine" series brought out by Fisher Unwin, his life being written by the late Mr. Timothy Holmes. Brodie was the first surgeon, the only other being Lord Lister, to be President of the Royal Society. In this connexion it is interesting to note that the only physicians who have occupied the presidential chair of the Royal Society are Sir Hans Sloane (1727-1740), Sir John Pringle (1772-8), and Wollaston (1820) who, however, threw up this profession in disgust when he was rejected in 1800 as a candidate for the office of physician to St. George's

Of Edward Jenner's discovery of vaccination and its influence on medicine it is impossible even now to realise the full significance. For over a century Jenner's name has been immortal for the prevention of small-pox, and what the future will bring forth in the application by Sir A. E. Wright of vaccine treatment to the prevention and cure of disease it is

impossible to estimate.

In addition to such epoch-making advances there are many points—now so amalgamated into text-book medicine that their sponsors are almost forgotten-concerning which St. George's Hospital may justly feel some proprietary pride. The materials for forming an estimate of these advances are, however, somewhat scattered, and many observations of value must have escaped me. It has been truly said that there is no profession in which a man may be so distinguished in his lifetime and leave behind so slight a record of his life as in medicine. This applies to some of our past physicians, such as Teissier, Broxolme, Sir R. Jebb, Gisborne, R. Warren, and Chambers, who held Court appointments, but never had the time or inclination to record their experience and observations.1

The cardio-vascular system has been a favourite study with our professional ancestors. Hope (1832) and Fuller (1863) wrote systematic works on the subject, and some of the early experimental work on the causation of the sounds of the heart was done in the dissecting-room of the Kinnerton-street School of Medicine, attached to St. George's Hospital, by Hope and his rival, C. J. B. Williams, in 1834 and 1835. These two were candidates for the post of physician in 1839, Hope having in 1835 been elected to the post of assistant physician, then officially established for the first time. The unsuccessful candidate—Williams—was almost at once appointed professor of medicine at University College, and became well known as an authority on diseases of the lungs and as the first president of the Pathological Society. His son, Dr. Theodore Williams, educated at our school, has shown his appreciation of scientific research by generous benefactions to Oxford and to the Royal College of Physicians. Hope described the early diastolic murmur of mitral stenosis, now regarded as caused by pulmonary regurgitation due to backward pressure and dilatation of the pulmonary artery—the pulmonary diastolic murmur of high blood-pressure—but although he looked for a murmur, produced by the auricular systole, before the contraction of the ventricle, he never recognised the presystolic murmur, which was first described in 1843 by Fauvel. The presystolic murmur was criticised by Dr. A. W. Barclay (1872) and by Dr. W. H. Dickinson (1887), both of whom, while fully acknowledging its distinctive characters and diagnostic significance, contended that it was systolic and not presystolic. One of the first descriptions of a ballclot in the left auricle in mitral stenosis was given by Dr. John Ogle in 1863. Pulmonary apoplexies, first really described by Laennec in 1819, were shown to be specially associated with mitral disease by Dr. J. A. Wilson in 1830. This observation, now universally accepted, was very briefly reported, and the original manuscript was only published in 1896 in the St. George's Hospital Gazette by his grandson, Dr. Lee Dickinson. Dr. Robert Lee, the first obstetric physician to the hospital, was well known for his minute dissections of the ganglia and nerves of the heart.² The diagnosis during life of mitral regurgitation by physical signs was really first made possible by Hope's work on the heart. Edward Jenner discovered that angina pectoris depends on disease of the coronary arteries. As is well known, John Hunter suffered from angina pectoris for the extremely long period of 20 years—from 1773 to his death from that disease in this hospital in 1793. In 1776 Jenner saw Hunter, diagnosed his disease, and wrote to the elder Heberden, who was one of Hunter's medical advisers and had recently given a clinical account of the malady, mentioning two cases in which necropsies showed coronary disease. Jenner, however, refrained from making his discovery known out of consideration for the feelings of his friend Hunter. The view now generally held as to the causation of angina pectoris— namely, coronary obstruction—has been contested since 1894 by Sir Clifford Allbutt, who maintains that it is a painful affection of the first part of the aorta, coronary obstruction being a complication and not a necessary factor. Angina pectoris, he argues, is not itself the cause of death, which is due to some additional lesion, such as myocardial or valvular disease. Light was thrown on the pathology of angina pectoris by Sir Benjamin Brodie's observations on intermittent claudication or limp, resulting in muscles supplied by arteries narrowed by disease.

To the work of active members of the staff it would be unbecoming to refer, and as he is so often with us I have hesitated to refer to Dr. Ewart, but in justice I cannot entirely refrain, and must recall his valuable observations on the signs, early and late, of pericarditis with effusion.3 In 1866 Sir Clifford Allbutt was instrumental in introducing into this country the operative treatment of pericardial effusion; J. Ogle and Holmes were among the first to describe aneurysms due to embolism. syphilitic disease of the cerebral arteries was first described by Sir Clifford Allbutt, then of Leeds, in our Hospital Reports (1868, iii. 55) more than 40 years ago. The estimation of arterial blood pressure by instrumental means, which has now come to be an ordinary method of clinical investigation, owes its position in no small degree to the advocacy of the present Regius Professor of Physic at

Cambridge.

Respiratory system. - When the Royal Humane Society was first started John Hunter was appealed to for advice, and in 1776, on the basis of some old but unpublished experiments, he suggested artificial respiration by means of bellows and the employment of oxygen, then recently discovered by Priestley. In 1821, however, as the result of Sir Benjamin Brodie's influence, the society abandoned the use of the

^{&#}x27;1 For the lives of the early physicians to the hospital reference may be made to papers by Mr. G. C. Peachey in the Hospital Gazette (1902, x. 94; 1908, xiv. 25).

² Philosophical Transactions, 1849, 1851. ³ W. Ewart: Brit. Med. Jour., 1896, i. 717.

bellows. St. George's had a good deal to do with methods for the resuscitation of the apparently drowned; Dr. Bowles assisted Dr. Marshall Hall in the elaboration of the method which bears his name, and wrote on this subject, and on which bears his hand, and wrote on this subject, and dis-stertor and its mechanism (1860), pointing out that the dis-tressing stertor and cyanosis of a patient with cerebral hæmorrhage can be rapidly removed by turning him from the dorsal to the lateral position. Dr. Champneys, when assistant obstetric physician, investigated the problem of artificial respiration in the newly born, and pointed out the mechanism by which pneumothorax occurs after tracheotomy. The anatomy of the bronchi and the localisation of cavities in chronic pulmonary tuberculosis were elucidated by Dr. Ewart in 1882. Among the numerous workers on pulmonary tuberculosis none in London has been more consistent than Dr. Theodore Williams, whose name is specially connected with climatic and sanatorium treatment and also with aerotherapeutics. The first specimen of plastic bronchitis shown at the Pathological Society was that described by Dr. Fuller in 1854.

Digestive system. — The epoch-marking discovery that cholera is conveyed by water was made in 1854 by Dr. John Snow, who gave his services to the hospital as anæsthetist. Almost the first case of a pulsion diverticulum at the junction of the pharynx and cesophagus ever published was reported by Dr. John Ogle in the Pathological Transactions for 1866. For many years—in fact, until the early "nineties"—this condition remained a pathological curiosity, but, like many other quondam rarities, it has become a matter of common know-Iedge—probably a hundred cases are on record—and is now recognised as being readily curable by surgical measures. Dr. J. Ogle also contributed valuable papers on diseases of the abdomen and liver, which are so full of careful observations that anyone who comes across some rare and possibly undescribed morbid condition would do well to consult them before publishing his discovery. Lee Dickinson, both alone and with Mr. Warrington Haward and Dr. Penrose, made a careful investigation into the clinical aspects of gaseous subphreric abscess. Disease of the vermiform appendix is such a hackneyed subject now that it is rather surprising to find that as late as 1886, while arguing that so-called "typhlitis" and "perityphlitis" are both due to disease of the appendix, Fagge brings as proof of this a case recorded by Dr. Theodore Williams. Ulceration of the intestines in chronic renal disease was described by Dr. W. H. Dickinson s as albuminuric ulceration, apparently quite independently of Traube's earlier account of the same condition as uræmic ulceration. Dr. Theodore Williams first described pigmentation of the colon from the long-continued ingestion of mercury.

Diseases of the kidneys.—Among the older physicians to the hospital Dr. Donald Monro (1758–1786) wrote on "Dropsy, and its Various Species." Dr. Bence Jones was a recognised authority on chemistry in application to medicine, especially as regards diseases of the kidneys and disorders of digestion, and thus led the way to modern work on metabolism. He described one of the first urinary calculi composed of cystine; and his name is perpetuated in connexion with Bence Jones's protein, or the albumose found in the urine of patients suffering from multiple myeloma of bones. In 1848 he described "A New Substance occurring in the Urine of a Patient with Mollities Ossium"; it seems certain, however, that the disease was not mollities ossium, but the condition of multiple myeloma, described by Kahler, and sometimes called Kahler's disease. Of Dr. W. H. Dickinson's numerous contributions to medicine, the most exhaustive is his great work on "Diseases of the Kidneys"; closely associated with this are his researches on the pathological and clinical aspects of cedema, on granular kidney and the accompanying cardio-vascular changes, on diabetes, and on lardaceous disease. The first full account of uremic skin eruptions in this country was published by Dr. Le Cronier Lancaster 7 in 1892.

Nervous system. - Dr. Dickinson 8 pointed out that atrophic

changes occur in the central nervous system after amputation of limbs, and together with Dr. John Ogle argued against Kirkes's once popular view that chorea was due to multiple cerebral emboli. Sir Prescott Hewett and Dr. J. Ogle described the "arachnoid cysts" with which they endowed our museum. Dr. W. Ogle, the translator of Aristotle, "On the Parts of Animals," who resigned the post of assistant physician in 1872 to direct the vital statistics at Somerset House, his relative, Dr. John Ogle, and Dr. Wadham 10 discussed the explanation of aphasia. In his first paper Dr. W. Ogle 11 confirms Broca's then recent localisation of the speech centre by a number of cases; and in his second contribution he deals with aphasia due to snake-bite. Dr. John Ogle's clinical lecture on aphasia contains interesting historical references to the cases of Dr. Samuel Johnson and Dean Swift. 12 The first case published in this country of "locomotor ataxia with hydrarthrosis" was put on record in the fourth volume of our Hospital Reports by Sir Clifford Allbutt in 1869, the year after Charcot described this condition, which is now usually called after him. He also was one of the pioneers in the introduction of the ophthalmoscope into general medicine as a means of diagnosis (1871), and wrote especially on the ophthalmoscopic appearances in the insane (1868). The normal temperature of the body and the influence on it of physiological conditions, such as exercise, were investigated by Dr. William Ogle and by Sir Clifford Allbutt, and to the latter we are indebted for the present form of the clinical thermometer, as is recorded in the following extract from the catalogue of the Museum of Scientific Apparatus, South Kensington, 1876: "Dr. Atkin used thermometers 10 in. long, and the instrument was hardly met with beyond the wards of a few hospitals. In 1867 Dr. Clifford Allbutt requested Messrs. Harvey and Reynolds to make for him instruments with a chamber anterior to the bulb, reducing the length of the tube from 10 in. to 6 in., then to 4 in. and to 3 in." The temperature in certain nervous diseases, especially tetanus, was investigated by Dr. John Ogle 13 in 1872.

Duotless glands, &c.—In 1846 Fuller demonstrated the blood-picture of spleno-medullary leukæmia, which had been described only the year before by Hughes Bennett in Edinburgh and by Virchow; and in 1880 Dr. Cavafy. 14 then lecturer on physiology, found that only a small percentage (12) of the leucocytes showed amœboid movement. Since 1905 it has become clear that in cases of primary tumours arising in the cortex of the suprarenal bodies (hypernephromas) there may be precocious development, especially of the sexual organs and skin. But 40 years before this Dr. J. Ogle 15 recorded a well-marked example of this association in a child, aged three years, the water-colour drawing of whose body and the tumour being in our Museum. One of the first cases illustrating the now accepted law that primary carcinoma of the thyroid is especially prone to produce secondary growths in bone, was published by Mr. Warrington Haward ¹⁶ in 1882. Dr. H. Watney investigated the histology of the thymus gland. Dr. Cheadle, who, like some other St. George's men, migrated to St. Mary's Hospital, did much to broaden our conception of the rheumatic process, especially in children, and was one of the first to recognise the condition of infantile scurvy. The condition of the viscera in rickets was elucidated by Dr. W. H. Dickinson; and Dr. D. Drewitt interested himself in the rare form of late rickets. Sir Clifford Allbutt provided Sir James Paget with one of the cases on which he based his well-known description of osteitis deformans, one of the conditions spoken of as Paget's disease.

Hypodermic medication.—It is now over fifty years since the method of hypodermic injection of drugs was introduced by Dr. Alexander Wood of Edinburgh. In 1853 he first practised hypodermic injection of morphine for the relief of neuralgia, and an account of this great advance in treatment was published in 1855 as a "New Method of Treating Neuralgia by Subcutaneous Injection." At first the injections were given in the painful part only. It was,

W. Lee Dickinson: Transactions of the Clinical Society of London,
 1893, xxvi. 73, 179.
 W. H. Dickinson: Croonian Lectures, Royal College of Physicians,

⁶ O. T. Williams: Transactions of the Pathological Society of London, 1867, xviii. 111.
7 Lancaster: Transactions of the Clinical Society of London, 1892,

xxv. 49.

*W. H. Dickinson: Journal of Anatomy and Physiology, 1869.

iii. 88, and (Chorea) Transactions of the Royal Medical and Chirurgical
Society, 1876, lix. 1.

⁹ J. Ogle (Chorea): British and Foreign Medico-Chirurgical Review, 1868, xli. 208.

10 Wadham: St. George's Hospital Reports, 1869, iv. 245.

Wadham: St. George's Hospital Reports, 1889, iv. 245.
 W. Ogle: Ibid., 1867, ii. 83, and 1868, iii. 167.
 J. Ogle: Brit. Med. Jour., 1874, ii. 163.
 J. Ogle: Transactions of the Clinical Society of London, 1872, v. 71.

J Ogle: Transactions of the Clinical Society of London, 1872, v. 71.
 Cavafy: Transactions of the Royal Medical and Chirurgical Society, London, 1881, 1xiv. 31.
 J, Ogle: Transactions of the Pathological Society of London, 1865, xvi. 250.
 Warrington Haward: Ibid., 1882, xxxiii. 291.

indeed, in the wards of St. George's Hospital that neuralgia was first treated by suboutaneous injection at a distance from the seat of the pain, and that the hypodermic method was first employed for other than neuralgic affections. This advance was initiated by Mr. Charles Hunter, at that time house surgeon to the hospital, who in 1866 contributed to the first volume of our hospital reports a paper entitled, "Remarks on the Modus Operandi of Hypodermic Injections." Very shortly after this—namely, in 1869—Sir Clifford Allbutt "published the remarkably good results of what was then quite an unknown form of treatment—namely, the injection of morphine in bad cases of heart disease. Snow, who introduced the scientific use of ether anæsthesia into England, worked at St. George's (1847–1858) as ansesthetist.

Treatment of rheumatic fever. - It is fairly safe to say that next to morphine and anæsthetics the drugs most effective in the relief of pain are salicylic compounds. Probably few of the present generation know that in July, 1889, the physician who was largely instrumental in introducing this treatment of rheumatic fever into England, the late Dr. T. J. Maclagan, was an unsuccessful candidate for the post of assistant physician to this hospital. Maclagan, 18 then of Dundee, first published an account of the action of salicin in rheumatism in 1876. It is true that Stricker of Vienna had just begun to employ salicylic acid in the treatment of rheumatic fever, and that Sir W. Broadbent had already obtained good results at St. Mary's Hospital on these lines. The influence of salicylates on rheumatism was in 1876 tested in the hospital by Dr. Cavafy and Dr. Whipham, who thereby helped to confirm the utility of the treatment. Before the introduction of the treatment by salicylates the course of rheumatic fever was very different from that now seen. In 1860 H. W. Fuller 19 wrote: "If the contradictory nature of the treatment recommended for the cure of acute rheumatism be taken as test of its obstinacy and intractability, it certainly is the most tedious and untractable of diseases." Historical interest attaches to the 13 methods of treatment tabulated by Dr. Fuller-namely, bleeding, purging, opium, vapour and hot air baths, mercury, tartar emetic, cinchona, colchicum, guaiacum, nitrate of potash, blist ring, lemon juice, alkalis and their salts. Probably the most successful of these methods of treatment was the alkaline treatment as expanded by Dr. Fuller.

In 1894 or 1895 we were, by the foresight of our then Dean, Sir Isambard Owen, the first school to recognise tropical medicine as deserving of a special lectureship and were fortunate in securing the services of Sir (then Dr.) Patrick Manson as lecturer. The pioneer, if not the founder, of the scientific study of tropical diseases in India was an old St. George's man, H. Vandyke Carter.

St. George's men have also influenced medicine as Regins Professors at Oxford and Cambridge. At Oxford Dr. J. A. Ogle was Professor from 1851 to 1857, and was then succeeded by Sir Henry Acland, who resigned in 1894, after having done so much to render pessible the present flourishing condition of that school. At Cambridge Sir Clifford Allbutt has held the chair since 1892, and as Professor Osler is attached to our teaching staff as Thomas Young lecturer we could not be more highly represented at the older universities. The Armstrong College of Science at Newcastle-on-Tyne enriched itself at our expense by taking Sir Isambard Owen, whom, though he should still be our senior physician, we most cordially congratulate on his recent appointment as Vice-Chancellor of the University of Bristol.

Lastly, St. George's men have influenced the progress of medicine in a manner often overlooked, but none the less important, by the editorial control of medical journals. Dr. Roderick Macleod, one of our physicians, was first editor of the Medical and Physical Journal, which Dr. Sprigge, who now edits The Lancet, describes in his "Life and Times of Thomas Wakley" as "a decent monthly magazine of some 90 pages with no particular reason for its existence." At that time Wakley was sigorously attacking abuses in the medical world in the pages of The Lancet, and the two journals came into opposition, the strained relations eventually landing the rival editors in the law courts. In 1827 Macleod left the Medical and Physical Journal to direct the Medical

17 Clifford Allbutt: Practitioner, 1869, iii. 342.
18 Maclagan: The Lancet, March 4th (p. 342) and 11th (p. 383),
1876.
19 Fuller: On Rheumatism, Rheumatic Gout, and Sciatics, p. 75,

Gazette, which was started by some leading hospital surgeons, including Brodie and Abernethy, to counteract the "evil influences" of The Lancer, but it must be admitted that it was not very successful in the fight against Wakley and his energetic methods. The British and Foreign Medico-Chirurgical Review, which was conducted on much the same lines as the Edinburgh Quarterly, and probably marked the highest level of medical journalism in this country, was for a time edited by Dr. John Ogle.

LONDON SOHOOL OF MEDICINE FOR WOMEN.

INAUGURAL ADDRESS BY MRS. HENRY FAWCETT, I.L.D. Mrs. Fawcett said she had chosen the subject of pioneering because she felt that they were, one and all, and she spoke for herself as well as to the students, too apt to step in and enjoy what had been won for them by the labours of their predecessors as if it had been bestowed, like manna from Heaven, as the bounteous gift of Providence without a thought of the years of courage and self-sacrifice which had been necessary to attain it. The enthusiasm and the genius of the pioneer had been sung by modern poets. She referred particularly to Walt Whitman and Mr. Rudyard Kipling; the latter especially had shown in his poem "The Explorer how keenly he had entered into the spirit of the pioneer. The vision, the sacrifice, the compelling necessity, came to one man in a million; he moved forward and showed the way, then the mass followed and enjoyed the fruits of his labours and hardly gave a thought to him who had put these advantages within their reach. She recognised that this was in a sense quite wholesome and natural. Just as a healthy person never thinks about his health, so those who enjoy what others have won seldom think how those benefits were attained. Still, there was a certain ungraciousness and ingratitude in accepting all that had been won by the labour of others without any sort of acknowledgment. There was only one really valid excuse for this attitude, and that excuse was ignorance. But, after all, complete as the excuse was, it was one of which it was scarcely possible to be proud. Mrs. Fawcett proceeded to make a brief allusion to Mrs. Garrett Anderson's pioneer work in opening the medical pro-fession to women in England, ably seconded as she was by Dr. Sophia Jex-Blake, Dr. Edith Pechey-Phipson, and others, but she dwelt at greater length on the pioneer work done in the same direction some 15 years earlier by another Englishwoman in the United States, Dr. Elizabeth Blackwell, who was still happily to be numbered among our contemporaries. She dwelt on Dr. Blackwell's innumerable difficulties and indomitable spirit in overcoming them; on her essential womanliness (it was characteristic of her that she never lost her English nationality though she was 40 years resident in the United States, and in the same way she never lost the least shade of her womanliness); and on her deep interest in the moral and religious aspect of her professional work. The students of the present day could scarcely have a more interesting and charming work in their hands than Dr. Blackwell's auto-biography called "Pioneer Work in Opening the Medical Profession to Women," published by K. Barry of Hastings. In conclusion, Mrs. Fawcett said that the students she then saw before her would go on their several paths out into the world, and although they themselves would know that they were not pioneers, that the real pioneering had been done for them by their predecessors, yet they might very probably find themselves in positions where the qualities of a pioneer would not be misplaced, and in this case she hoped that something of the pioneer spirit might be vouchsafed to them. The pioneer cleared away obstructions and difficulties, made the road plain and safe for those who followed. If they really wished to recognise with gratitude the work which had been done for them by the great pioneers of the last century, she could wish nothing better for them than that they also should deserve, though they might not receive, the gratitude of those who followed them in the noble profession to which they were preparing to devote their

THE ASSOCIATION OF PUBLIC VACCINATORS OF ENGLAND AND WALES.—This association will hold its annual dinner at the Adelphi Hotel, Liverpool, on Oct. 29th, at 6.30 P.M. The secretary is Mr. Charles Greenwood, 1, Mitre Court-buildings, Temple, E.C.

also light loss, but when it is of normal length and brightness this is not the case. It is evident that we are dealing with two distinct conditions. All who have had practical acquaintance with the subject of colour-blindness are aware that all dichromics (so-called red-green blinds) are not equally colour blind. One dichromic will put a very full red and green together, but another will object to this, but will put together as a match a red and green occupying a relatively nearer position in the spectrum. The dichromic with the smallest neutral band in the centre of the spectrum, separating the two colours red and violet, has the best colour perception. This, it will be seen, is a prediction from the theory, and is inexplicable on any other. A dichromic with the smallest neutral band is very difficult to detect with any of the usual tests, and will generally pass them with ease. The reason of this is that a dichromic of this kind sees about six distinct differences in the spectrum; he sees green as a lighter and greyer colour than red, and distinguishes between them just as a normal-sighted person distinguishes between bluish-greens and blues. This is how the colour-blind match wools. The dichromic are, therefore, those who see two true colours and grey. They regard red, orange, yellow, and half of the green as one colour; the other half of the green, blue, and violet as the other. The presence of a neutral band causes the colours corresponding to this portion of the spectrum to be seen as grey. Therefore the larger the neutral band the more colours will be classed as grey. If the rays which fall within one colour of the dichromic be mixed with those which fall within the other. grev will be the result. Therefore violet and red, instead of making a purple to the dichromic, make a grey, which is indistinguishable to them from the grey made by blue and green.

The next stage of evolution of the colour sense is when the colour-perceiving centre is sufficiently developed to distinguish three main colours in the spectrum. The third colour, green, appears in the centre of the spectrum—that is, at the third point of the greatest difference of refrangibility of the rays. In accordance with the prediction of the theory, I found a considerable number of persons who saw the spectrum in this way, about 1 5 per cent. of men. Sir William Ramsay and Sir J. J. Thomson belong to this class which I have designated "trichromic." The trichromic see three main colours in the spectrum-red, green, and violet. They usually describe the spectrum as consisting of red, redgreen, green, green-violet, and violet. They do not see yellow and blue as distinct colours, and are therefore in continual difficulty over them. There are very few of the tests in general use which can detect them, especially if names be not used. They will usually pass a matching test with ease. An examination with the spectrum shows that their colour perception is less than the normal in every part, though the curve has the same general shape. The three trichromics described in my recent paper on "Observations on Hue Perception" each saw ten consecutive monochromatic patches in the spectrum instead of the 18 or 19 seen by those who see six colours in the spectrum. It is easy to show that the trichromic are dangerously colour-blind. They will mark out with the spectral apparatus a patch containing greenish-yellow, yellow, and orange-yellow, and declare that it is absolutely monochromatic. When tested with coloured lights they find great difficulty with yellow and blue.
Yellow is continually called red or green.

There are several other degrees of colour perception, and it may be well to say a word or two about them, though I class all above the trichromic with the normal-sighted for practical purposes, as they are not dangerously colour-blind and can always distinguish signal lights correctly. In the next stage of evolution four colours are seen in the spectrum, and the fourth colour appears at the fourth point of greatest difference of refrangibility—namely, at the orange-yellow of the hexachromic or sixunit people; these persons I have designated "tetrachromic" because they see four distinct colours in the spectrum—that is, red, yellow, green, and violet. They do not see blue as a definite colour, and are continually classing blues with greens: they usually prefer to call blue, purplish-green. In the next stage in evolution there appeared those who see five colours in the spectrum—red, yellow, green, blue, and violet, blue being now recognised as a definite colour; these are the

pentachromic group. These people pass all the tests in general use with ease; they, however, have a definitely diminished colour perception compared with the normal or those who see six colours in the spectrum. They mark out in the spectrum only 15 monochromatic patches instead of 18. They cannot see orange as a definite colour; for instance, they can never tell whether a strontium light, which is red, or a calcium light, which is orange, is being shown them. In the next stage of evolution orange is recognised as a definite colour, and thus we get the hexachromic or normal group, and, as we should theoretically expect, the yellow of the pentachromic is now split up into two colours-orange and The last stage of evolution which we appear to have reached are those who see seven colours in the spectrum, and the additional one is called indigo. These constitute the heptachromic group, and this seventh colour appears at the exact point which it should appear according to my theory—namely, between the blue and the violet. Persons belonging to this class have a marvellous colour perception and memory for colours. They will indicate a certain shade of colour in the spectrum, and then next day will be able to put the pointer at precisely the same point-a feat which is quite impossible to the ordinary normal-sighted person. They see a greater number of monochromatic patches in the spectrum than the hexachromic, but the curve has the same form. The marking out of the heptachromic does not appear correct to those who see six colours; for instance, the blue appears to invade the green and the indigo does not appear a definite colour at all. If, however, we bisect the blue of the seven-colour man and then bisect his indigo, on joining the centres we get the blue of the six-colour man, showing most definitely that the blue has been split up into two fresh colours.

It will be noticed that there is room for much further evolution, and we could go on splitting up the spectrum indefinitely if only we had the power to distinguish these finer differences, but, as a matter of fact, I have never met with a man who could see more than 29 monochromatic patches in the spectrum, and there are really millions, though by monochromatic patches I do not mean 29 separate colours. Time will not permit me to give an explanation in this paper of all the facts of vision and colour vision, according to this theory. I have dealt with the chief facts in my book on "Colour Blindness and Colour Perception," in the International Scientific Series, and various papers. I am not aware of any fact which does not support the theory. Hendon, N.W.

A NOTE ON THE PATHOLOGY OF LEAD POISONING.

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The symptoms of lead poisoning have been known for many years, and the literature relating to the subject is enormously large. Great as is the number of works, no initial stage of unanimity has been reached concerning the pathology. There are three conceivable channels by which lead may enter the system—namely: (a) through the gastro-intestinal canal; (b) through the respiratory system; and (c) through the skin. For many years the first of these channels was considered to be the one of primary importance, possibly owing to the prominence of colic as a symptom; but more recent investigation, particularly the statistical ones of His Majesty's Chief Inspector of Factories and the Chief Medical Inspector of Factories, have determined that the incidence of industrial lead poisoning varies directly as the dust produced in the particular lead industries. In 1905 one of us (K.W.G.¹) instituted a series of experiments to test the possibility of producing lead poisoning in animals by causing them to inhale lead dust in the form of fine white lead dust obtained

⁹ Transactions of the Ophthalmological Society, 1907.

¹ Goadby, Kenneth W., Journal of Hygiene, vol. ix., April, 1909.

from the exhaust ventilation air duct flues in a white lead works, such dust, for instance, as the workmen are exposed to during the packing of dry white lead. These experiments pointed very definitely to the lung rather than the stomach as the source of poisoning, animals fed with a gramme of lead carbonate per diem surviving those which inhaled

0.3 gramme every third day.

These preliminary experiments have been followed up by a further and extended series of experiments in which other compounds than white lead have been used for the investigations, and we have demonstrated that during the inhalation of finely divided lead compounds lead in the form of dust enters the lung, and becomes absorbed by the tissues of the lung, the lead being demonstrable in the alveoli of the lung, and at times in the protoplasm beyond, and that by lung absorption all the symptoms of lead-poisoning take place. The amount of lead dust present in the air in factories in which poisoning takes place amongst the workers is very much smaller than the quantity of lead present in the air of our inhalation cage. Thus Duckering ² estimates the amount of lead present in the total respired air of a man working in a tinning factory as about 0.014 gramme per diem. The amount of lead present in our cage air varied from 0.0001 gramme to 0.001 gramme per litre; and allowing for the respiration of the cat at about 50 cubic centimetres per respiration, and a respiration-rate of about 25 per minute, the cat would inhale 0.03 gramme of lead during the 30 minutes it was exposed in the cage, this being every other day, and occasionally with three-day intervals; three months were required to produce unmistakable clinical symptoms. The quantity of lead found in the air of tinning factories is much larger than is the amount present in the air in the potteries, but it is not much in excess of the quantity present in dusty processes in white lead works. Our experimental conditions were certainly more severe than those of industrial processes. Still, from an experimental point of view it is of the greatest importance to induce the poisoning as rapidly as possible, providing always that the clinical symptoms of the animals are comparable to those of man under natural conditions. This we found to be the case. The animals suffered from emaciation which was progressive, paralysis, and in many instances died with symptoms suggestive of involvement of the brain. These symptoms are analogous and, we believe, homologous with the saturnine cachexia seen in lead workers, the wrist-drop and other forms of paralysis, and finally acute encephalopathy and lead mania.

Compounds of lead other than white lead were also used, and in every case symptoms similar to those observed in man have been produced. The other compounds of lead used were lead acetate, litharge, lead dust from de-silverising works, and lead bisilicate of a form used in the potteries. The animals used for experiment have been mainly cats (35), though one dog was used. These animals are especially susceptible to lead poisoning, and it is common knowledge that when kept as domestic pets in lead works they soon develop lead poisoning. In three instances we have ad-ministered alcohol in addition to lead, and find that alcohol increases the susceptibility and diminishes the latent period of lead poisoning. Careful post-mortem examinations have been made of the animals that died. The tissues have been examined histologically with a view to determining the primary action of lead on the animal tissues and to establish the specific pathological lesions produced. We desire here to express our warm appreciation and grateful thanks to Dr. H. R. Clark, who has undertaken the histological examination of the nervous tissues and has also given us much valuable help and advice.

The material that comes into the hands of the pathologist in cases of industrial lead-poisoning is generally derived from chronic poisoning, rarely of acute poisoning, and it is particularly in these cases that a diagnosis of "death from lead poisoning" is an exceedingly difficult one to make. The literature, as has already been stated, is very extensive, and at the same time remarkably contradictory. Kobert, in summing up the general effect of lead on the animal body, states that "lead attacks especially the striped and unstriped muscles, the epithelium of the excretory glands, the neuroglia of the central nervous system, and it is especially a protoplasmic poison." The principal clinical manifestations of lead poisoning are lead colic, lead paralysis, and

perhaps lead encephalopathy. It is in the pathology of these symptoms that the greatest variation is to be found in the records of different workers.

One series of observers consider that the action of lead is directly upon the central nervous system, producing on the one hand colic and on the other paralysis of the motor nerves, as in the extensor paralysis of wrist drop (Quensel, Rudolf Meyer, Gesenius, &c.). On the other hand, Küssmal and Paul Maier, Mossé and Galvini describe sclerosis of the solar plexus, cœliac ganglia, and also—particularly Eichorz 10 -consider that the damage is one mainly located in the spinal cord. Another series of observers, among whom may be named Riegels, 11 who examined 200 cases of colic, and Jaccoud and Weber, 12 consider that such symptoms as colic, amaurosis, and amblyopia are referable to vaso-motor spasm of the blood-vessels, particularly in colic to the inferior mesenteric arteries, actual stasis producing the amaurosis. Galvini 13 describes in a man of 54 who was subject to chronic saturninism and who died in a condition of extreme cachexia, perihepatitis, perisplenitis, wasting of the stomach, liver, and spleen, and inflammation of the solar plexus. Paul Maier 14 found sclerosis of the connective tissues of the coeliac plexus. Further, a later series of observers, amongst whom are Gravitz, 15 Litten, 16 Hamel, 17 and Keil, 18 describe a degeneration of the red blood corpuscles as an early symptom of lead poisoning. This consists of an altera-tion of the protoplasm of the blood discs with basophile staining. Some observers think that the peripheral nerves and the motor nerves undergo degeneration, as did Prevost and Binet. 19 Nissl 20 describes characteristic degeneration of the cortical cells of the brain. And, finally, Glibert, 21 who fed a number of rabbits on lead carbonate in the form of pills, found congestion and stasis of the liver, fibroid changes and emphysema in the lungs, and kidney degeneration of a fibroid nature, and occasional microscopical hæmorrhage. Oliver 22 notes kidney degeneration of a parenchymatous nature in rabbits poisoned with white lead, and Weber 23 and Virchow 24 describe degenerative nephritis. There is thus a considerable difference of opinion as to the exact action of lead, but distinct consensus of opinion that its pathological effects are widespread.

We think it will be possible to show by the histology of our animals that any one of the symptoms and histological findings described is consonant with the primary effects of lead intoxication-namely, microscopical hæmorrhages, affecting practically all the tissues of the body, as well as the nervous system, central and peripheral. A detailed account of our experiments is out of place here, and we have therefore summarised our results. The lead compounds were administered by inhalation, hypodermic injection. and

feeding.

SYMPTOMS PRODUCED.

1. Loss of weight.—In all cases during the early stages of the experiments, in which the animals became ultimately poisoned, the weight at first increased, but subsequently fell progressively until the animal had lost one-third, sometimes two-thirds, of its body weight before it died. The control animals kept in the laboratory did not show this variation, but maintained a steady level of weight. The animals fed on white lead have so far exhibited no signs of lead poisoning, and there is at the present time in the laboratory an animal

8 Mossé, M.: Zeitschrift für Klinische Medicin, Band l., 1903.

Duckering, F., ibid., vol. viii., November, 1908.
 Budolf Kobert: Lehrbuch der Intoxikationen, p. 361.

Quensei, F.: Archiv für Psychiatrie, Band xxxv., 1902.
 Meyer, Rudolf: Virchow's Archiv, Band xc., 1882.
 Gesenius, E.: Dies Freiburg, 1887.
 Küssmal and Paul Maier: Archiv für Klinische Medicin, Band ix.,

⁹ Galvini, R.: Rivista Clinica, fas. 3, 1884.

10 Bichorz: Virchow's Archiv, 37, 120, 1890.

11 Riegels: Kobert, Lehrbuch der Intoxikationen, p. 363.

12 Jaccoud and Weber: De l'Amaurose Saturnine, Thèse de Paris,

¹³ Galvini, E.: loc. cit.
14 Meyer, Rudolf: loc. cit.
15 Gravitz: Deutsche Medicinische Wochenschrift, 1899, No. 36 ; ibid., 1901, No. 52.

¹⁶ Ibid, 1899, No. 44.

17 Hamel: Deutsches Archiv für Klinische Medicin, Band ixvii., 1900.

18 Keil, R.: Archiv für Intern. Pharm., 10, 1902.

19 Prevost and Binet: Revue Medicale de la Suisse Romande, II.,

^{1889.}Nisel, F.: Aligemeine Zeitschrift für Psychiatrie, Band xlv., 1892;
Band iv., 1897.
Glibert, D.: Le Saturnisme Experimental, Extrait des Rapports
Ann. de l'Insp. du Travail, 1906.

23 Oliver, Sir T.: Milroy Lectures, 1891, p. 96.
24 Virchow: Berliner Klinische Wochenschrift, 1884.

which has been fed on white lead for eight months, at first with 0·1 gramme, then with 0·5 gramme, and finally 1·0 gramme of lead per diem. This animal even now exhibits no signs of poisoning. Three other animals fed on white lead, &c., for shorter periods show no signs of poisoning.

2. Paralysis.—The paralysis in our animals has been generally confined to the hind limbs. Those animals which have been inoculated with either acetate, carbonate, or bisilicate of lead died exhibiting signs of paralysis. The knee-jerks are at first increased and then become sluggish; considerable wasting of the muscles takes place; the animals tire upon the least exertion, a run of 24 yards completely exhausting an animal that is passing under the influence of lead. The animals also adopt voluntarily a oharacteristic attitude; when taken out of their cages the animals at first stand with their hind legs well extended, the position of the knee-joint being normal. In a few seconds the quadriceps extensor slowly yields and the animals finally crouch or sit down. At the post-mortem examination the muscle is wasted and flabby. When the animal rolls over on its side and attempts to rise afterwards there is considerable difficulty in extending the knee-joint, the animal getting up with a jerk of its other muscles. In advanced cases the animals are only able to jump three or four inches from the ground.

3. Mental condition.—The animals remained perfectly friendly until the paralysis became well established, and it was often difficult to listen to their hearts with a stethoscope on account of their persistent purring. Finally, a distinct mental change was noticed, the animals became torpid, then irritable, highly nervous, and developed well-marked intention tremor, all pointing to cerebral irritation. In three instances fits occurred immediately before death; in one case the fit was of an epileptiform nature, commencing with twitchings and ending in clonic spasm.

4. Eyes.—In two instances amaurosis was present. The reaction to accommodation and light is invariably sluggish or entirely lost; the retinal vessels were tortuous and hæmorrhage was seen in one instance. The loss of reaction

to light and accommodation was noticed by one of us (K. W. G.)²⁵ in the first series of animals experimented

upon.

5. Post-mortem appearances. - All the animals that died were submitted to an exhaustive necropsy. The post-mortem appearances were practically identical in all the animals: there was an entire loss of all subcutaneous and mesenteric fat, and the omentum was practically non-existent. Occasionally the diploë of the skull was deeply congested, more especially in the inoculated animals. The liver and intestines were injected, the liver especially being engorged with blood. The lungs as a rule were normal, but rather full of blood, and in the animals subjected to inhalation the bronchial glands were found enlarged and often full of blood. There was practically no fat around the kidneys, but the capsule of the kidneys stripped easily. In one or two instances shrinkage of the cortex was noticed, but the most prominent symptom was the marked injection of the vessels on the surface of the kidney. The kidney on section was engorged with blood. No extravasation of blood was seen in the peritoneal cavity, except in one instance where a hæmorrhage had occurred near the suprarenals and in the region of the kidney. Small punctiform hæmorrhages were at times found in the stomach, in the duodenum, and the rest of the intestine; they were more marked in the lower end of the intestine and particularly around the ileo-cæcal valve.

Further, in animals which had not received any lead by the mouth at all, and in which the poisoning was produced by the subcutaneous injection of a lead compound, there was very distinct blue-black staining of the upper half of the cæcum and extending up into the vermiform appendix. The spleen was normal. The muscles were normal but flabby; where paralysis had existed the corresponding muscle was found diminished in size. The surface of the brain appeared normal, but the vessels were somewhat larger than in a normal animal. The vessels of the spinal cord were also somewhat increased in size, but there were no obvious hæmorrhages, nor were any macroscopical hæmorrhages found on making sections of the brain.

6. Histological examination. - Portions of the heart, lungs,

liver, spleen, intestines, stomach, and kidneys were preserved in formalin, cut in paraffin, and stained by Heidenheim's hæmatoxylin and eosin, and by van Geissen's method. Portions of the anterior crural nerve supplying the paralysed quadriceps extensors were examined in celloidin and also sections of the spinal cord and the cortex of the brain. This portion of the histology was undertaken by Dr. R. H. Clark. In all the tissues examined a distinct engorgement and increase in size of the blood-vessels were found; here and there the smaller vessels, particularly the capillaries, were over-distended, and in addition numbers of minute microscopical hæmorrhages were everywhere apparent in the brain, cord, liver, kidney and lung, &c.

In the kidneys the same microscopical hæmorrhages were seen with some slight changes in the epithelium of the tubules and a small amount of parenchymatous inflammation, no doubt due to the hæmorrhages which had taken place. The kidney, on the whole, seemed to suffer less than the lungs or liver. And in this connexion it is worth noting that clinically no obvious signs of blood are noticeable in the urine of persons suffering from lead poisoning. Thickening of the arteries in the various organs was not well defined; the veins rather than the arteries appear to be the source of the hæmorrhages. In the anterior crural nerves supplying the paralysed quadriceps extensor minute hæmorrhages were found between the nerve bundles, but not generally invading the nerve bundles, nor was any degeneration found either in the nerves supplying the muscle or in the sections of the cord examined; in places it was seen that the hæmorrhage was producing pressure. Hæmorrhage was also found under the pia arachnoid, which was somewhat thickened. The whole histological picture was one of microscopic

The whole histological picture was one of microscopic hæmorrhage occurring in the various organs and tissues, and it is evident that the minute hæmorrhages are the precursors of the fibroid and scierotic changes that pathologists have seen in the tissues derived from cases of lead poisoning. Moreover, it is important to note in this connexion that not a few of the symptoms in lead poisoning have been ascribed to stasis and vaso-motor spasm or vaso-constrictor spasm of the various blood-vessels. In poisoning by nickel carbonyl Armit 26 has shown that the poisoning is due to the nickel and not to the CO, that the nickel is absorbed through the lung, and that injections of other nickel salts produce the same pathological changes as inhalation of nickel carbonyl. In animals poisoned by nickel minute hæmorrhages occur in

all the tissues, especially the brain.

Further, and of great importance, Mott describes in a recent paper 27 in the Archives of Neurology and Psychiatry the histology of a case of fatal lead encephalitis, in which he found minute hæmorrhages due to the breaking down of the cortical vessels of the brain, degenerative hyaline thickening of the walls of the small vessels, together with a hyper-trophy of the branching glia cells. The case described by trophy of the branching glia cells. Mott was a coach-painter, who developed lead poisoning at his work. The clinical symptoms were progressive loss of power, epileptiform seizures, followed by a mental condition of restlessness and irritability, paralysis, tremor, fibrillary twitchings, impairment of vision, tortuosity of retinal vessels, all exactly conforming to the symptoms noted in our experimental animals. Histologically the heart, spleen, liver, and lung of Mott's case showed fibroid thickening with a condition of angio-sclerosis in which arteries and veins were involved; the head of the cæcum was darkly stained. The kidneys showed interstitial fibrosis and hyaline degeneration, while the vascular coils in the capsules were frequently replaced by a hyaline purple-staining mass. Microscopical hæmorrhage was found in the spinal cord; the vessels showed thickening and hyaline de-The staining of the lower part of the intestine, particularly in the region of the ileo-cæcal valve, is a point of considerable importance, as much of our work points to the excretion of lead by way of the fæces, and in our animals which were poisoned by inoculation, lead was undoubtedly present in the large intestine, the staining of the lower part of the intestine being similar to that noted by Newton Pitt.

We conclude, therefore, from our experiments that the essential and primary action of lead intoxication is the

Armit, H. W.: Journal of Hygiene, vol. viii.; Proceedings of the Royal Seciety, vol. lxxvii., p. 420.
 Mott, F. W.: Archives of Neurology and Psychiatry, vol. iv., p. 117.

preduction of minute and microscopical hæmorrhages in various portions of the body, including the nervous system. That the clinical symptoms of lead palsy, and its good prognosis when treated early, are explainable by the presence of minute hæmorrhages in the peripheral nerves. The presence of these minute homorrhages in the nervous system also gives an explanation of the varied pathological findings of many previous workers.

STUDY OF SPINAL ANÆSTHESIA IN CHILDREN AND INFANTS.

FROM A SERIES OF 200 CASES.

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(Continued from p. 917.)

II.—A STUDY OF THE SECOND SERIES OF 100 CASES.

IT is apparent from a critical study of the first series of cases that in a considerable proportion of these there are certain disadvantages which, though not serious in themselves, may detract from the utility of this method in the surgery of children. For instance, the occurrence of any of the symptoms recorded in the previous contribution in a case where serious collapse was present might add considerably to the critical condition of such patient and make it doubtful whether there is any advantage to be gained over general anæsthesia.

In the first series there was a boy about nine years of age suffering from streptococcal general peritonitis. The advisability of interference was considered, and, as general anæsthesia was out of the question on account of the extremely collapsed condition of the patient, it was decided to attempt operation under spinal anæsthesia. A small injection (3 centigrammes stovaine) was administered and the peritoneal cavity thoroughly cleansed, the whole operation lasting about 45 minutes; during this time there were no symptoms of shock and the gravity of the child's condition was in no way accentuated. There was no vomiting during the manipulation of the intestines, nor did any signs of toxemia, pallor, sweating, &c., supervene. The child died shortly after his return to the ward, or rather over an hour from the time of the injection. An interesting feature was the striking absence of shook during the manipulations within the abdomen, and, further, three points in the case present themselves for consideration as accounting for the death :-

1. The disease. - The peritonitis was so advanced and general, and the patient so clearly toxic, that I think it possible death might have occurred within an hour or two if no operation had been attempted. It was clear, in any case, that the administration of general anæsthesia would not have permitted more than incision and drainage of the abdominal cavity, if as much.

2. The injection.—Against the view that the injection of stovaine accelerated death is the important fact that in all cases in this series where any symptoms were present, these supervened at the latest within 20 minutes from the administration of the anæsthetic. It is extremely unlikely, therefore, that the progress of the disease was accelerated by any of the toxemic symptoms referred to, for these should have made themselves evident earlier, and the boy should have manifested serious symptoms during the progress of the operation.

3. On no occasion in the first series did I succeed in obtaining anæsthesia of the abdomen of more than one hour's duration. I think it probable, therefore, that the shock of the manipulation made itself felt as the anæsthesia of the abdomen was passing off, and that it was this factor which added to the gravity of the collapse due to the disease and

contributed to the fatal result.

Whichever of these views be accepted, however, it is clearly desirable to abolish or minimise, if possible, symptoms which, though they do not materially influence the course of routine operations, may add considerably to the existing collapse in "desperate" cases, where the use of spinal ansesthesia is so strongly indicated. The prevention of the eccurrence of these symptoms is only possible if we have an

accurate knowledge of their causation, and this I now propose to consider.

Mr. W. Peck, chemist to the Hospital for Sick Children, has during the last ten months been kind enough to spend a great deal of time and trouble in making all the chemical and physical observations I have asked of him-and his results, controlled and repeated, have been of great value. It has been estimated by Dr. J. Graham Forbes that the normal amount of cerebro-spinal fluid in the body is about two ounces. He states that the solids average about 1 per cent. and include 0.8 to 0.9 salts and 0.1 to 0.2 proteid and extractives. It is the salts which are of the greatest importance in the subject under consideration, and these are approximately as follows: - Sodium chloride, 0.7; potassium chloride, 0.03; alkaline and earthy phosphates, 0.013 to 0.02; and sulphates and carbonates, traces. These figures are, of course, subject to considerable variation under different physiological conditions.

In a series of normal children, from whom I obtained cerebro-spinal fluid on the operating table, the specific gravity was found to vary from 1.0054 to 1.0071, the fluid of older children tending to be of a higher density than that of infants and younger children. In extreme collapse, however, as would be anticipated, there is a considerable increase in the specific gravity of the cerebrospinal fluid. Thus in two infants with advanced intussusception the cerebro-spinal fluid was 1.0080 and 1.0076 specific gravity; in another case the specific gravity rose to 1.0083. Since this variation is largely due to the crystalloid substances, the depression of the freezing point or the osmotic pressure of the cerebro-spinal fluid alters accordingly, and I hope to show that this is of some importance in connexion with the safety and utility of spinal anæsthesia. In the explanation of the unpleasant symptoms referred to authors have differed widely. Mr. A. E. Barker,2 for instance, attributes fainting and collapse to the fact that the paralysis of the abdominal muscles so far relieves intra-abdominal pressure that the large veins become engorged with venous blood, and so a cerebral anæmia is produced. From the experience in my own cases I have been unable to satisfy myself that this factor plays more than a very small part, if any, in the production of these symptoms and for the following reasons:-

1. These complications have not infrequently occurred in cases of low anæsthesia when there has been no paralysis of the abdominal muscles.

2. The abdominal muscles have frequently been completely paralysed without any untoward symptoms resulting.

3. In every laparotomy I have performed under spinal ansesthesia I have examined carefully for signs of venous engorgement but without success.

This last reason has led me also to disbelieve the further statement that in these cases symptoms are due to paralysis of the splanchnic nerves and the resulting arterial hypersemia of the viscera, for I have always noted, and frequently demonstrated to others, the definite anæmia and pallor of the intestines during spinal anæsthesia.

4. If there were any marked tendency to engorgement of the mesenteric veins this factor would only be of importance in the erect position and should be counteracted (to a very great degree, at any rate) by the raised pelvis position employed by Mr. Barker or by the Trendelenburg position, adopted by many surgeons, especially on the continent. I have not found the former a controlling factor.

5. The onset of the symptoms takes place from 10 to 20 minutes after the injection of stovaine when the paralysis of the abdominal muscles has been present for some time (i.e., about 15 minutes). Further, the onset of pallor has been noted as being delayed as long as 25 to 30 minutes on occasion.

6. If Mr. Barker's explanation were the correct one, it would be expected that the vomiting would follow the pallor and the cerebral ansemia, but the reverse is the usual

sequence.

I have been led to believe, therefore, that the etiology of these complications is to be sought for in another direction.

Now, in administering a spinal anæsthetic, fluid of a much higher specific gravity and a rapid diffusibility has hitherto been introduced into the spinal theca. Mr. Peck has

¹ Graham Forbes: Estratto dai Lavori e Riviste di Chimica e Microscopia Clinica, vol. i., Fasc. ii. and iii., October-November, 1908.

9 Brit. Med. Jour., March 23rd, 1907.

estimated for me the osmotic pressures of the various fluids used as indicated by their depression of the freezing point. Thus :-

TABLE I.

Cerebro-spinal fluid (from an average of 4 cases)		D.F.P.		0.61°C
1. 1 % sodium chloride		D.F.P.		0.65°
2. 5 % glucose		D.F.P.		0.540
3. Normal saline (used in the second series)		D.F.P.		0.600
4. Normal saline and dextrin (6.5 %)		D.F.P.		0.65°
5. Glucose-stovaine solution (5 %) (5 %)	•••	D.F.P.	•••	1·20°
6. Dextrin-stovaine, normal saline				
(4 %) (2½ %)		(for 2 estin	mai	ions).
(No. 6 is Fluid 1a, referred to in	Tal	ole II.)		

It is thus seen that, though theoretically dextrin should not yield any depression of the freezing point, yet in actual practice this does take place to a very slight extent owing to small traces of sugar present in the solution, especially after prolonged heating. I shall refer again to this table of osmotic pressures.

Now the fate of a fluid of high diffusibility and specific gravity can best be ascertained by considering the physiology of the cerebro-spinal fluid. For information on this subject I will refer to Dr. Leonard Hill's book on the "Cerebral Circulation." Dr. Hill in this work gives his own observations and those of other authorities, and as their results seem to me to have an important bearing on the subject under consideration I shall draw largely from the statements in this book. Thus Adamkiewicz states: "That every tendency of the cerebro-spinal fluid to take up a higher tension than normal is stopped by the passing of fluid into the blood, and this resorption goes on till the tension is equal to the blood pressure." Though it is important to know this, it is of still greater moment to know at what part of the cranio-vertebral cavity absorption of fluids takes place to the largest extent and with the greatest rapidity. "Falkenheim and Naunyn passed a catheter up the cauda equina into the subarachnoid space and allowed normal saline to run in from a pressure bottle. At a pressure of 15 mm. Hg absorption was apparent but very slow. At a pressure of 59 mm. Hg it reached 1 c.c. a minute. When a ligature was drawn round the dura at the level of the second or third cervical vertebra so as to cut off the spinal from the cranial cavity, the rate of absorption was lessened from 6 c.c. in 10 minutes to .6 c.c., the pressure of the injection being 40 mm. Hg. According then to the result of this experiment, the oranium is the chief seat of absorption."

Dr. Hill further has found that saline injected at any pressure above the cerebral venous pressure disappears from the cranio-vertebral cavity, and that the higher the pressure the more rapid its disappearance. Saline coloured with methylene blue could be traced passing straight into the venous sinuses, and in so short a time as 10 to 20 minutes the blue colour could be found secreted in the stomach and in the bladder. Dr. Hill concludes that this absorption takes place by way of the veins and not the lymphatics, and that the human dura permits of easy filtration of fluids (namely, at 40 mm. Hg). Therefore at moderate pressures fluids in the cranio vertebral cavity can evidently pass quite easily direct through the dura into the venous sinuses. Experiments are recorded in support of these statements.

It has been shown that under abnormal pressures both secretion and absorption of fluid from the cranio-vertebral cavity become filtration. "Under normal pressures, however, the secretion and absorption of cerebro-spinal fluid does no doubt follow osmotio laws," for Professor Halliburton and others are quoted by Dr. Hill as having found that "cerebro-spinal fluid, when originally drawn off from the subarachnoid space, has a peculiar chemical composition, but on being drawn off again and again, after refilling of the space, it equals more nearly the composition of serum."

That there is another pathway than the Pacchionian granulations at the cavernous and longitudinal sinuses, by which fluid in the cranio-vertebral cavity can be absorbed, is proved by the experiment of Reiner and Schnitzler, who found that potassium ferrocyanide injected into the cranium of rabbits was found very rapidly in the jugular vein. Dr. Hill states that the most favourable condition for increasing the outflow of cerebro-spinal fluid is a high arterial tension (increasing transudation) coupled with a high venous tension (preventing

To return to a consideration of my first series of cases. When stovaine-glucose solution (or any other solution of a high diffusibility and specific gravity) is injected into the subarachnoid space it spreads over the nerve roots up and down by several methods.

1. Diffusion.—This is by far the most important method, for whereas the cerebro-spinal fluid has a very high freezingpoint the fluid injected has a considerably lower one.

2. Gravity.—This factor is also of great importance, as has been most clearly demonstrated by Mr. Barker.

3. Force of injection.—This factor, together with the disturbance of the cerebro-spinal fluid resulting, will also help to distribute the solution.

By a combination of these three factors the fluid must travel up the spinal subarachnoid space towards the cranial cavity, until all the fluid in the cranio-vertebral cavity has the same osmotic pressure. This travelling of the fluid towards the cranium is greatly accelerated by debility or collapse, when the arterial and venous tensions are below normal (vide supra).

I have not mentioned a fourth factor by means of which it is held that fluids may travel towards the cranium-namely, by a shifting of the entire column of fluid in the craniovertebral cavity with the change of position of the body (Bier and Donitz). I have not included the view because it seems so difficult to understand how a whole column of fluid which completely fills a more or less closed cavity can suddenly change its situation with a change of posture. injected fluid must therefore soon reach the cranium. (Mr. Barker, as has been previously stated, has made a great advance on continental methods in endeavouring to prevent this by the action of gravity, and he has no doubt succeeded to a great extent, but not completely, for he has not eliminated the most important factor—namely, diffusion.)

Now, once the injected fluid has reached the cranial cavity, though the solution of the anæsthetic agent is too dilute to give rise to any dangerous local paralysis (provided the dose be reasonable), we have several factors to consider which I think can almost be proved to be the main cause of the unpleasant complications referred to. In the first place, the freezing-point of the cerebro-spinal fluid is lowered; its osmotic pressure consequently is higher. Therefore, by osmosis fluid will pass from the venous sinuses into the cranio-vertebral cavity, while stovaine and glucose will pass from this cavity into the venous sinuses. If this occurs to any extent-i.e., when solutions of a very high specific gravity are used—there should be a diminution of venous tension in the cranium, and secondarily also of arterial pressure, so that the conditions most favourable to absorption are established (vide supra). Two factors in the production of the sequelæ under discussion thus assert themselves:—

1. The mere fact of fluid passing from the venous sinuses into the cranio-vertebral cavity will suddenly, if only temporarily, diminish the intracranial blood pressure and might be sufficient to cause syncope. In healthy subjects whose arteries are elastic the circulation can easily re-establish the normal conditions, but in patients who are the subjects of arterio-sclerosis it is conceivable that so rapid a diminution of the intracranial pressure might not be so quickly compensated and a more serious condition result.

2. The main effect, however, of this sudden diminution of intracranial tension is to accelerate still further by filtration the absorption of the toxic agent into the circulation, for we have seen that, at the same time, the tension of the cerebrospinal fluid is increased by the passage of fluid into the cranio-vertebral cavity.

It follows that the injection of the fluid, intended to produce spinal anæsthesia only, really establishes, to a more or less marked extent, three factors which all tend to promote the absorption of the toxic agent. It is interesting to read Dr. A. E. Russell's views as to the etiology of epilepsy and petit mal, set forth in the Goulstonian lectures of this year. Dr. Russell considers the exciting agent of an attack of petit

absorption). It is the laws of absorption of fluid from the cranio-vertebral cavity under normal pressures which concern us most in studying the question of spinal anæsthesia. if the quantity of fluid injected be not very great the pressure will not be very appreciably altered.

³ Leonard Hill: Cerebral Circulation, Churchill, 1896.

Münchener Medicinische Wochenschrift, vol. II., 1904, pp. 593-596.
 THE LANCET, Sept. 25th, 1939, p. 913.
 Disorders of the Cerebral Circulation, The Lancet, April 3rd, 10th, 1909. and 17th, 1909.

Table II.—Showing the Effects of Employing Dextrin-Stovaine Solutions in Varying Proportions.

	1	Details	of admini	stration	n, time	, dose,	&c.	Relation to dura	of d	dose n.		Con	plications a	nd seque	læ.		
	No. of cases.	General anæsthesia.	Average dose.	Average age.	Average time.	Longest time.	Shortest time.	Dose administered.	No. of administrations.	Average time.	Vomited during operation.	Retched during operation.	Vomited, &c., after operation.	"Respiratory" pallor, &c.	Toxic pallor, sweating, &c.	Total pallor.	Headache,
Stovaine- glucose	14	1 case = 7%	4½/5 e.e. = 2·25	4 yrs. 6 mo.	1 hr.	13 hr.	40 min.	3/5 & 4/5 c.c.	7	50 min.	= 2 14 %	= 7%	= 3 %	= 3 %	4 =28 %	= ⁷ / _{49%}	= 7%
solution.			cgm. stovaine.					5/5, 6/5, & 7/5 e.e.	5	1 hr. 10 min.		42 %					
Α.	8	1 case = 15.5 %	5½/5 c.c. =2.7 egm. stovaine.	3 yrs. 8 mo.	30 min.	1 hr.	20 min.	4/5 & 5/5 c.c. 8/5 & 10/5 c.c.	5 2	20 min. 47 min.	2 (same child) = 25 % (12% children)	0	0	0	0	0	slight = 12%
			1/2 y									12%					
1, la, & 1b.	20	2 cases = 10 %	$5\frac{1}{2}$ /5 c.c. =2.7 cgm. stovaine.	5 yrs.	50 min.	1 hr. 20 min.	30 min.	5/5 e.c. 6/5 & 7/5 c.e.	9	57 min. 62 min.	= 10%	0	= 40%	= 315%	0	= 35%	slight = 5%
			AL IN									50 %					
В.	9	0	3/5 c.c. = 3·18 cgm. stovaine.	6 yrs. 2 mo.		1 hr. 10 min.	30 min.	$3\frac{1}{2}/5$ c.c. $1\frac{1}{2}/5$ c.c.	5	min.	= 22%	0	0	= 11%	0	= 11%	slight = 11%
B1.	27	1 case = 3.7%	3½/5 c.c. =3.5 cgm. stovaine.	4 yrs. 8 mo.	52 min.	1‡ hr.	35 min.	2/5 & 3/5 c.c. 4/5 & 5/5 c.c.		50 min. 57	= 4%	= 15%	= 11%	= 33.3%	0	= 33·3%	1 slight =3.7%
								-		min.	30 %						1
B2.	17	= 17.6%	3.7/5 c.c. =3.7 cgm. stovaine.	5 yrs. 3 mo.	50 min.	1 hr. 25 min.	20 min.	3/5 & 3½/5 c.c. 4/5, 5/5, & 6/5 c.c.	9	54 min. 43 min.	0	3 (hiccoughs 30%).	1 (included in previous column).	= 23.5%	0	=23·5%	0
	1		PRINTER PROPERTY	1		1						30 %					
D.	5	1	Time		ed in the	iree cas	ses				1 copious.	1	2 (1 included in "vomits" during operation).	2	1*	3	1 slight

* Marked.

mal or of the major syndrome to be primarily circulatory in origin, and he adduces evidence to show that a cerebral anæmia starts the fit. It is possible, therefore, that the patients who exhibit a tendency to syncope under spinal anæsthesia belong to this class of subject and are the victims of constitutional conditions similar to those predisposing to epilepsy and petit mal. For the syncopal attacks seen under spinal anæsthesia are in many respects similar to petit mal and even amount to epileptiform attacks, and may perhaps be excited by the rapid diminution of intracranial pressure above alluded to. This view might account to some extent for the apparent idiosyncrasy in such cases.

If these suppositions are correct the administration of spinal anæsthesia by means of diffusible solutions is definitely contra-indicated in subjects of arterio-sclerosis, and in this connexion it is interesting to note that most of the deaths under spinal anæsthesia which have been reported have been in patients of an age which renders it likely that they were suffering from this disease.

The point on which I am anxious to lay the greatest stress is that the vomiting, lividity, and sweating are in the main due to poisoning by the anæsthetic agent which is absorbed vià the cranial venous sinuses into the general circulation and so produces far-reaching effects. To ensure the safety of the procedure we should endeavour to limit the action of the anæsthetic agent to the vertebral cavity; this Mr. Barker has shown us how to do by employing gravity. We must further prevent the absorption of the drug by keeping it in

⁷ Löffler: Münchener Medicinische Wochenschrift, 1906, p. 95.

the spinal theca, where, as has been stated, practically no absorption takes place; to do this the diffusibility of the fluid must be reduced to a minimum, and then absorption cannot take place to any extent. Further, means must be adopted to eliminate the conditions previously referred to as favourable to the absorption of fluid from the cranio-vertebral cavity—that is to say, the cerebral venous tension should be maintained equal to, or above, that of the cerebro-spinal fluid, and the arterial pressure should also be kept as near normal as possible. For this reason, in addition to those previously given, I think it wise to draw off more fluid than is injected and to give the solution in small bulk so that the tendency for absorption to take place is diminished.

These views receive support from the fact that, as Dr. Hill states, when saline coloured with methylene blue is injected it can be found in the stomach and bladder in from 10 to 20 minutes; this, in fact, is the exact time at which symptoms of poisoning assert themselves under spinal anæsthesia. In my second series of 100 cases, therefore, I have made an effort to control and localise the effects of the injection by employing a fluid the diffusibility of which is low and the specific gravity of which can be increased to the required amount vithout altering the depression of its freezing point. Now Tuffier's believes that the toxicity of cocaine and its derivatives depends on their relative diffusibility in cerebro-spinal fluid and that the clinical phenomena described indicate a slight toxic action on the nuclei of the

⁸ Wiener Klinische Therapeutische Wochenschrift, 1905, vol. xii., p. 373.

bulb. I think this direct action of the drug employed may be the explanation in a small percentage of cases and may possibly account for the various ocular paralysis reported from time to time. Tuffier states that stovaine does not diffuse since it is precipitated in the "exceedingly alkaline cerebro-spinal fluid." Now cerebro-spinal fluid is usually neutral, at least it was proved so when I had it tested fresh, but on standing it becomes alkaline owing probably to the oxidation of the urea. That a change does occur on mixing the two fluids is certain, but the action of the stovaine is not thereby impeded, as I have proved by injecting myself with stovaine which had been standing with cerebro-spinal fluid. There is also no proof that stovaine does not diffuse in cerebro-spinal fluid; indeed, there is evidence to the contrary, for Tuffier himself states that in using a 12 per cent. solution in two cases he produced symptoms which he attributes to diffusion, and rightly so. The diminished toxicity of stovaine is due, no doubt, to the fact that it is very slowly diffusible, and this property is accelerated by administering it with diffusible fluids and retarded in the presence of indiffusible fluids. I have acted on these views in my second series of 100 cases, and the results, I think, amply justify the views expressed.

Stovaine has been preferred as the anæsthetic agent for the reasons already mentioned, while, in order to facilitate localisation by gravity, an indiffusible vehicle had to be found with which stovaine is miscible. Dextrin was chosen as the most suitable substance, for it is readily soluble in water, can be employed in any strength, and is innocuous to the tissues. The specific gravity of such a fluid can be raised or lowered at will without affecting the diffusibility of the solution. Normal saline is also used in strength isotonic with cerebro-spinal fluid, for it has been shown that though the diffusibility of dextrin-stovaine solution is above that of cerebro-spinal fluid when estimated in relation to water, yet when introduced into cerebro-spinal fluid changes take place which make its diffusibility considerably less than laboratory experiment indicates. The diffusibility of the stovaine is further delayed by the dextrin solution, which is viscid enough to prevent the former mixing to any great extent with cerebro-spinal fluid.

If Table II. be referred to it will be seen that 14 cases were anæsthetised with the stovaine-glucose solution for comparative purposes, and that the remainder of the children were injected with dextrin-stovaine solutions in eight different proportions. The results are tabulated so that comparison is easy, but some explanation of the figures is necessary as the most striking results are there very imperfectly represented.

TABLE III .- Composition of Fluids Employed.

-	De	ktrin.	Sto	vaine.	Saline or water to 100.	Adrenalin 1 in 1000.		
	6.5 p	er cent.	2.5 p	er cent.	Saline.			
1	3.5	••	2.5	**	,,			
la	4	,,	2.5	••	,,			
1b	4	,,	2.5	••	Water.			
В	4	••	5	**	Saline.			
$\mathbf{B1}$	3	**	5	**	,,			
B 2	2.5	,,	5	,,	,,			
D	4	"	4	**	,,	Adrenalin borate 0:00		
	1		ĺ			per cent.		

Nature of Operations Performed.

Abdominal, variou Appendicitis							•••	•••	4 5	cases
Appendicectomy	and	i e	xcis	ion	of	M	leck			••
diverticulum Combined inguin	o-pe	rine	al (excis	sion	of		tis,	1	**
vas, and vesicle		•••		•••		•••			1	,,
Cholecystostomy	•••	•••	•••	•••		•••	•••		1	**
Cystoscopy	•••						•••	•••	3	••
General peritonitis	s (pr	ieun	1000	ccai,	•••	•••	•••	•••	1	••
Inguinal hernia ar Inguinal hernia ar	101 H	yana	cere				•••	• • •	28	••
Inguinal hernia (s	rii ii tran	anto	tod	itea i	usti	5	•••	•••	3	**
Intussusception		B. C. I	a ea,	,	•••	•••	•••	•••	7	**
Intestinal obstruct	tion	(acu	te)	•••	•••	•••	•••	•••	ĭ	**
Spina bitida									î	,,
Spina bitida Miscellaneous					•••				2	''

Amputation	n of th	ich								2.	cases
Ankle (exci				•••	•••	•••	•••	•••	•••	ĩ.	
						• • •	•••	•••		÷	••
Arthrecton					Kne	œ	•••	• • •	•••	઼	••
Excision of			•••		•••		•••	• • •	•••	1	••
Arthrodesis	s of kne	е			•••					'1	••
Lorenz's op	eration	on	hip							.2	,,
Fractured i	emur (plati	ng)							4	,,
Fractured 1	ibia (p	latin	g)	•••						1	
Osteomyeli	tis (acu	ite)	•••	•••			•••			2	,,
Osteotomie	s `			•••						$\frac{\bar{2}}{1}$	••
Plexiform :	neuron	a (re	ino	val)						1	••
Pneumococ						pel	vic a	absco	255	1	••
Sequestroto	mv					٠				3	**
Talipes										4	••
Tendons (o)	peration	ns or	1)		•••					4 5	••
Miscellane	us		,	•••						9	,,
										42	**
Failures								•••	•••	2	**
T. WILLIAM											

It will be seen that there were two failures to produce anæsthesia; one of these children had spinal caries and only the perineum and sphincters were affected. Therefore there was one failure due to technique.

General anasthesia was employed in nine cases, and this is no discredit to a method which was on trial and the behaviour of which was unknown. In five of these cases (laparotomies) the anæsthesia was complete and perfect, but did not last long enough because the bulk of fluid administered was not sufficiently large. In three of these five cases only a whiff of chloroform was administered for the final suture. In adults this would have been unnecessary, but in children operation under spinal anæsthesia is impossible unless there is a complete flaccid paralysis, for they resent the presence of any of the sensations; that is to say, either analgesia or diminished painful sensation alone is insufficient in the great majority of cases. Two of the remaining cases (herniæ) required general anæsthesia, since the effect of the stovaine passed off too early. In one further laparotomy spinal anæsthesia was administered up to the umbilicus, and general anæsthesia was only resorted to when further work was found to be necessary in the upper abdomen. In only one instance was general anæsthesia necessary for operation owing to presence of deep (bony) sensation, and in this case the technique was probably at fault. It is clear, therefore, that in seven of the nine cases the short duration of the anæsthesia entailed the use of chloroform or ether, while in two cases only was this demanded by an imperfect result.

In this connexion three important facts are evident:—
1. That for abdominal work the bulk of the fluid given must be increased above that necessary for the lower limbs, if the duration of the anæsthesia is to be sufficient. 2. The greater the proportion of dextrin present in the solution, the shorter will be the period of anæsthesia. This fact is well illustrated in Table II., column 5. 3. In many of the cases in this series a high puncture (between the first and second lumbar spines) was practised, and the amount of fluid injected was small; the result was a uniformly short anæsthesia. A longer effect is obtained with a lower puncture and the injection of a large bulk of the solution.

In columns 6 and 7 of Table II. are further recorded the longest and shortest times: the discrepancy appears greater at first sight than is really the case. The majority of instances of short anæsthesia were in abdominal work at a time when the factors influencing the duration of anæsthesis were not sufficiently recognised. A perfectly satisfactory result in this direction has only been achieved quite recently in my third series of 100 cases now nearing completion.

The second section of Table II. indicates the relation of dose to the duration of anæsthesia. A glance at the figures shows clearly that, speaking generally, the larger the dose the longer the duration. Fluid B (Table II.) does not bear out this statement, owing in all probability to the small number of cases. Fluid B2 appears contradictory because in the 43 minutes group of cases there were three laparotomies in which high puncture and small bulk of fluid was the practice adopted. There was only one such case in the 54 minutes group. The factors influencing the duration of the paralysis have, I think, been sufficiently investigated to permit the assumption of definite rules in accordance with the foregoing statements.

The third section of Table II. deals with complications and sequelæ attendant upon the employment of spinal ancesthesia and shows striking results consequent on the injection of fluids of diminished diffusibility. These results

have been, in fact, infinitely better than the figures indicate and some amplification of the recorded facts is therefore The first three columns of this section deal with vomiting and retching during and after operation. It will be seen that nine cases vomited during the operation. Two of these vomits (Fluid Λ) were in the same child and occurred almost immediately after puncture, so that neither of them should be included in a comparison with the first series of cases, since on neither occasion was it the precursor of toxemia, which the table shows to have been completely absent. With Fluid B two vomits are recorded, of which one should be eliminated, since it occurred after the first injection of stovaine which failed to reach the subarachnoid space, produced no paralysis, and was therefore probably absorbed into the blood-stream with increased rapidity. No vomiting resulted from the second injection, which gave a satisfactory anæsthesia. This phenomenon has been noticed on several Spinal anæsthesia should again be exonerated occasions. from causing the vomiting in one case with the use of Fluid B1. This child was nearly moribund from intestinal obstruction due to abdominal tuberculosis. The first injection failed to reach the subarachnoid space, with the usual result that vomiting ensued. The child received two more injections for an operation which lasted one and a half hours, but no further vomiting resulted and her condition did not deteriorate at all. Two of the vomits further occurred with stovaine-glucose solution. It is fair to say, therefore, that with dextrin-stovaine solution three cases vomited during operation, as against 21 cases in the first series. Still more striking is the result when it is borne in mind that the vomits in the second series were very small. Usually there was one vomit producing one or two drachms of fluid which, as often as not, represented some brandy or milk administered on the table, and was in no way comparable with the copious or repeated vomiting in the first series.

Retching during the operation is seen to have become more frequent as the stovaine in the fluid used was increased and the quantity of dextrin diminished. This factor, however, is not alone concerned in the causation of this symptom. No doubt the retching is in part attributable to the increased diffusibility of the solution as the dextrin is diminished, but evidence has since been forthcoming that even when this factor is eliminated the symptom may be present and in no way connected with signs of toxemia.
This retching nearly always amounted to one or two spasms rarely lasting more than from 10 to 15 seconds, and occurred for the main part with a high anæsthesia. The explanation is, I think, that upon the sudden paralysis of the lower intercostal muscles there follows a compensatory over-action of the diaphragm which presses on the stomach and for the moment causes retching; this symptom almost immediately passes off as the body becomes accustomed to breathing almost entirely diaphragmatic. I have further noticed that under high anæsthesia the stomach is nearly always somewhat distended; and, if this is the case, there would be an additional reason for the patient resenting in this way any sudden over-action of the diaphragm. If these views are correct, occasional retching is an event which will always have to be reckoned with in high spinal anæsthesia.

A diminished amplitude of respiration consequent on a high paralysis must necessarily cause a slight change of colour; this I have called in Table II. "respiratory pallor." In these cases the lips retain their good colour, the eyes do not become sunken, nor is there any sweating, all features so prominent in toxic cases. Another factor in the production of "respiratory pallor" is the loss of heat from the paralysed area, which is often cold to the touch when the unaffected area is quite warm; between these two there is usually a sharp line of demarcation. This slight loss of colour occurred nearly always with high anæsthesia and was often so slight as to be noticeable only to one watching for the change, while the colour was always rapidly restored on disturbing the child in any way and causing it to take a deep inspiration, for it will be remembered that many of the children sleep during their operation.

Quite a different and unmistakeable feature is the livid pallor due to stovaine poisoning such as was recorded in the first series and which did not yield to the same measures. Of these there were no examples with dextrin-stovaine solution and one where adrenalin was employed. The columns showing vomiting after operation and headache are instructive, for if a study be made of these sequelæ (which

on every occasion were very slight) it will be evident again that dextrin delays absorption to a considerable extent; thus when symptoms are not present during operation the stovaine is absorbed so gradually that its effect is not manifest in the system until the same night or the following day. In support of this view is the notable feature that children usually have a temperature of 100° to 103° F. after a spinal injection of dextrin-stovaine solution (on one or two occasions the temperature reached 104°), while in the first series when the disturbance on the operating table was very much greater, there were very rarely any after-effects, and it was unusual for the temperature to rise above 100°, if as high. The temperature invariably fell to its usual level in about 24 hours.

Finally, Table II. shows that Fluid A, containing the highest proportion of dextrin, proved to be the most satisfactory from the point of view of the prevention of toxemia but least satisfactory as regards the duration of the anæsthesia.

Efforts to keep the high proportion of dextrin in the solution and at the same time to prolong the anæsthesia have only recently proved completely satisfactory, as I hope to show in the publication of my third series of 100 cases.

Advantages of the solution.—1. Diminution of the amount and rate of absorption of stovaine into the blood-stream with the attendant symptoms of poisoning.

2. Accurate localisation.—A perfect control over the distribution of the paralysis by the aid of gravity is possible. The higher the proportion of dextrin in the fluid the more definite is the line of demarcation between the paralysed and unaffected areas. This line corresponds to a definite segment of the cord. If the paralysis be limited to the tenth dorsal segment the lower half of the abdomen can be seen to be completely paralysed and "blown out" during any expiratory effort, while the upper halves of the recti abdominis are rigid and contracted.

By using a small bulk of fluid and making a high puncture I have succeeded in producing a perfectly operable anæsthesia of the abdomen while movements of the feet and legs were still under voluntary control. These phenomena have been demonstrated on more than one occasion, though such a performance, while demonstrating clearly the value of gravity as a localising agent, is of no value in operative surgery.

3. The paralysis is absolute. There is no question that only analgesia is produced or indeed that any of the sensations are preserved. I am greatly indebed to Dr. F. E. Batten for so kindly testing the nervous phenomena for me in these cases. Dr. Batten's results clearly prove that all nervous communications between the paralysed and healthy parts of the body are cut off, and I will briefly give an account of two cases in this series.

CASE 1. Right inguinal hernia.—2.15 p.m. First injection; incomplete. 2.45 p.m., second injection. 3 p.m., complete ansesthesia to second dorsal segment. 3.30 p.m., no return of sensation. 3.45 p.m., some return of painful sensation to middle of thigh. 3.55 p.m., movements of legs began to return; no sense of position; knee-jerks still absent. 4 p.m., knee-jerks returned; sense of position in big toe; painful sensation still absent below knees; muscular power fairly good. 5 p.m., complete return.

aation still absent below knees; muscular power fairly good. 5 P.M., complete return.

CASE 2. Tendon lengthening.—3.30 P.M., puncture. 3.40 P.M., anæsthesia over legs; still feels heat and cold; sense of position still preserved in big toe. 3.45 P.M., operation; complete anæsthesia to seventh dorsal segment; knee-jerks absent; complete motor paralysis.

4.7 P.M., still complete anæsthesia. 4.15 P.M., no change. 4.20 P.M., some return of heat; cold and painful sensations over abdomen. 4.30 P.M., movements returning in legs (proximal slightly before distal); no return of sensation in legs; no sense of position; knee- and anklejerks still absent. 4.45 P.M., still anæsthetic below knee; no sense of position. 4.50 P.M., return of sense of position in knees. 5.0 P.M., return of sense of position in knees.

These results are interesting, particularly as, from the practical point of view, they illustrate the following remarks: (a) the anæsthesia by being absolute practically eliminates surgical shock; and (b) the return of motor power before sensation gives sufficient warning that the anæsthesia is passing off to enable preparations to be made for a second injection to be given if necessary.

4. A further testimony in favour of using this solution is found in the following patient anesthetised with A solution. A girl, aged seven years and two months, had been operated on under spinal anæsthesia with stovaine-glucose solution on two previous occasions, and with each injection showed symptoms of stovaine poisoning—namely, vomiting, retching, pallor, and sweating. The doses used were 2.5 and 3.0

centigrammes of stovaine. On the third occasion 2 cubic centimetres of A fluid (or 5 centigrammes of stovaine) were injected and a perfect paralysis, the level of which was limited sharply to the costal margin, was obtained. The child was perfectly comfortable and did not change colour at all, while there was no vomiting, retching, or sweating. I only mention this case, though there are other striking examples of the improvement obtained in the second series.

In conclusion, a word must be said regarding the advantages

of spinal anæsthesia in the surgery of children.

1. Advantages to the patient. - When the anæsthesia is absolute, and this is essential in operating on children, surgical shock is abolished, for there is no transmission of impulses from the lower to the upper neurons, since these impulses are cut off at the posterior roots in each segment up to the limit of the paralysis. Further, the return of function in the paralysed parts is so gradual (vide supra) that delayed shock has rarely been encountered. For these reasons surgical measures in children assume a far wider scope, and there is no necessity for hurrying over operations on the abdomen, bones, and the larger joints. The two lists of operations reported embrace such a variety of cases that there has been ample opportunity of judging the relative merits of general and spinal anæsthesia. further consideration is that the anæsthesia is (or can be) strictly local and almost limited to the part to be operated on, so that the higher centres, lungs, &c., escape any interference, and such sequelæ as pneumonia, acute bronchitis, acute and delayed chloroform poisoning, and perhaps, also, the onset of acute pulmonary tuberculosis need not cause the surgeon any apprehension. Also the risk of sudden deaths from "status lymphaticus," which always come as

such an unexpected blow to a surgeon, is abolished.

2. Advantages to the surgeon.—These are particularly the ease and comfort with which grave operations can be performed without the distraction of considering the depth of the anæsthesia or the personal equation of the anæsthetist, for the anæsthesia is reduced to an almost mechanical certainty and the number of ordinary assistants is reduced. The absolute muscular relaxation obtainable without endangering the higher centres makes manipulations infinitely easier. For instance, it is only necessary to operate on an intussusception under general and then under spinal anæsthesia to appreciate the advantages of the latter in acute abdominal work. Thus a smaller incision permits of equal access to different parts of the abdomen, since the muscular relaxation permits the opening to be pulled over to almost any position, and for the same reason there is nothing approaching the same tendency for distended intestines to protrude from the wound. Operative technique is thereby much simplified and the gain in time is very striking. In operations on fractures, also, the difference in the ease with which reduction and accurate apposition can be effected saves a great deal of the time and violence necessary under general anæsthesia. 10

With the exception of one case of resection and anastomosis (and this child, aged eight months, died four hours after operation) no case of intussusception has been lost under spinal anæsthesia, one case of appendicitis with practically general peritonitis has died on the eighth day, and only one case of general pneumococcal peritonitis (other than pyæmic) has been lost up to the time of writing. The results of former years compare very unfavourably with

Advantages subsequent to operation.—Vomiting in acute abdominal disease, after relief by operation under spinal anæsthesia, is practically unknown, and this symptom is, in my experience, one of the most important factors in producing an unfavourable result.

Pain, even after the most severe operations, is so slight that it is very rarely necessary to give any hypnotics at all, and if these are required a minimal dose always suffices. As an instance of this let me quote the case of a girl, aged six years, whose leg was amputated through the thigh. She was given no drugs after the operation, and it was only after two days that she discovered the loss of her leg.

Children are given food, except where contra-indicated, immediately on their return to the ward if they want it, and the constant attention of special nurses is not required during the recovery from rachi-stovainisation. No death in this series has resulted from spinal anæsthesia, and as regards

sequelæ there have been none; therefore, seeing that the children operated on are, for the most part, frequently under observation afterwards, this fact speaks well for the method. Much improvement has been made and some interesting results have been obtained during the performance of my third series of cases, the details of which, however, must be postponed until a future occasion.

Since writing up my cases I have seen an article written by McGavin and Williams ¹¹ from the Seamen's Hospital, Greenwich. Their results correspond very nearly with those in my first series, anæsthetised with the same solution, with the exception perhaps of a larger percentage of cases in their series in which some pain was felt during operation. This pain would have necessitated the use of chloroform in a much larger number of cases had the subjects been children. For details I would refer the reader to their valuable record.

I wish in addition to thank the members of the surgical staff at Great Ormond-street for the numerous opportunities they have so kindly afforded me, and especially Dr. F. E. Batten, Mr. G. E. Waugh, and Dr. H. Thursfield, for their advice and assistance.

Great Ormond-street, W.C.

Clinical Rotes:

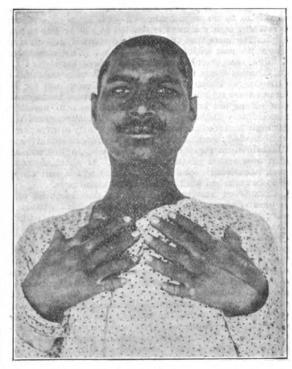
MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF MEDIAN HARE-LIP ASSOCIATED WITH OTHER MALFORMATIONS.

BY E. OWEN THURSTON, M.B., B.S. LOND., F.R.C.S. ENG., CAPTAIN, INDIAN MEDICAL SERVICE.

THE acknowledged rarity of median hare-lip is my reason for publishing this case.

The patient, a Hindu, aged 20 years, a recruit for the Bengal police, was brought for medical examination. Besides the hare-lip it was also noticed that he had six fingers on



Median hare-lip in a subject with six fingers and six toes on

each hand and six toes on each foot. The hare-lip, as will be seen from the illustration, is exactly median and extended to just beyond the red border. The palate was normal.

The supernumerary digits were symmetrically placed on the ulnar borders of the hands; each possessed a metacarpal bone but only two phalanges. The extra toes were also symmetrically placed on the outer borders of the feet and possessed a metatarsal with two phalanges each.

No history could be elicited of any malformation in the parents or elder relatives of the patient, but a younger brother, aged five years, possesses seven fingers on each hand, six left toes, and the normal number on the right foot. This brother had also a median hare-lip exactly similar to the one now described.

Gaya, Bengal.

CARCINOMATOUS GROWTH OF CÆCUM CAUSING INTUSSUSCEPTION AND INTESTINAL OBSTRUCTION; REMOVAL THROUGH TRANSVERSE COLON; RECOVERY.

BY HAROLD STIFF, M.B., B.C. CANTAB., M.R.C.S. ENG., L.R.C.P. LOND.,

SURGEON TO THE WEST SUFFOLK GENERAL HOSPITAL, BURY ST. EDMUNDS.

A WOMAN, aged 53 years, was admitted to the West Suffolk General Hospital under my care on July 15th for intermittent attacks of abdominal pain of a colicky nature, sometimes accompanied by vomiting and distension, with gradually increasing constipation and emaciation. A large, firm, painful, moveable mass could be felt in the right hypochondrium. The tongue was coated, the breath was foul, the temperature was 97° F., and the pulse registered 106. The patient was placed upon fluid diet and was given castor oil and saline aperients by the mouth and large rectal injections twice daily. Under this treatment the bowels were unloaded, the attacks of pain became less frequent, and the mass became smaller and softer and moved downwards towards the right iliac region. The tongue cleaned and became moister, and the patient was more comfortable. After a few days, however, symptoms of subacute intestinal obstruction recurred, the mass became larger and firmer, and moved upwards and towards the middle line. The attacks of pain became more frequent and severe, and the patient was unable to retain even liquid nourishment.

Operation.—The patient was anæsthetised by a mixture of chloroform two parts and ether three parts, and the abdomen was opened by a median incision extending from two inches below the ensiform cartilage to the umbilicus. The peritoneum was incised and the transverse colon, greatly distended, was found immediately beneath. This was lifted out of the wound and a large, solid, lobulated mass was felt inside of it. A longitudinal incision six inches in length was now made in the transverse colon and the mass was explored. It was found to be a carcinomatous infiltration of the cæcum, of the size of an orange, which had caused a progressive obstruction of the lumen of the bowel. The latter for the space of an inch or more from the ileo-cæcal valve barely admitted the passage of a person's little finger. The execum, carrying with it a portion of the ileum, had become invaginated into the ascending colon, forming an intussusception with its apex at the ileo-execal valve, the appendix lying between the entering and returning layers. The growth was gently drawn out through the incision in the transverse colon and was resected. The ileum was divided at the ileo-excal valve and the excum just above the orifice of the appendix. The cut ends of the ileum and the invaginated cæcum were next united by end to end anasto-mosis with a continuous Lembert's suture of fine catgut, the appendix was amputated, and the anastomosis was gently returned to the interior of the ascending colon, thus reducing the invagination. This was a matter of some difficulty on account of the cedematous state of the bowel. The longitudinal incision in the transverse colon was now closed with Lembert's sutures of fine catgut, the mesentery was drawn well over it, and the abdominal wound was sutured with silkworm gut, completing an operation which occupied one hour and 25 minutes. The preliminary treatment had completely emptied the bowel, and fæcal matter was never encountered. The patient left the table with a pulse of 130 and, though collapsed, rallied with the aid of saline rectal injections within 24 hours.

The after-history of the case was uneventful. The bowels acted in response to a turpentine enema, given to relieve flatulence, on the second day after the operation. On the seventh day solid food was allowed, and the patient left her

bed on the seventeenth day and the hospital at the end of four weeks.

My thanks are due to my colleagues, Dr. C. S. Kilner and Dr. J. S. Hinnell, at the West Suffolk Hospital, for their kind and skilful assistance during the performance of the operation, and to the house surgeon, Mr. A. D. Rope, for his excellent administration of the ansesthetic.

Bury St. Hdmunds.

A CASE OF HYSTERICAL DEAFNESS TREATED BY SUGGESTION.

BY P. MACLEOD YEARSLEY, F.R.C.S. ENG., SENIOR SURGRON TO THE ROYAL EAR HOSPITAL, SOHO; MEDICAL INSPECTOR OF DEAF SCHOOLS, LONDON COUNTY COUNCIL, ETC.

AND

H. E. WINGFIELD, M.D., B.O. CANTAB.

THE occurrence of true hysterical deafness is not common, and in the following case, although the treatment ultimately failed, the partial success which resulted from hypnotic suggestion makes it worthy of publication.

The patient, a woman, aged 37 years, was first seen at the Royal Ear Hospital, Soho, on May 7th, 1908. She had just returned from India, where she had been for 30 years, and stated that she had been deaf two years, the deafness coming on suddenly after the birth of her seventh child. Before this time she was subject to severe hysterical fits, lasting over an hour; during which she shrieked and kicked and became semi-maniacal. These fits recurred about every six weeks.

On examination both tympanic membranes were normal, the Eustachian tubes were free, and there was nothing noteworthy to be seen in the nose or throat. Functional tests gave the following results: The accoumeter was only heard when in contact with the mastoids. Rinné's reaction was negative on both sides. Bone conduction to C (128), — 15 seconds both. Galton's whistle, both sides nil. By air she appeared to hear from 3 C 16 to C¹ on both sides, C² and C³ were doubtful, C⁴ both nil. Placed on increasing doses of strychnine, she was again tested on July 3rd, and so unreliable were her reactions that it was probable that the results obtained on May 7th were quite erroneous. She said she could hear forks which were not vibrating, and vice versa. Valerian was prescribed, and on Sept. 3rd it was noted that she was beginning to lip-read unconsciously. On Sept. 24th when he stood behind her she held up her hand whenever he spoke.

The patient was finally placed under the care of Dr. Wingfield (after consultation with Dr. J. Milne Bramwell), who reports as follows: - "I first saw -– on Nov. 6th. 1908, and altogether saw her on nine different occasions, the last being on Dec. 30th. Though she was apparently quite deaf when I first saw her, her hearing returned for about two hours soon after she left my house, but her deafness then returned. On the third occasion she told me that she could hear me quite well, but that the moment she heard she forgot what I said. The result of the treatment was that she could hear fairly well when she left me on Dec. 30th. Since then I have heard from her husband, with whom she is now in India, saying, 'The improvement she made while under your treatment has gradually disappeared, and she is now in the same state she was in when you first saw her.' It was unfortunate that treatment had to be so very much curtailed owing to her having to go to India. While it is impossible to say that she would have been permanently cured, there can, I think, be no doubt that the relapse might have been considerably delayed.

The case well illustrates the absence of any signs of aural disease and the unreliability of functional tests in these conditions. A certain number of cases of true hysterical deafness are on record, but very few appear to have been submitted to careful and systematic testing. Suggestion has been known to be successful in some cases, and that under consideration certainly appears to have been one in which hypnotic treatment would have succeeded had not circumstances unfortunately prevented longer trial. An interesting phenomenon in the case was the patient's statement that "the moment she heard she forgot" what was said. It would appear as if there was some fault in the connexions of the auditory centre, possibly similar to that in the rare cases of "word-deafness" met with in children

Reviews and Notices of Books.

The Oxford Medical Publications: The Principles of Pathology.

By J. George Adami, M.A., M.D. Cantab., LL.D., F.R.S.,
Professor of Pathology in McGill University, and Pathologist to the Royal Victoria Hospital, Montreal; late
Fellow of Jesus College, Cambridge. Vol. I., General
Pathology, with 322 engravings and 16 plates. London:
Henry Frowde and Hodder and Stoughton. 1909. Pp.
948. Price 30s. net.

Or all the sciences ancillary to medicine there is none more interesting and more important than pathology, which is, indeed, the basis of rational medicine. A scientific and thoughtful treatise on this subject is therefore of the greatest value, and is an almost essential companion for the practitioner who desires to have a reason for the measures he adopts in treatment. It is a matter of some interest that the study of pathology, which was a potent factor in the genesis of the therapeutic nibilism so widely current in some schools of medicine during the latter part of the nineteenth century, should eventually have been the means of enriching us with methods of treatment which, though yet in their infancy, promise to be of far wider effect and greater value than drug treatment. This fact affords the best evidence that pathology has advanced beyond the study of morbid anatomy, and indeed beyond the study of the morbid changes in the cell histology so ably pioneered by Virchow. It has extended to the study of cellular function in disease and its disturbances. Professor Adami has special qualifications for writing an advanced treatise on pathology, since his experience is wide, his training has been catholic (he refers in his preface to his intimate association as a student with Milnes Marshall and Francis Maitland Balfour, Michael Foster and Rudolf Heidenhain, Julius Dreschfeld and Charles Smart Roy, Emile Roux and Elie Metchnikoff); moreover, he writes well, and though at times his subject matter is abstruse, he writes clearly and intelligibly, expressing his own opinions forcibly while giving due weight to the work of others, even when criticising them. We are not surprised from the magnitude of the work to learn that this book has been nearly 12 years in preparation, for there is nothing hasty or ill-considered about it.

Professor Adami begins his book by a general review of cellular physiology, considered from the standpoint of structure in relation to function, development, variation, and heredity, all being included under the general heading of prolegomena. It is this section which imparts a somewhat individual and original character to the book, and it is one which we may single out for special praise. We have read it with interest, and though Professor Adami's views on cellular functions are sometimes at variance with those of other authorities he is careful to indicate their tentative character. Having given a general résumé of cellular structure and function and of the chemistry of the cell he develops the conception of the biophore or ultimate molecule of living matter into a theory—the "biophoric theory"-which is applied to the explanation of growth and even to the complex processes of variation, adaptation, and evolution. The biophore is conceived as a ring of radicles, each having free affinities, which can be satisfied by taking up free ions from the surrounding medium, resulting in the formation of side chains. In the process of growth these side chains become built up into fresh rings to form new biophores. In this connexion the importance of enzyme action is discussed in some detail and the peculiar phenomenon of reversibility is described. Reversible enzyme action being regarded as a primordial function of living of Ehrlich's side-chain theory.

matter, the startling suggestion is offered that the free enzyme is the simplest manifestation of life. The ingenious applications of the biophore theory serve to bring out clearly the nature of some of the complex problems of biology and to give point to the vexed question of epigenesis and preformation and to that of the transmission of acquired characteristics. In this section Professor Adami also gives a clear account of the Mendelian theory of heredity and of the various forms of inheritance.

The second section is devoted to a critical and detailed examination of the causes of disease. After a general consideration of the inheritance of morbid and abnormal conditions, the causation of such as are of intra-uterine and parturient acquirement is discussed, followed by an interesting and exhaustive study of monstrosities and abnormalities. The theories offered to account for the occurrence of the various forms of monsters and teratomas are clearly described and a very good classification is given. The factors leading to the post-natal acquirement of disease are then examined, classified, and separately considered, separate chapters being devoted to non-parasitic and parasitic exogenous intoxications, protozoan and metazoan parasites, and the endogenous intoxications. The description of bacterial agencies as causes of disease, with the discussion of infection and of the normal defences of the organism, is admirably clear, and though concise, presents in a suggestive manner the general principles of infection, while indicating where our knowledge is as yet incomplete. general heading of endogenous intoxications the morbid conditions induced by disturbances in the internal secretions are described, and the importance of the hormones is indicated. The pathology of gout, diabetes, obesity, eclampsia, and acidosis are all considered, and the gastro-intestinal intoxications are separately described, since Professor Adami rightly maintains that these are, strictly speaking, exogenous, and should therefore not be included among the auto-An interesting discussion on overstrain and intoxications. disuse as predisposing factors in causing disease and of predisposition and susceptibility concludes this section, which we can thoroughly commend as a thoughtful and suggestive presentation of the etiology of disease.

The third section deals with the morbid and reactive processes, and is divided into two parts. The first treats of the morbid and reactive processes proper-i.e., inflammation or the local reaction to injury, the processes of infection or the systemic reaction to microbic injury, and the processes of immunity. The second part deals with the tissue and cellular changes. Professor Adami long ago established a reputation as an authority on inflammation, and the account he gives of this process is a model of lucid description and analysis. He traces the reaction to injury from the simplest cases in the protozoa to its most complex form in the mammal, and indicates clearly the special features characterising the process in the different varieties of acute inflammatory manifestations. In like manner the varieties of chronic inflammation are differentiated and their special features described. In an interesting résumé the main date regarding inflammation are summarised in clear and critical fashion. In connexion with the systemic reaction to microbic injury or infection, the characters of the febrile state are analysed, and its adaptive nature in regard to the development of antibodies is suggested. The difficult subject of immunity is dealt with in a series of chapters extending to 78 pages, and within this compass a wholly admirable account is given. The various forms of antibodies are separately considered, and the most important theories are discussed. Professor Adami regards all of these substances as enzymes, and on this basis suggests a slight modification

The second part of the third section deals with the tissue changes, and includes a comprehensive consideration of hypertrophy, regeneration, grafting, and metaplasia. The neoplasms are then studied at considerable length. Professor Adami gives a classification, which he has previously published elsewhere, of the ordinary tumours as distinguished from teratomata and terato-blastomata into "hylic," or pulp tumours, and "lepidic," or those derived from primitive lining membranes, these main classes being further subdivided. This classification, though scientific, appears to us to be cumbrous and not altogether convenient. The theories of neoplasia and of malignancy are briefly outlined and discussed. The forms of different cysts are described, and then accounts are given of the various regressive changes, including the degenerations. Chapters are devoted to a consideration of calculi, pigmentary changes, necrosis, and death. Appendices are given dealing with protein nomenclature and with recent work on intercellular substance, nucleolar matter, and the accessory chromosome.

We have read this volume with great interest, for it is catholic in its range and critical in its presentation of the many vexed problems in pathology. It is the most considerable work on general pathology which has appeared in English within recent years.

Lectures on Hysteria and Allied Vaso-motor Conditions. By THOMAS DIXON SAVILL, M.D. Lond., Physician to the West-End Hospital for Diseases of the Nervous System, &c. London: Henry J. Glaisher. 1909. Pp. 262. Price 7s. 6d. net.

The appearance of a volume on hysteria by an English author is very welcome. Especially is this the case when the volume under consideration contains no mere restatement of the views of foreign neuro logists, but is in itself a definite contribution to the study of la grande névrose. For some reason it is more in the realm of organic than of functional nervous disease that the enduring work of English medicine is to be found, and Dr. Savill is therefore to be congratulated on having produced so original a book on a subject to which an immense amount of attention has recently been directed, and which can boast of an ever-increasing literature.

In this volume are collected a series of lectures, most of which have already seen the light in THE LANCET and elsewhere, and the author craves the indulgent criticism of his medical confreres for the redundancies incidental to the clinical form of lecture; these are more than compensated for by the case in reading and realistic presentation of cases which the lecture method affords. A comprehensive survey is made of the common hysterical disorders of the motor, sensory, and vasomotor systems; hysterical mental conditions are reviewed; the psychology and psychogenesis of hysteria are discussed; the etiology, pathology, and treatment of the disease are examined in some detail; and a couple of lectures are devoted to the consideration of certain admittedly vasomotor disorders which, in the author's opinion, have an important bearing on the problem of hysteria. The reader soon learns that Dr. Savill has a thesis to maintain and elaborate, and it is handled with a wealth of clinical illustration. Briefly, it may be put as follows: the majority of hysterical phenomena (it is worth noting that the author does not say all) are dependent on a vascular, and therefore nutritional, change in the part concerned, and it is through the sympathetic system that this change is effected. If we take a typical instance of a hysterical fit we figure to ourselves some young woman who, under the strain of an emotional disturbance, suddenly becomes pale, faint, confused, sinks into a semi-conscious state, exhibits various motor phenomena, and gradually or quickly resumes her normal condition.

That some, if not all, of these symptoms are also common to disorders universally recognised as vaso-motor in origin is in the author's view of primary importance, and his inference is that the essential cause of a hysterical "faint" is instability of the reflex vaso-motor centres in the sympathetic plexuses of the abdomen. A sudden emotion produces a rapid dilatation of the splanchnic arteries, a rush of blood to the interior of the abdomen, and consequent cerebral anemia and pallor of the skin. Hence the "attack" or "fit." If we take more elaborate hysterical cerebral attacks, according to the author the same essential features can be detected, and therefore, however complex they may be, the mechanism of their production is the same. The sudden splanchnic dilatation causes "a vascular change in the brain, of sudden onset and transient duration not an embolism or hæmorrhage but an ischæmia or a congestion, attended perhaps by slight serous exudation, which passes off and usually leaves no trace behind it.' The difficulties in the way of acceptance of this theory are patent. It is altogether too diagrammatic for the multifarious phenomena of hysteria. It is at best based on an assumption for which no support worth consideration is forthcoming.

We need not follow the author through the whole gamut of hysterical symptoms in his endeavour to apply this theory of their genesis, but we may glance at a case of hysterical monoplegia of the left arm in a fireman who fell on his left shoulder and three weeks later had a hysterical seizure followed by complete flaccid paralysis and loss of sensation in the limb. A "splanchnic storm," occasioning a serious vascular disturbance of the brain, and leaving behind it damage to the cortical areas corresponding with the injured limb, is the explanation given by Dr. Savill, but he does not hesitate to remark the difficulty in understanding why the vascular storm should damage one spot in preference to another. Among some six "localising factors" that he specifies are the reflected effects on the brain of a severe injury to the shoulder-joint and the impairment of the nutrition of the "ideo-muscular centres" of the limb as a result of its rest in a sling for three weeks before the hysterical seizure. But it may be remarked that the other factors that are mentioned are scarcely applicable in the present instance, and the above are obviously inadequate. Further, that a single "vascular cortical lesion" should produce the combination of complete motor palsy with complete insensibility to all forms of stimuli over an area embracing the limb and sharply limited by a line encircling its root is more than questionable. Even were the lesion of such a description we have no reason to suppose it would be of necessity situated in the "cortical ideo-muscular centre" for the limb, whatever that mean and wherever it be.

Dr. Savill frankly admits the possibility of other explanations, and while he criticises adversely the view that transfers the seat of the disease to a higher level he makes the not altogether unexpected statement, in italies too (p. 185), that "no single lesion or hypothesis in my judgment is capable of explaining all the various symptoms of this protean and strange disorder." This being the case, we cannot hope to find in the vaso-motor hypothesis the "open sesame" to the mysteries of the major neurosis and need not emphasise its insufficiency.

There is much in the volume that is worthy of study nevertheless, and the author has done a service in drawing attention to the frequency with which vaso-motor disturbances accompany the phenomena of hysteria. In more than one passage Dr. Savill hints that defective function on the part of spinal cord centres is at the root of some hysterical symptoms, and this deserves careful consideration. The book is eminently readable; its methodical arrangement

and lucidity of style enhance the interest of its subject. The chapter on treatment is replete with the practical suggestiveness that comes from experience.

A Practical Treatise on Disease in Children. By EUSTACE SMITH, M.D. Lond. Third edition. Edinburgh and London: William Green and Sons. 1909. Price 21s. net. Pp. 833.

THE third edition of Dr. Eustace Smith's work on the diseases of children is, as its full title indicates, a practical treatise; indeed, its ample roll of pages is almost exclusively reserved for the clinical aspects of this special branch of medicine. Although a considerable amount of new material is incorporated in the work, the original size of the previous edition is closely maintained by a compensatory abridgement of details relating to pathology and morbid This method of handling the subject will doubtless be appreciated by practitioners and others who refer to the work for the purposes of diagnosis and treatment, but it will necessarily deprive it of an extensive patronage among students who are preparing for their professional examinations. Those who are familiar with, and are appreciative of, Dr. Smith's work and teaching will perhaps be disappointed that he has given the reader so little benefit of his knowledge of the special subjects in the domain of peediatrics in which he undoubtedly excels-namely, in the uses of drugs and in the management of the infant's dietary. At the present day there are few greater masters of prescribing than the author of this book, but we look in vain for complete formulæ or a list of prescriptions in the form of an appendix. Of the indications for the use of special drugs there is ample information, but the reader is left to his own imagination as to the best manner of prescribing or combining them. We notice, however, that when the dosage is given, it is often almost heroic in amount. For instance, belladonna is recommended in doses of from 10 to 20 minims of the tincture for a child four years of age, and Fowler's solution in 10-minim doses for a child of the same age, while for an infant of 12 months it is stated that one drop of laudanum is not too large a dose. In these days of sero-therapy and hygienics the tendency is to discount the value of drug treatment, but if such drugs as belladonna, arsenic, and opium have any value at all opportunity should be given to get the full effect. That belladonna is now so little used in the treatment of enuresis or arsenic in the treatment of chorea is no doubt largely due to the fact that the young practitioner has not the courage of his opinions and employs his drugs in needlessly small doses; he will be well advised to study Dr. Smith's methods carefully. Though doubtless the reader will know well to what other of the author's published works he must refer for the required information, he must be prepared to seek in vain for enlightenment on the subject of infant feeding, except in the section which deals with infantile atrophy.

In a work which is so straightforward and free from controversy or speculation there is necessarily little to criticise. Indeed, the author seldom expresses an opinion unless he is sure of his ground; in fact, in a few instances his timidity in this respect lays him open to the reproach of facing both ways. For instance, on the subject of the first dentition, while he appears to be careful to respect the opinions of those who deny that teething is accompanied by pathological manifestations, he makes a concession to those who think differently by admitting that fever may result from this physiological process, and further, that the feverish child is eminently liable to fall a victim to the agencies which produce trouble in the digestive system. Surely the direct route is quite as good an explanation as this indirect

pathogenesis? Moreover, on p. 285 we notice the statement that inflammation and swelling of the gums during the cutting of a tooth may be a reflex cause of convulsions. If convulsions and fever are caused by dentition, why not other and minor evils? We are no more enamoured of the author's explanation of enuresis or incontinence of urine, which maintains that the condition is due to excessive irritability of the muscular fibres of the bladder. Usually this symptom is ascribed to nervous causes. Moreover, it is hardly logical to speak of infants acquiring the condition. All infants are more or less born with it, and they only lose the habit as the nervous mechanism which controls the function of the bladder develops and acquires stability. These, however, are very minor blemishes in a work which is so highly accurate and so well fitted for the purpose it is intended to subserve.

LIBRARY TABLE.

Outlines of Physical Chemistry. By GEORGE SENTER, Ph.D., B.Sc. Lond. London: Methuen and Co. 1909. Pp. 369. Price 3s. 6d.—In no other branch of chemical science has greater progress been made than in that known as physical chemistry, for not many years ago the subject was rarely included in any curriculum. Yet it concerns, however, very intimately some of the problems of medical science, and especially that part of the subject relating to functional activities. Bio-chemistry, in fact, has received its greatest impetus from a study of physical chemistry, in proof of which mention need only be made of such matters as osmosis, dissociation, electrical conductivity, law of mass action, equilibrium, all of which receive careful attention in the book before us. Primarily intended as an elementary introduction to the subject, it yet covers a good deal of ground, and the author's experience as a teacher has opened his eyes to the requirements of the beginner. His method of teaching, for example, by giving numerical illustrations of those laws and formulæ which present difficulty is sound, and he has been wise, further, we think, in using, as far as the treatment of such a subject permits, only the most elementary mathematics.

Hygiene for Nurses. By ISOBEL MCISAAC, formerly Superintendent of the Illinois Training School for Nurses. New York: The Macmillan Company. 1908. Pp. 208. Price 5s. net.—The instruction and training of nurses are now placed on a much more advanced footing than formerly. A nurse is now encouraged to take an intelligent interest in her work and to avoid becoming a mere machine; for this purpose, at most hospitals lectures are given by members of the medical staff and by matrons. In addition textbooks on nursing are now numerous. It is also essential that a nurse should know something about the elementary facts of hygiene. In this work the needful instruction is given in a simple and explicit manner, though it does not pretend to be more than a "compilation" intended to secure for the "young nurse a text-book on hygiene which shall be practical and within the range of her daily work." The chapter on "Food" gives many hints on the nature and amount necessary in health of the different varieties of diets. The remarks on adulteration of food are perhaps too discursive for a nurse, but nevertheless they will be found interesting. The observations on ventilation, heating, and lighting are concise and practical. The chapter devoted to a brief consideration of soil and water is also well written, and especial attention is drawn to the domestic purification of water. Some of the best chapters in the book are those on personal, household, and school hygiene-subjects which should be of interest to all nurses. We recommend this volume to its intended audience.

Intemperance. By the Right Rev. H. H. PEREIRA, Bishop of Croydon. London: Longmans, Green, and Co. 1909. Pp. 173. Price 2s. 6d.—This volume is one of the excellent series entitled "Handbooks for the Clergy," a series which is under the general editorship of the Rev. A. W. Robinson, the Vicar of All Hallows Barking. Dr. Pereira points out that the first edition of his book was published only some four years ago, but that within the interval between that edition and the publication of the second our knowledge as to the effects of alcohol has increased so widely that much new matter had to be added. We are so accustomed to wild and intemperate statements in temperance literature that we must congratulate the Bishop of Croydon upon the moderation which he shows forth. Of the evils of intemperance, not only in alcohol, we can confidently say that no profession. not even the clerical, has a wider experience than the medical. If intemperance disappeared, not only would crime diminish enormously but also sickness and a large amount of physical deterioration. But those interested in temperance may take courage from the fact that within the last 30 years there has been a wonderful improvement in the habits of all classes as regards alcoholic indulgence. Still, much remains to do, and Dr. Pereira's suggestions and descriptions of what is being done and what can still be done in the way of reform are sound and practical. One passage, however, shows undue optimism. In the chapter entitled "The Waste of Intemperance" Dr. Pereira gives some figures from a pamphlet published by the Church of England Temperance Society. There is a calculation by Mr. Arnold White to the effect that if the ordinary labourer were to give up one pint of beer per diem out of the three and a half which he is estimated to drink and were to invest the proceeds at 4 per cent. he would in 20 years' time have put by £135 17s. $3\frac{1}{2}d$. We have not checked the calculation, but we should like to know where the labourer could get a safe 4 per cent. for his savings, and what investments he is to choose which might not undergo some sudden and serious depreciation. We are glad to see that Dr. Pereira mentions the public-house trust companies, for to our minds the experiment which is being tried by these bodies is one that should give good results. chapter upon Personal Responsibility, with which the book concludes, Dr. Pereira quotes the following words of Professor Attwater of the Wesleyan University "in America" as to total abstinence. He adds that they exactly represent his views, and we may add that we agree with them also. "It is neither just nor wise to teach that the doctrine of total abstinence rests upon undisputed principles of either theology or morals. It seems to me that the question whether a man should be a total abstainer depends upon two considerations - his own welfare and the influence of his example." These are sound words. Perhaps we may be permitted to suggest to Dr. Pereira that in future editions he should give his references more fully than he has in the book before us. For instance, "Sir George Balfour, M.D., has said," is not of much assistance to one who wishes to pursue farther the remarks of the writer quoted, and we may say the same thing of the words of Professor Attwater. "The Wesleyan University in America" is vague.

Nahrungsmittel-Tabelle zur Aufstellung und Berechnung von Drütrerurdnungen für Krankenhaus und Praxis. Von Dr. HERMANN SCHALL und Dr. August Heisler. Würzburg: Curt Kabitzsch (A. Stuber's Verlag). 1909. Pp. 42. Price M. 1.90.—These tables, showing the composition of foods, were originally drawn up for use in the Medical Clinic in Marburg, and are specially designed for use in hospitals and for those practitioners who devote themselves to the study of diseases of nutrition. They will also prove useful

to the general practitioner. They consist of tables showing the composition of the chief foods used by man, including the relative proportions of proteins, fats, carbohydrates, common salt, and purin bodies present in these foods; also the amount of water and the heat value in calories of each food. These data occupy about 18 Four pages are given to the composition of mineral waters, many of which perhaps are not much known in this country, the ingredients being arranged as follows: common salt, sodium, potassium, and magnesium bicarbonates, sodium sulphate, magnesium sulphate, bicarbonate of iron, and carbonic acid. Lastly, the temperature of the natural waters is given. Then follow tables on the most important changes that foods undergo during cooking, and the amount of cellulose and mineral matter contained in 100 grammes of fresh uncooked foods. A table of the relative digestibility of foods and the time they remain in the stomach occupies one page. The remainder of the work is made up of tables showing the weights at different ages, the calorie-requirements in 24 hours under different conditions, and the average amount of protein required daily according to age. The work will prove useful to practitioners, while it is got up after the manner of a ledger, so that any item can easily be found.

Aids to the Analysis of Food and Drugs. By C. G. MOOR, M.A. Cantab., F.I.C., and WILLIAM PARTRIDGE, F.I.C. Third edition. London: Baillière, Tindall, and Cox. 1909. Pp. 249. Price 3s. 6d. net.—This is a capital little book and the authors may be congratulated on the success with which they have brought the third edition into line with new methods of analysis aimed at the detection of adulteration. What we appreciate most about it is that, while it gives a useful digest of most analytical methods worth applying, the chapter and verse are given of the original work upon the subject, so that if further details are required they may easily be found. As it is, the busy analytical practitioner will find in many cases sufficient material to help him to get the data he requires. We have gone through the sections carefully and have been impressed with the care that the authors have taken to present only those methods which have received recent approval. The sections demanding extension have received it, and burning questions, such as the non-existence of statutory powers to suppress the use of preservatives in foods (as recommended by a Departmental Committee), the extended analysis of potable spirits, the standardisation of drugs, receive adequate consideration and criticism. The exact references carefully given to the original papers on the recent important additions to analytical methods entirely exonerate the book from the opprobrium of being a cram-book or an insecurely "short cut" to knowledge.

JOURNALS AND MAGAZINES.

Edinburgh Medical Journal. - Three interesting articles appear in the September number of this journal. Dr. R. Dods Brown and Dr. R. Cranston Low report a case of pellagra in a patient who had never been out of Great Britain—apparently the second such case recorded. The subject was a woman, aged 21 years, who had never eaten maize but had consumed raw oatmeal and rice. Mr. D. P. D. Wilkie discusses Hirschsprung's disease or idiopathic dilatation of the colon and gives notes of five cases; he attributes the condition to over-distension of the colon with meconium in fœtal life, with resulting formation of a kink at the lower end of this part of the bowel. Dr. Peter Marshall deals at some length with the subject of lumbar puncture and describes a special needle adapted for the performance of this procedure. He enumerates the findings in the cerebrospinal fluid which are of diagnostic value and gives a long

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list of conditions in which relief of symptoms may follow lumbar puncture.

The Dublin Journal of Medical Science.—In the August number Dr. J. Singleton Darling publishes a report on an outbreak of scarlet fever in Lurgan, in which the infection was apparently carried by milk and originated in the case of a child who had suffered from a condition not recognised as scarlet fever. Sir John W. Moore records a case of acute parotitis in the course of pneumonia, followed by recovery, and discusses the incidence of this complication in infective diseases. Dr. E. Hastings Tweedy continues his annual report of the Rotunda Hospital.

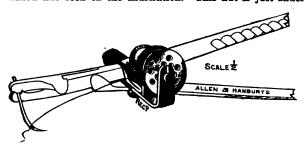
The Birmingham Medical Review.—The second of Dr. David Fraser Harris's lectures on the Essentials of Physiological History is published in the June number of this magazine, and deals with the subject of respiration and animal heat. In this branch of research British names are well to the fore, including, as they do, those of Boyle, Lower, Mayow, Hales, Black, and Priestley.

Rew Inbentions.

A SIMPLE SUTURE AND LIGATURE SPOOL-ATTACHMENT.

WITH the help of Mr. W. F. Chambers, of the Victoria Hospital, Folkestone, I have devised a suture and ligature spool whereby rapid and easy suturing and ligaturing can be accomplished.

The apparatus is a substitute for the more expensive "sewing machines" which have been devised from time to time, and consists simply of a light metal reel on a framework, which can be attached to most of the needle-holders in common use, or even to a pair of Spencer-Wells's artery forceps. The reel has deep flanges which are perforated, allowing for thorough sterilisation of its contents. Its axle is instantly unmountable from the frame, by half a turn of a milled nut seen in the illustration. This nut is just under



the thumb when working, and serves to control the rate of supply of suture material. A needle-half curved with an eye at the point—is the best to use in this contrivance; and, unlike the ordinary variety, once it is in the holder it need not be released. The needle is threaded as shown and then passed through the tissues in the ordinary way; the end of the thread is then gripped and held—in forceps—and the needle brought back along the thread, which is then cut between tissues and needle. This is one suture made, and the needle is ready for the next. It reads longer and more complicated on paper than it is, but actually the process is simple and rapid. A continuous suture can be adopted with slight modification, while for ligaturing the advantages are The whole attachment is cheap, adaptable, simple, obvious. clean, instantly changeable-allowing different efficient. materials or different sizes to be used-time-saving, and practical. It and its contents need not be touched at all after sterilising. A good all-round material to use on the spool is linen thread.

Messrs. Allen and Hanburys have most ably carried out the idea from my models and sketches.

Lies, Hants.

B. RICHARDSON BILLINGS.

Looking Back.

THE LANCET, SATURDAY, Oct. 1st, 1831.

A remedy has been employed by some, certainly of a most curious description, and well calculated to accelerate final dissolution. It is the belief of many persons that the cause of death by drowning is the impletion of the lungs with water; and knowing that fluids descend by their own gravity, they think that the most effectual method of evacuating the water is by suspending the asphyxiated person by his heels, not questioning but the remedy will be M. Louis is of opinion, that "they who are drowned inspire water, with which the air-vessels and cells are quite filled." But M. Detharding thinks quite contrary; he maintains "that drowned persons have no water in their chests, or air-vessels of the lungs, and that they perish suffocated for want of air and respiration, and that while the person is under water the epiglottis applies itself so closely, that not one drop of water can pass." I have already noticed M. Richerand's opinion, that the air-passages after drowning are found to contain a small quantity of frothy fluid; and that, if the body remain long under water, the spasmodic action of the glottis ceases, and that then water passes into the trachea and fills the lungs. Now M. Louis may be right, for the cases he has examined remained long under water; M. Detharding may be also right, for the cases he investigated may have been submersed only for a short time. But I think he is incorrect in assigning the close adaptation of the epiglottis, which is the coverlid of the glottis, to this aperture, as the cause which prevents the aqueous inrush to the lungs. It is true, in the act of swallowing, it is adapted, but I cannot agree with him that it continues thus applied:—"Anatomy," says Mr. S. Cooper, "proves the impossibility of its being so." M. Richerand appears to me to have given the most perspicuous account; I believe with him that the ingress of water is intercepted by the spasmodic constriction of the glottis, and not by the adaptation of the epiglottis; and that the water obtains admission after this constriction has, in consequence of the final extinction of vitality, ceased. In this case hanging by the heels could do no harm, but to make it a rule of practice cannot be sufficiently deprecated; for, in the first place, while constriction of the glottis continues, supposing water to have obtained forcible admission, the closing of the laryngeal opening would prevent its efflux; and, in the second place, the measure is highly detrimental, inasmuch as the congestion of the brain is augmented, a condition to which is attributable the suspension of animal life. Lastly, electricity has been employed for the purpose of restoring suspended animation. For my own part I dissent from its exhibition. The practice is condemned by Baron Larrey, and the rest of the French surgeons. "An atmosphere," says M. Richerand, "highly electrical at the approach of a storm, renders respiration very laborious in some cases." And I know a lady who was once the subject of chorea, who could always tell the approach of a thunderstorm, by the miserable feelings to which she was subjected by its influence upon her nervous system. We have seen that the electric fluid is a powerful agent in simultaneously arresting both organic and animal life. But it may be urged that the most deleterious substances, by judicious management, become most efficient restoratives in disease. This is granted, but who will define the due intensity of electric action that ought to be transmitted through a body in which vitality is all but extinct? 1

¹ Excerpt from Essay on Asphyxia. By John Thomas, Esq., Surgeon to the Dispensary, Well-street, Hackney.

ROYAL SOCIETY OF MEDICINE.—A meeting of the Therapeutical and Pharmacological Section of the society will be held on Oct. 5th at 4.30 P.M., when a discussion on the Teaching of Therapeutics in the Hospital Wards will be opened by Sir T. Clifford Allbutt. It is expected that Professor W. Osler, Dr. Harrington Sainsbury, Dr. J. Calvert, Dr. Robert Hutchison, and Professor W. E. Dixon will take part in the debate.

THE LANCET.

LONDON: SATURDAY, OCTOBER 2, 1909.

The Work of the International Medical Congress.

THE Sixteenth International Medical Congress, our report of whose labours was concluded last week, has proved to be one of the most interesting and successful of the many international congresses which have been held up to the present time. Every thinking mind must have considered the question whether, after all, the practical benefits resulting from international medical congresses are commensurate with the large amount of exertion, time, and money which must be expended in their preparation if they are to prove successful. Certainly it must be conceded that a congress in these days is not essential to the publication of new medical facts or theories. Without the aid of any such meetings all the advances in medicine and the allied sciences would quickly find their way to the uttermost parts of the earth by the channels provided by the medical press, so that if the sole aim and object of these gatherings were to be the diffusion of medical knowledge much less expensive and onerous methods could be readily pointed out. But congresses have another function than to diffuse knowledge; they should sift it and clarify it. Misunderstandings occur not only in the political world through want of personal knowledge of one another by the disputants, but in the medical world also. Scientific though the methods of any school of medicine may be, there is a possibility, nay, more, a probability, of misunderstandings arising between those who have never had an opportunity of conversing together, and year by year the difficulty of diverse tongues becomes less as the number of men increases who can understand and express themselves in two out of three great languages-English, French, and German. When scientific questions are made the subject of discussions in newspapers polemics may arise from some small and unimportant point; frequently the matter in dispute is enlarged by some extraneous force so that the field of battle is widened and the number of the combatants is greatly increased. is bad in ordinary matters, it is doubly regrettable in matters scientific, where no political or geographical landmarks should exist. Questions of priority of invention or discovery will always be arising and national pride may stimulate the quarrels attaching thereto. Theories evolved to explain the phenomena of nature and disease run some risk of being accepted or rejected rather because of the part of the earth whence they arise than because of their intrinsic value and of the firmness of the foundation on which they are built. The vex viva is ever more potent in promoting understanding and agreement than the written word. So for the prevention of these disputes and the elimination of bearers who come on to the field to carry off those

their causes no better machinery has hitherto been devised than such gatherings of medical men of all countries as the International Medical Congresses. We are not yet in Utopia and it would be unreasonable to think that international congresses can remove entirely all matters of dispute in the realm of medicine, but they should ensure that these disputes depend on an essential scientific difference of opinion, and not on the accidental point of the nationality of the disputants themselves. Differences of opinion must arise. It would be bad indeed for medicine if it were not so, for all new facts and theories must be tried on the touchstone of experience, by which alone can their real value be proved. The insight into the social life of other countries offered by international medical congresses affords a great opportunity for the test of practical knowledge; the value, for example, of hygienic regulations can only be gauged by inspection of the machinery and experience of the results. Thanks to the hospitality of each country where the congresses have been held, not only has good international feeling been promoted, but admirable chances have been given to the visitors to see the inner life of their hosts. When we regard international medical congresses from these points of view, as we should, we see that they are potent influences in civilisation, and this fact should make us overlook any muddle or waste of effort with which they may be connected in our minds.

It was obviously impossible for any journal to give anything like a full account of the proceedings of a Congress such as that at Budapest. When the transactions are published they will fill more than a dozen large volumes, and from this alone it is easy to see that even a résumé of the proceedings as a whole would be impossible in the columns of a weekly paper. We therefore selected for particular notice the proceedings of the last two sections as being concerned with subjects peculiarly suitable for discussion at international gatherings. These sections dealt with naval and military surgery, tropical medicine, and questions of quarantine, matters which concern all nations internationally. Every country at one time or another engages in war, and wise and humane as the world may be growing we cannot be supposed to have nearly outgrown the possibility of appeals to arms. Certainly at the present moment all Europe prepares more or less thoroughly for taking part in naval or military operations, and no one can feel certain that manœuvres may not be in a moment replaced by actual service; so that the questions connected with the hygiene of the army and navy in peace and in war, as well as everything connected with the surgery of naval and military operations, are subjects of paramount importance to all countries at this date. We therefore devoted no small proportion of the space allotted to our report of the Congress to publishing notes on these matters, and we may quote an instance in which the need for an international understanding in matters relating to military surgery is of vital interest. In all armies it is customary by different labels or "tallies" as they are called to indicate the condition of wounded men. If a man is slightly wounded he has a label of one colour, if he is seriously injured the colour is different, so that the

who have been injured are able to judge by the colour of the tally what to do with the patient. fortunately, there has been up to the present no agreement among different nations as to the use of these colours, so that a soldier may have a tally which to the bearers of one side would indicate that he is only slightly wounded and can walk, while to the bearers coming from the opposing forces the tally would indicate that he is seriously wounded and needs immediate operative treatment. Such confusion as this is unworthy of the times we live in, and we endorse the appeal made by Lieutenant-Colonel W. G. MACPHERSON, R.A.M.C., that an agreement may be arrived at as to the adoption of a uniform system of tallies. Other papers read in these sections included most interesting communications on prophylaxis against yellow fever, on the sanitation of ships, and on the Mussulman pilgrimages, an abiding source of danger to Eastern Europe. Complaint has been made that in many of the sections, even in those where matters of such general as well as vital interest were being discussed, the attendance was sparse, and that if it had not been for the presence of members anxious to read their own papers there would not have been an audience to whom the papers could have been read. It is unfortunate in some ways that this should be so, but a small debate well conducted by those of personal experience is of more value to science than a rambling discussion before a partially interested, though larger, audience.

It has been suggested that the present system of International Medical Congresses dealing with all branches of medicine and surgery will tend to come to an end and that we shall soon see the establishment of congresses dealing only with separate branches of medical science. We do not think such specialised meetings are likely to take the place of International Medical Congresses, though they may increase in number and do good work concurrently. The international meetings on dermatology have for more than 20 years proved the practical value of congresses dealing only with one subject; and congresses in hygiene, dentistry, and general surgery have also a record of success, especially the excellent International Congresses of Hygiene and Demography. But we feel that it would be a real loss to carry out to such a degree the idea of specialism that no general congresses should be held. There must always be this risk in specialism, that it may lead to too narrow an aspect of medicine among the practitioners, and this evil is averted by the mingling of the exponents of all departments of medicine at the various meetings of medical congresses. We do not ourselves see the signs, which are evident to some, that these general International Medical Congresses having served their purpose will soon cease to be held. This risk has been minimised by the establishment of a permanent bureau whose function it will be to remove all causes of friction, to make the assemblies as easy of approach as possible, and to prevent the waste of effort which is now so depressing to all concerned in these meetings. With the effective carrying out of reforms in organisation there will disappear the feeling that International Medical Congresses are, to word that feeling in the simplest way, more trouble than they are worth. This country has the honour of receiving the first international meeting of medical men to be held after the establishment of the permanent bureau, and those into whose hands the details of management will fall will have to bear a heavy responsibility. As the interval between the congresses has now been changed from three to four years we do not as a nation become the host of international medicine until 1913; but it is already not too soon to put in hand preliminary arrangements for ensuring that this country does full justice to the occasion.

The Empire and its Children.

If the topics selected by the writers of books may be regarded as straws indicating the prevailing directions of the currents of opinion, there is before us at the present time a satisfactory amount of testimony that the importance of children, when regarded as the adults of the near future and as the coming masters of the destinies of the Empire, is daily receiving an increased amount of consideration. It is daily more and more being recognised that if the United Kingdom desires to emulate the mother of the GRACCHI and to display her offspring as her jewels, she must at least submit these jewels to a considerable amount of polishing and of resetting before she can either look upon them with entire complacency as ornaments, or can regard herself, by virtue of possessing them, as in a position to speak without shame to her enemies in the gate. The recent publications of the Board of Education, and especially the timely and most valuable Syllabus of Physical Exercises, point to a degree of enlightenment, with regard to the view officially taken of schools, which almost amounts to a revolution, and which affords reasonable hope that these institutions, within a period of time negligible in the history of a nation, may really be made to afford to the young, in the well-known words of PALEY, "preparation for the sequel of their lives," even to the extent of defence against the wiles of the quack or the agitator.

Towards this good end many private influences and unofficial publications have been contributing; and we welcome among others an interesting volume on "Children in Health and Disease," 1 described by its secondary title as "A Study of Child-life," and written by Dr. DAVID FORSYTH, largely as an outcome of his experiences at the Evelina Hospital for Sick Children and at the children's department of the Charing Cross Hospital. Of the sources of his experience of healthy children we are not informed; but he has manifestly, either as a parent or in some other capacity, been an attentive observer of their ways and works, and has cultivated a sympathy with them which is essential to any correct understanding of their motives and feelings. On the other hand, he has attempted, we think, to cover too large a surface of ground, and has thus been compelled to deal somewhat superficially with topics some of which would have repaid a larger amount of care than has been given to them. More than once we have found, on the heading of a page or in an entry in the index, some promise which the text itself has only fulfilled in a way which makes us want more. With this qualification, we have nothing but praise for the

¹ London: John Murray, Albemarle-street, W. (demy 8vo, pp. 362 + xx., price 10s. 6d. net.)

manner in which Dr. FORSYTH has traced out the gradual development of the intellectual faculties in the growing child, and it is assuredly only by attention to the natural history of this development that education, in the proper sense of the word, can ever be profitably conducted upon a large or national scale. In the cases of individual children there are, of course, infinite possibilities of influences calculated to counteract the blunders of the teacher; but when these blunders are crystallised into a system and supported by all the pressure of authority, their influence is certain to be disastrous upon at least a certain proportion of those who are rendered subject to them. The key to safety and advantage is to be found in the simple principle upon which we have more than once insisted, the principle that the development of the faculties of the growing organism is a physiological process, and therefore one which can only be conducted successfully under the guidance of physiological knowledge. The practical applications of this knowledge to every step of the educational process or period, to the regulation of sleep and food, to the character of clothing, to the division of tasks, to the duration of periods of application and study, to the arrangement of lessons in such a manner as to bring the more difficult of them within the periods of greatest functional activity, -such things and many others are dealt with by Dr. FORSYTH on a basis of principle resting upon knowledge; and his injunctions, in more than one particular, will be found to be in direct opposition to practices which have been rendered venerable by long usage, but which can no longer be defended, even upon the ground that they have been successful in their application.

This book may be fruitfully studied in connexion with another, on the higher education of boys in England, which has recently been published by Mr. CYRIL NORWOOD and Mr. A. H. HOPE, and which describes English schools, in respect of their success in imparting such education, as being "a hundred years behind France and Germany and forty years behind America," all of them, it may be observed, countries in which study of the immature organism has been taken as the only safe guide to endeavours to promote its development to the full measure of its potentialities. These outspoken authors condemn a large proportion of English schools utterly, as tested by the completeness of their failure to accomplish that which they are supposed to set themselves to do, and they point out that we alone among the greater European nations content ourselves with offering, instead of enforcing, inspection. There is no department of our public life in which the recent Royal injunction to "wake up" is more urgently required than in education; and because it is one which the average parent has never studied, and on which he is therefore incompetent, not only to advise, but even to judge of the character of the advice offered to him by others, it has become imperative that public attention should be directed to its character and its importance. No one can so far ignore the signs of the times as not to perceive many clouds on the imperial horizon, and the power of the children of to-day to deal with any tempests of which these clouds may be the harbingers will be materially conditioned by the red, and of high refrangibility as violet, and a tinge of these

character of the educational system under which they are now being prepared for the responsibilities of manhood and for the duties of citizens.

A Complete Theory of Colour-Vision.

WE publish in another column a paper by Dr. F. W. EDRIDGE-GREEN on the Theory of Vision which was read by him before the Section of Ophthalmology, and again by special request before the Section of Physiology, at the recent International Medical Congress at Budapest. No one who has studied the various theories of vision, and especially of its important adjunct colour-vision, can fail to be struck with the large amount of hypothetical material which has to be accepted to make them fit in with known facts. Dr. EDRIDGE-GREEN is striving to show that the older theories are no longer tenable, and that his view which he so fully and lucidly explains in his paper, and which was so enthusiastically received at Budapest, is capable of explaining every known fact relating to vision. We may sum up that theory as follows. When a ray of light impinges on the retina it liberates the visual purple from the rods, which then diffuses itself into the fluid surrounding the outer segments of the cones. In the fovea there is no visual purple until this diffusion takes place. This substance is photo-chemical and a photograph is thus formed. The rods are connected only with the formation and distribution of the visual purple and not with the conveyance of light impulses to the brain. The decomposition of visual purple by light chemically stimulates the ends of the cones, and a visual impulse is set up and conveyed through the optic nerve to the brain. Thus a colourblind person has an eye which in no way differs from the eye of a normal-sighted individual, but the reason that the former does not distinguish between rays of light whose difference in wave length is obvious to the latter is because his brain centres are not sufficiently developed to appreciate so small a difference. All, even the best among us, are really very colour-blind, for we are utterly unable to distinguish any difference in colour in large patches of the spectrum; for instance, if a spectrum is looked at and all is cut off except a patch, say, of green, which appears monochromatic, it is impossible for anyone to say which end of this patch corresponds to the red end of the spectrum and which to the violet, while we know there is a considerable difference in the wave-lengths of the rays comprised in this patch. The colour-blind person would in like manner see perhaps the red, orange, yellow, and green all as one colour. Such cases correspond identically with the musician who is able to distinguish small fractions of a tone, while another who has "no ear for music" is incapable of telling and remembering one note from another unless the difference between them is enormous. In regard to the evolution of the colour sense Dr. EDRIDGE-GREEN suggests that to the least developed sense of sight all nature appeared black and white of various shades, as is seen in an ordinary photograph, but as more cells were added to the visual centres rays of low refrangibility were seen as

two colours was visible at each end of the spectrum, with a large neutral band between. These colours gradually approached until they met. The eye then began to be able to distinguish something at the point of juncture where the rays most differed in wave length from the two ends, and these were termed green. Yellow next became interpolated between the red and green, blue between the green and violet, orange between the red and yellow, until some eyes became capable of seeing a distinct colour, indigo, between the blue and violet. As development progresses more colours may perhaps become visible, and what we call normal colour-vision now may not improbably be termed subnormal in years to come. As a retrograde condition we find examples of all the conditions from total colour-blindness to full normal vision existing at the present time. The theory which Dr. EDRIDGE-GREEN develops in his paper proposes to explain the ascertained facts of vision, and much that we know of vision supports it. The Board of Trade, however, will have none of it, preferring to rely upon HOLMGREN'S test. The matter is of vast importance, and it seems to us that the Board of Trade might well refer the questions at issue to an authoritative committee upon which physiologists and ophthalmologists should be duly represented.

Annotations.

"Ne quid nimis."

THE HOUSING AND TOWN PLANNING BILL AND THE HOUSE OF LORDS.

WE do not at the present moment propose to discuss the several mutilations which the House of Lords has inflicted upon the valuable measure of domestic reform which Mr. Burns so ably piloted through the House of Commons, but we feel compelled to protest against the emasculating alterations and deletions which have been made in Part III., which deals with the appointments and duties of county medical officers of health. It was proposed by the Bill that the Local Government Board might, if it thought fit, prescribe the duties of county medical officers of health, and had the clause which provided for this prescription been allowed to remain we might soon have seen a marked quickening in public health administration in rural and small urban districts with a corresponding improvement in the health and conditions of their populations. It is the constant complaint of county medical officers of health that they have so few powers, and had the proposal referred to been accepted by the Lords it is clear that the Local Government Board might have so defined the duties of the officers in question that their spheres of activity would have been greatly enlarged and their inter-relation with district medical officers of health placed upon a better footing. The present position of county medical officers is a very difficult one and the impression left after seeing their work and reading their annual reports is that potentially they are of the highest value, but that it is unusual for their potential energy to be converted into actual energy. Otherwise expressed, they need additional powers and credentials. It is difficult to understand why a body constituted like the House of Lords should have thus shown what appears to be an indisposition to further rural sanitary administration, and the fact of its rejection of this proposal raises suspicions to which party politicians will certainly give voice. We must, too,

express regret that the arrangements made in the Bill by means of which a county medical officer of health could only be removed by his county council with the consent of the Local Government Board have been deleted. Medical officers of health as a whole throughout the country had hoped that in this provision there was the promise of a better state of affairs, of a condition under which they could have performed their work more conscientiously and efficiently without the constant dread that local holders of property who were also creators of nuisance would use every endeavour to terminate their appointments. Perhaps the House of Lords has feared an extension of the principle involved and has decided to nip the movement in the bud. In view of the present temper of the Upper Chamber where the health and social conditions of the people are involved, we must, at any rate for the moment, be content with very small mercies, and in this spirit we give thanks for the fact that the county medical officers, with one notable and conspicuous exception, have been given powers of entry on premises in common with district medical officers of health, but why the inhabitants of the County of London should be debarred from the advantage of this provision is beyond our comprehension. Perhaps we shall hear more of this matter next week, and, if not, we trust that Mr. Burns and the Government will explain to the House of Commons why it is that an advantage, which they intended should apply to England as a whole, has been denied to about a fifth of its population living under conditions which call for inspection at least as urgently as it is called for in rural districts. It would be deplorable were even the semblance of party politics introduced into public health questions by the House of Lords. No greater disaster could befall public health than to become associated with one rather than another political party.

A MEDICAL STOCK-TAKING.

Professor W. Osler may rightly be called the Nestor of British Medicine. Not only does he sit at the fount of medical wisdom in our oldest university, but he has well earned the title by the words of counsel and encouragement to the young practitioner and of sympathy and understanding with the older, which have on many formal occasions fallen from his lips. We have before us a printed copy of one of the latest of his public utterances1 delivered before a body of medical practitioners of Canada. His theme is almost as wide as medicine itself, for he deals with the treatment of disease, a subject which, including, as it necessarily must in ever-increasing measure, the knowledge of preventive medicine, comprises the greater part of our science and the whole of our art. Professor Osler first mentions the two great conceptions of the meaning of disease which were held almost universally from the days of the Grecian fathers until within the memory of men still living—the primitive theological belief that all sickness was the scourge of God for sinners, and the Hippocratic doctrine of the humoral pathology. With these crude conceptions he contrasts the belief of to-day that the ultimate processes of disease, whether arising from within the body or introduced from without, are of a physicochemical nature—a belief which allows of a more rational attempt at their prevention and cure than has ever before been possible. Then follows a jubilant reference to the discoveries of the causes of many of the great scourges, discoveries which have changed the whole outlook of humanity, and a bold assertion of the claim of medicine to have entered an era of progress even greater than that to which

¹ The Treatment of Disease, the Address in Medicine before the Ontario Medical Association, June 3rd, 1909, by William Osler, M.D., F.R.S. London: Henry Frowde. Pp. 26. Price 1s. net.

the Listerian methods have introduced the art of surgery, For the surgical achievements of to-day our admiration is second to none, but too often the cry is raised, and that by well-informed persons, that surgery is leaving medicine far behind. Let them hear what this physician says of modern medicine. "Nothing has been seen like it on this old earth since the destroying angel stayed his hand on the threshingfloor of Araunah the Jebusite." And he makes good his bold saying in words which persons pledged to the antivivisection cause would do well to mark. "For seven years Cuba, once a pest-house of the tropics, has been free from a scourge which left an indelible mark in the history of the Englishman, Spaniard, and American in the New World." Then he contrasts a recent work on tuberculosis with one published 30 years ago, in which the drug treatment, now relegated to a page or two, claimed the largest share of the pages. In such matters as diet, exercise, massage, and hydrotherapy he rejoices that "we are every day finding out the enormous importance of measures which too often have been used with the greatest skill by those outside or on the edge of the profession." We would add that if this formidable type of unqualified practice is to be faced more successfully in the future than has been done by medical men in the past it is absolutely necessary that our students should receive proper instruction in the physical group of therapeutic agents, the importance of which was so well recognised in the temples of Æsculapius. If the knowledge of their application were more widely spread at the present day we should hear less of gymnasium masters professing to cure over 90 per cent. of all diseases which their clients may bring to them for treatment. The discourse passes on to consider a grave problem of what has been aptly termed "pastoral medicine," the question of whether a medical man should tell his patient that he is in a very serious way. Professor Osler says wise words on this subject. We are to regard ourselves as the teachers, not the servants, of those whose bodies are committed to our keeping and on occasion we must sacrifice our own inclinations and tell them what is true rather than what is pleasant. A later part of Professor Osler's address deals with the psychic treatment of disease, about which we have heard so much of late. He does not seek to discount its importance—indeed, he acknowledges a "grain of truth" in a friend's definition of his own practice as "a mixture of hope and nux vomica"—but he would not have the clergy meddle with systematic treatment of the sick in an age which has lost the apostolic gift of healing. His last word concerns the instruction of the student, and it seems to us to sum up the best modern doctrine concerning the place of drugs in the treatment of disease.

THE VALUE OF SYSTEMATIC EXERCISES IN THE TREATMENT OF ORGANIC DISEASES OF THE NERVOUS SYSTEM.

EVER since Dr. Frenkel of Heiden, now about 15 years ago, published his methods of treating the ataxia of tabes dorsalis by physical exercises systematically applied, his ideas have been accepted and their carrying out adopted with the most gratifying results. In every hospital in the world worthy of the name the tabetic finds ready for his use some or other form of apparatus for the prosecution of "Frenkel's exercises." Anyone, however, who cares to read the original paper will note that Dr. Frenkel did not confine the application of his methods to tabes, but specified many other conditions, organic and functional, where they had been of proven value. This has been rather lost sight of, although more attention is now being directed to this side of the subject, and it is therefore interesting to find Professor Karl | cases which formerly occurred in the Japanese navy, there

Petren of Upsala giving out of a wide experience many practical details of the treatment of organic nervous disease other than tabes by Frenkel's methods. In the Archives de Neurologie for August he considers the treatment applicable in two forms: one is compensatory, and is founded on principles of the same nature as those utilised for tabes; the other consists in simple exercises intended to augment the strength of certain groups of muscles. If we take, for instance, multiple peripheral neuritis, physical treatment is directed primarily to increasing the muscular force, and can be attempted only in the stationary or convalescent stage. It frequently happens that some degree of muscular power, insufficient to produce displacement of the limbs, still survives, for patients unable to move their extremities in bed can often do so when in the bath. Sometimes, therefore, it is a good plan to commence exercises when the patient is immersed in water. If he cannot make a given movement unaided, the physician puts the limb into the required position, and as he does so asks the patient's coöperation in attempting it; thus even though the result be minimal the latter has made the effort. If he can execute movements himself, then they are performed regularly at the different articulations several times daily, the physician or attendant offering slight resistance in each case. For each movement exercises must be employed, however paralysed the muscles be. For essaying walking, a go-cart is recommended as the first procedure, but as soon as the patient can stand upright with the aid of his hands Professor Petren advocates the use of what he calls a "passerelle" or footbridge. This consists of a pair of parallel bars, about 12 feet long, the height of which from the floor is that of an ordinary walking-stick. Walking exercises take place in this apparatus, which provides an excellent transition from the go-cart to walking-sticks, and in which, moreover, other exercises than those of walking can be made. The passerelle is greatly to be preferred to crutches; these only serve to perpetuate vicious methods of progression, for the patient never performs movements analogous to those of walking as long as he swings his body on these supports. Many other varieties of organic nervous disease may be treated with considerable success by the application of these principles.

BERI-BERI IN THE TYNE.

ABOUT a fortnight ago, on the arrival of a Brazilian cruiser in the Tyne, it was found that several of the crew were suffering from beri-beri, and they were removed from the ship to the floating hospital of the Tyne Sanitary Authority at Jarrow Slake. The vessel has been under close observation since then, with the result that more cases of the disease were identified, and the subjects, to the number of nearly 20, were also removed to the floating hospital. The cases have not apparently pursued a violent and serious course, but one death has been reported. The cases are understood to have been of the classical clinical types—"dry" and "dropsical," the former variety being the commoner. One other case which was seen first in the Royal Victoria Infirmary was apparently of the "dry" variety, the main symptoms and signs being cough, dyspnœa, pleural effusion, painful limbs, and absent reflexes. regard to the etiology of the disease in these particular cases little can be made out with any definiteness. Inasmuch as the vessel was bringing over a spare crew to man another vessel it is possible that the quarters of the men have been somewhat crowded; of the special character of the food we have no information. Comparing this particular group of cases, occurring in men of the negro type, who are responsible for the roughest class of work at sea, with the appears to be no direct blame attached to the food, for which a strong case was made out in the instance of the Japanese.

A FRENCH VIEW OF THE SWEATING SYSTEM.

THE industrial conditions which have gained an unenviable notoriety under the designation of the sweating system present several features of interest from a medical point of view. Of comparatively recent origin, the term does not seem to admit of any precise definition, but signifies in a general way a system of paying the lowest possible wages for work done by poor people anxious for employment. Wages being subject to economic laws are naturally low when the labour market is overcrowded, but in considering the evils connected with one particular species of illpaid labour it will not be necessary for us to enter into financial details. The rapid extension of the factory system which commenced in England about a hundred years ago laid the foundations of a period of great prosperity in certain trades, especially in the manufacture of all descriptions of cotton and woollen fabrics. At first the bodily welfare of the operatives was not sufficiently regarded. Overwork was universal, parents profited by the labour of their children, and accidents caused by unfenced machinery were incessant. A remedy had to be found for these abuses, but just about the time when legislation and inspection were doing a great deal for the protection of factory operatives new problems of even greater difficulty arose in certain trades employing great numbers of needlewomen, tailors, and shoemakers who worked either by hand or with portable appliances of which a sewing machine driven by foot power was the most elaborate. The essential feature of the factory system is cheap production by the use of expensive machinery which is necessarily the property of the employer, and as the operatives are on the premises only during the hours of their employment inspection is comparatively easy. With the second class of workers the case is quite different, for a large proportion of them, instead of following their occupations on their employer's premises, only call there for the purpose of taking away materials which they convert into finished articles at homethat is to say, in dwelling-houses to which the Factory and Workshop Acts do not apply. An extension of this principle is that the manufacturer may make an arrangement with a sub-contractor or middleman who may either distribute materials to individual home-workers or may have the finished articles made up by persons living and working on premises occupied by him as a dwelling-house. Strictly speaking, the mischief is not confined to the tailoring and shoemaking trades, but for our present purpose a sufficiently accurate definition of the sweating system will be the commercial manufacture of clothing by home-workers in the rooms where they habitually live, and readers of THE LANCET do not need to be reminded that from a medical point of view there are many objections to the practice. Obviously the people who accept such terms belong to the necessitous classes, their habitations are overcrowded and insanitary, and child labour is inevitable. For many years philanthropists have been denouncing this system, and much evidence as to its injurious effects on health has been collected in Europe and America both by medical men and by official commissions of inquiry, the latest of which was the Select Parliamentary Committee on Home Work which sat last year at Westminster. 1 Dr. Lucien-Graux, editor of the Gazette Médicale de Paris, has recently published an important memoir on this subject. He considers that the sweating system, which he designates by its English name in preference to any

French equivalent, originated at Boston in America about the year 1863, and that its subsequent development in that country coincided with the growth of the trade in cheap ready-made clothing. Quoting from the published evidence collected in Chicago, New York, Paris, London, Berlin, and Switzerland, he describes the wretched conditions under which many home-workers live, their overcrowded and illventilated rooms, and the prevalence of tuberculosis and other infectious diseases among them. He draws particular attention to recorded instances of clothing which had become infected in the home-worker's room communicating small-pox and other eruptive fevers to the purchaser, his list of authorities including the report of THE LANCET Sanitary Commission on Sweating and Home-work Systems published by us on Jan. 29th, 1876. In conclusion, Dr. Lucien-Graux discusses at some length the state of the French law with regard to these evils. He thinks that little can be expected from the statutes corresponding to the British Factory and Workshop Acts (la loi sur la réglementation du travail dans l'industrie), but that much good may be done if local authorities will make proper use of the Public Health Acts (la loi sur la protection de la santé publique) and exercise the powers thereby conferred on them for the prevention of infectious disease.

THE EXTRACTION OF VEGETABLE DRUGS WITH GLYCERINE.

PARLIAMENT has decided not to abate any part of the spirit duty proposed in the Finance Bill, and though everyone may not accept Sir William Bull's estimate of the increased strain which the new duties will entail upon hospital exchequers (as reported in our Parliamentary Intelligence on p. 1042), yet these duties will be sufficient to make the substitution of glycerine for alcohol as a solvent of the active principles of vegetable drugs an economical proceeding. This subject is well discussed in a lengthy article by Mr. George M. Beringer on Fluid-glycerates in the current volume of the Proceedings of the American Pharmaceutical Association. The so-called "fluid glycerates" contain 50 per cent. by volume of glycerine and are so adjusted as to strength that one part by volume of the liquid represents the soluble matter of one part by weight of the drug. Glycerine is an indifferent solvent for resins, fats, and fixed oils, and, in fact, for most substances which are perfectly dissolved or extracted by alcohol. On this account it is of but little use as a solvent where such constituents represent the chief active principle of the drug, and its use even in conjunction with alcohol is contra-indicated in such preparations. In the case of drugs which are readily extracted by water the desired substances may be extracted by dilute glycerine, while the oily, resinous, and other undesirable constituents remain in the marc. Glycerine is a good solvent for many of the sweet, bitter, astringent, and essential flavouring constituents of drugs, and exercises a marked solvent action on many of the alkaloids, glucosides, and neutral principles. The fluid glycerate of krameria illustrates the usefulness of this class of preparations. It is made by percolating the coarsely powdered drug with a mixture of glycerine and water, and Mr. Beringer states that clinical experience has demonstrated its value in catarrhal affections of the rectum. In making a fluid glycerate of alkaloidal drugs it is necessary to add a small quantity of acid to the menstruum, while in the case of liquorice and senega it is advisable to add a small quantity of alkali. Mr. Beringer suggests that the fluid glycerates as a class should appeal to physicians as they afford excellent concentrated infusions. Thus the simple dilution of the fluid glycerate with either hot or cold water will supply:a satisfactory substitute for an infusion of such drugs as

aborandi, broom, spigelia, triticum, and uva ursi, all of which are preferably administered in the form of an infusion and yield satisfactory fluid glycerates. Again, alcohol may be contra-indicated, as in cases of hysteria in which it is desired to administer valerian, which yields to glycerine its active constituents. In the treatment of alcoholism it is a great advantage to be able to prescribe the aromatic bitter tonics, such as orange peel, gentian, and chiretta, in a non-alcoholic menstruum, and the fluid glycerates of these drugs have been found satisfactory. Mr. Beringer has given the results of his experiments with nearly 100 drugs. He admits that further work is required to establish the stability of this class of preparations, as well as to determine their chemical and physiological value. In a recent number of the American Journal of Pharmacy Mr. John R. Rippletoe has described his experiments on the physiological action of two of the drugs dealt with by Mr. Beringer-viz., digitalis and ergot. He prepared tinctures and fluid glycerates of these two drugs and compared their physiological activity. The preparations of digitalis were tested on frogs by determining the minimum lethal dose, with the result that the alcoholic preparations were found to be five times more potent than the fluid glycerate. In testing the action of the preparations of ergot equal amounts were injected into the thigh muscle of two roosters. Although the sample of ergot appeared to be of poor quality, a typical darkening of the comb was produced by the alcoholic extract, while the fluid glycerate produced only a slight and transient paling of the comb and wattles. Although these experiments do not afford a perfectly satisfactory method of testing preparations of ergot the results would appear to be in favour of the alcoholic extract. Rippletoe's experiments with these two drugs are not very favourable, but he admits that the fluid glycerates may possess a therapeutic value which can best be proved by clinical tests. It is noteworthy that in many of the fluid glycerates prepared by Mr. Beringer from alkaloidal drugs the finished preparations contained appreciably less alkaloid than did the corresponding alcoholic fluid extracts, which serves to show that the method of preparing the fluid glycerates must be improved before they can be used with assurance in place of the alcoholic fluid extracts. The subject offers a good field for pharmaceutical research.

KISSING THE BOOK.

WE believe that the insanitary possibilities of the usual method of taking the oath in our law courts by "kissing the Book" were first pointed out in THE LANCET in 1885. Certainly from that year onwards we have had frequent occasion to refer to them. It is true that the Oaths Act of 1888 repealed sections of nine older Acts dealing with the methods of swearing witnesses in Great Britain and Ireland, and made it optional for a witness either to take the oath with uplifted hand in the Scotch fashion or to make an affirmation instead of an oath, but in spite of this legislation kissing the Book remained the almost universal custom in the courts, and we have referred to the obvious hygienic objections to its promiscuous public performance over and over again during the last quarter of a century. In these protests we have been supported by many medical men, especially by Mr. F. W. Lowndes of Liverpool, who, since the subject was first broached, has never ceased to speak and write in our columns and elsewhere against the perpetuation of the traditional ritual of the witness-box. It must be a source of gratification to him, as it is to us, that the new Act to amend the law as to oaths has become law upon the first day of the present month. We have reported the progress of the Act

through Parliament, and our readers may remember that it has been under consideration by a standing committee of the House of Commons, which has stated in a memorandum to the Bill that under the Act of 1888 "judges, magistrates, coroners, and other persons do not consider themselves justified in suggesting the form of oath to the witness, jury, or deponent, and it is a question whether the oath ought to be so administered (i.e., in the Scottish fashion) unless the witness or deponent voluntarily requests it to be done. Consequently, the old form of kissing the Book, to which there are many objections, still prevails." The memorandum proceeds to the effect that the object of the new Act is to make the administration of the oath by uplifted hand universal unless the person about to take the oath voluntarily objects to its administration in this form by the court. The words of the effective provisions of the Act are as follows: "Any oath may be administered and taken in the form and manner described in the schedule hereto" and "the officer (i.e., the person duly authorised to administer oaths) shall (unless the person about to take the oath voluntarily objects thereto or is physically incapable of so taking the oath) administer the oath in such form and manner without question." The schedule to which reference is made describes the usual Scotch form of swearing "by Almighty God" with uplifted hand, a form which, in our opinion, is much more solemn and impressive than the perfunctory kissing of a copy of the New Testament, besides being much more ancient. Medical men have frequently to give evidence in the law courts and coroners' courts and we hope that in future they will always elect to take the oath in an unobjectionable form, thereby accustoming the courts to its regular use.

PRESENCE OF THE TYPHOID BACILLUS IN THE MILK OF A WOMAN SUFFERING FROM ENTERIC FEVER.

In the Boston Medical and Surgical Journal of July 29th Dr. C. H. Lawrence has reported a case in which he found the typhoid bacillus in the milk of a woman suffering from enteric fever-an observation which does not appear to have been previously made. The patient was a woman, aged 23 years, who was admitted to the Massachusetts General Hospital on May 13th with the diagnosis of enteric fever. She was nursing a baby of the age of three months. Four days previously she became ill with fever, headache, chilly sensations, and slight abdominal pain. On admission the temperature was 101.8° F., the pulse was 108, and the respirations were 26. Examination of the blood showed that the white corpuscles numbered 4800 per cubic millimetre. The spleen was enlarged. A few râles were heard at the apices of both lungs. The breasts were tense and full of milk, but not reddened or tender. The Widal reaction was negative, but became positive 18 days later. A blood oulture made on a bile medium showed a motile bacillus which was identified as the typhoid. A culture was taken from the milk in the following manner. The breast and nipple were carefully washed with soap and water and boric acid solution. About five cubic centimetres of milk were withdrawn into a clean breast pump and transferred to a tube of sterile ox-bile. This was incubated for 18 hours and a transfer was made to a bloodserum slant medium. After six hours in the incubator an actively motile bacillus was found in the water of condensation. This organism gave the cultural characters of the typhoid bacillus and was agglutinated by the serum of a patient known to be suffering from enteric fever. As the patient's baby showed no signs of illness, the exact significance of the presence of the typhoid bacillus in the milk of a nursing woman remains undetermined. The positive Widal reaction obtained with the serum of infants who have

been nursed by mothers suffering from enteric fever may explain the fact that in the majority of cases the child fails to contract the disease. On the other hand, it is possible that in some cases the reaction is not strong enough to protect the child, and the present case suggests a mode in which nursing infants may contract typhoid fever. We may point out that though Dr. Lawrence's observation appears to be new, the presence of the typhoid bacillus in the blood in enteric fever (probably in all cases) and its presence in another secretion—the urine (in many cases)—favour the conclusion that it should occur in the milk.

MEDICAL ENDOWMENT OF LIBRARIES.

THE National Library of Wales was incorporated by Royal Charter on March 19th, 1907, and a site for the building was given by Lord Rendel consisting of four acres of land close to Aberystwith, which land was handed over to the council of the library by deed of gift in May, 1908. A report dealing with the progress of the library from the granting of the charter up to March 31st, 1909, has been issued, and it is evident that the library is growing both rapidly and wisely. The nucleus of the library consists of certain Welsh printed books and MSS. hitherto kept at the University College. These were transferred to the temporary buildings of the library in February of this year. In addition to this collection the National Library is now in possession of the valuable library which was gathered together by Sir John Williams. and presented by him on Dec. 11th, 1908. Sir John Williams not only formed his collection by the purchase of separate books and MSS., but he was also enabled to enrich it by the purchase of other libraries and collections of MSS. Among the latter are the Hengwrt and Peniarth manuscripts originally in the possession of the Wynnes of Merionethshire. This collection began to be made by Robert Vaughan, 1592-1666, and contains over 500 MSS. in Welsh, Cornish, English, and Latin. Among the Welsh MSS. is the celebrated "Black Book of Carmarthen," which was compiled or composed between 1195 and the thirteenth century in the priory of St. John at Carmarthen. The contents are poems dealing with mythology, religion, history, and literature. Another fine Welsh MS. is one of the history of the Holy Grail. Of the two MSS. in the Cornish language one is unique, being a Cornish mystery written in 1504, and among the English MSS. is one of the Canterbury Tales circa, 1420. Sir John Williams also presented the Shirburn and Parry Llanarmon libraries. Among the treasures of the former is the first book ever printed in Wales, a work on tobacco printed in Trehedyn in 1718. Of books collected by Sir John Williams himself are a valuable set of Welsh Bibles and Prayer-Books, and a series of the works of Henry Vaughan, mystic and medical man. The literature of the Arthurian Romances is also widely represented. It is given to but few medical men to have the means or the leisure for so handsomely endowing the scholarship and "humanities" of their native lands, and Wales may well be proud of her learned and generous son. The report before us does no more than indicate the composition of the library, and we await with interest the publication of the detailed catalogue. Another library which owes its inception to a medical man is the free library of Bethnal Green, which was founded by the late Dr. William Tyler, who sacrificed the ease which a considerable competence would have assured him for a life of unselfish service to the poor. He saw the value of ministering to their minds as well as to their bodies, and his library attracted the notice of the late Queen Victoria as well as of the King and the Prince of Wales, all of whom have contributed to its shelves, which now contain 38,000 books.

We understand from the librarian that his council had to face an adverse balance for several years and is appealing for £10,000 to place the library's work on a sure footing. In support of this appeal it is stated that the institution is not only well used by readers of all creeds, but it is of special importance to skilled workmen in matters of design, and the London County Council school children and their teachers resort to it. Institute work is also carried on at the library, the work embracing free lectures and concerts and evening classes. We are glad to learn that Dr. Tyler's intentions have been so well fulfilled and trust that the desired endowment may be forthcoming.

THE EFFECTS OF RADIUM ON CANCER CELLS.

AT a meeting of the Société Médicale des Hôpitaux of Paris on July 23rd M. H. Dominici and M. Rubens-Duval read an important paper on the Histological Effects of Radium on Cancer Cells. The tumours were exposed to the hard penetrating rays of radium (rayons ultrapénétrants) by the method introduced by M. Dominici of filtering off the softer rays by metal screens which was recently described at the Royal Society of Medicine by M. Louis Wickham. 1 M. Dominici, in collaboration with M. Barcat. has shown that cancer cells which are amenable to radium therapy undergo direct or indirect destruction. Direct destruction consists in necrobiosis of the cells without previous morphological changes. The radium acts as an extraordinarily subtle caustic, producing what M. Gaucher has termed "cellular eschars." Indirect destruction is preceded by the following changes: (1) hypertrophy of the nucleus and body of the cell; (2) budding of the nucleus; and (3) increase in number and size of the so-called "pseudo-parasitic bodies." Glandular cancers, for example, cancer of the breast, undergo these changes, but in cancers originating in the Malpighian layer of the skin an additional change frequently occurs-horny transformations of the protoplasm. Thus a sort of abnormal maturation of the cells occurs. This shows that radium is capable of exercising an influence on the evolution of cells. The following are examples. A woman, aged 77 years, was admitted into hospital in June, 1908, for congestion of the lungs supervening on chronic bronchitis. She also had an ulcerated cancer of the breast. The ulcer was gangrenous and suppurating, and of the extent of 80 square centimetres. The nipple was almost entirely destroyed and scarcely visible at the lower part of the ulcer, where it rested on an indurated mass of growth adherent to the pectoralis major. To the surface of the ulcer was applied an apparatus 6 centimetres in diameter on which were spread 5 centigrammes of pure sulphate of radium, and on this were imposed four pieces of linen, each impregnated with 1 centigramme of pure sulphate of radium. The radiferous apparatus was enclosed in a leaden case 2 millimetres thick, to which were added screens of paper 2 or 3 millimetres in thickness. The whole was enclosed in indiarubber and separated from the tumour by four or five layers of muslin and left in place for 166 hours. Three or four days after the termination of the treatment much serous discharge occurred and was followed by a healthier condition. The gangrene disappeared and the ulcer became of a rosy colour. Six weeks after the application a cicatricial band appeared and spread in a centripetal manner until about half the ulcer was covered. The tissue subjacent to the cicatricial band, which at first was indurated, gradually softened, until in September the tumour was reduced one-half, both in surface and in depth. A further application of radium was proposed, when the patient succumbed to an exacerbation of the pulmonary congestion. At

the necropsy no metastasis of the growth was found. was supposed, the tumour was found to be reduced not only in surface but in depth, and, so to speak, had abandoned the region subjacent to the superficial epidermisation. Its place was taken by normal adipose tissue, excepting small scirrhous bands in which fibrous considerably preponderated over epithelial tissue. Further, the tumour appeared to be separating from the pectoralis major, which it infiltrated only for a depth of 1 or 2 millimetres. The structure of the tumour was found to be profoundly changed by comparison of sections made before treatment and after death. Before treatment the tumour was composed of masses of large cuboid epithelial cells with round nuclei separated by fibrous bands. After death the epithelial growth was so reduced that in areas of from 20 to 30 square millimetres it was represented only by a few widely separated cells. The cells were for the most part hypertrophied and contained an enormous budding nucleus and sometimes enlarged pseudoparasitic bodies. M. Dominici and M. Rubens-Duval also examined three epitheliomata (one of the cervix uteri and two of the lips) treated by radium. The epithelial cells underwent horny transformation, and when this was complete their vitality was lost, and, like foreign bodies, they were destroyed by phagocytosis.

CHINESE PORK.

At the beginning of September several questions were asked of the President of the Local Government Board in the House of Commons as to the wholesomeness of certain batches of pigs' carcasses imported into this country from China for food. Mr. Burns replied that the carcasses were being inspected in the usual manner as they arrived and that the chief medical officer of the Port of London Sanitary Authority was paying special attention to them. He said further that any pork found to be unsound would be condemned in the ordinary course, whatever its port of origin. Dr. Herbert Williams, the medical officer in question, has now presented a report to the Court of Common Council, in the course of which he states:—

the course of which he states:—

On July 24th the s.s. Palermo arrived from China with a general cargo comprising 4663 pig carcasses, pigs' casings and, bladders, chickens, ducks, mallards, plover, bustards, pigeons, geese, snipe, teal, cockerels, and hares. The importation of pigs from China had received considerable publicity in the press, and from questions asked in Parliament, chiefly owing to the apprehension that these pigs might be the wild variety which frequents the streets and public places of Chinese towns, living as scavengers on the food they can pick up in that way. The importer stated that the pigs in question had been bred in the country and fed on rice, and the President of the Local Government Board appears to have confirmed this statement by reference to the British Consul at Hankow. The pig carcasses on arrival were found to be very large and fat, and each one had a label attached to it which indicated that it had been subjected to a medical examination at the port of shipment. It has been stated that Chinese pigs are very prone to contain the parasite which gives rise to the condition known as trichinosis. I therefore selected 100 pigs at random and removed portions of the diaphragm and other muscular tissues, and examined the same microscopically without, however, finding anything which was at all indicative or suspicious of trichinosis.

It is obvious that all proper precautions are being taken in

It is obvious that all proper precautions are being taken in respect of this source of food-supply. No pigs are clean feeders, and probably it was on account of their objectionable habits of "nosing" for food in any filth that their flesh was forbidden to the children of Israel in the oldest sanitary code known to history. But nowadays we have got over the objection to partake of the flesh of any animal which is not a "clean feeder," recognising that in certain instances the alchemy of the living tissues can transform garbage into healthy flesh and blood. Indeed, in the ultimate analysis all our food is built up of molecules derived from decayed and "offensive" matter, re-created by the mysterious processes of the metabolism of the vegetable world into wholesome and necessary foodstuffs. But even though this be the case there is a natural and decent revulsion against the flesh of animals that have fed on excrement, and there is a strong scientific sanction for such a feeling when the of years, and, in fact, an increase in the amount of valuable

animals in question come from a country where a human intestine without its parasite is a rarity. In the case of these Chinese pigs, however, we may reasonably accept the word of the importer, substantiated by Dr. Williams's investigations, that they were reared under conditions of ordinary cleanliness and fed upon wholesome food.

MEDICAL STORIES.

As will be seen by our advertising columns, the editor of the Strand Magazine is offering a prize for the best medical story to be written by a qualified medical man and to be "either fact or fiction." If any of our readers are moved to compete for this prize we suggest they should exercise all discretion in the event of an attempt to employ special personal experience as material for the story. There can be no harm in a medical author drawing upon his general knowledge, but he has certainly no right whatever to repeat in the form of fiction what has found its way into his case-books as fact. We shall be interested to see what the prize story reads like, for stories of medical interest in popular magazines, when written by persons untrammelled by medical knowledge, are invariably mixtures of absurdity and error. Will a medical practitioner, whose invention and imagination must be kept in subjection to his technical knowledge, be able to write a readable story? Whoever does this will be a considerable master of composition, for his suppressions will have to be as artful as his statements. We may add that the author can use a pseudonym.

THE FUTURE OF PHARMACOGNOSY.

THE address delivered by Dr. Tschirch, professor of pharmacognosy and practical chemistry in the University of Berne and the Hanbury medallist for 1909, on the occasion of the reopening of the Pharmaceutical Society's School of Pharmacy on Sept. 29th serves to show what a rich and interesting field of research is offered by pharmacognosy and how many are the problems susceptible of scientific treatment and capable of yielding results of direct practical utility which remain unsolved. While the main purpose of Dr. Tschirch's address was to indicate a few of these problems, it also dealt with the interesting subject of the cultivation of drugs and entered the field of prophecy as to the remedies of the future. We may, said the lecturer, assuredly hope that medicine, when it has thoroughly ruined its digestion with synthetical remedies and tested all the organs of the animal body, will return once more to drugs and will employ them to a greater extent than it does at present. It will return once more to the most ancient remedies of mankind, to the medicinal plants and drugs, for the utility of which the experience of thousands of years vouches. In approaching the subject of the cultivation of drugs, he said that when we had discovered the active constituents, and by the method of analysis made ourselves as thoroughly acquainted as possible with the composition of the drug, we could then proceed to the solution of the problem: "In what way is it possible by suitable cultivation to increase the amount of this or that constituent of a medicinal plant and to diminish the quantity of any other constituent that may appear to be an undesirable admixture?" What he had in his mind was the utilisation of the results of pharmaco-chemical investigations as a basis for physiological researches. experience gained in the cultivation of cinchona trees made the attainment of definite results appear very possible, as, for instance, the production of an opium poor in narcotine, or of a cinchona bark rich in quinine, but containing only small quantities of the other alkaloids. Similar experiments have been made for thousands

constituents has been effected in the case of almost all cultivated plants. He was strongly opposed to the belief that cultivation impaired a medicinal plant and that wild ones are always and without exception the better, and insisted that it was unsuitable cultivation only that produced such bad results. He was convinced that by variation of the conditions of cultivation, by careful selection of suitable strains by crossing, grafting, and other means, brilliant results would be obtained and the object in view ultimately reached. It was easy to understand Tunmann's demand that an experimental garden, in which pharmaco-physiological experiments could be systematically conducted, should be attached to every pharmacognostical institute, for the required knowledge would have to be acquired under such conditions. Proceeding to refer to some of the unsolved problems of pharmacology, he said the fields which were open to pure pharmacognosy and were capable of experimental treatment were very numerous and very varied. In most of them the first sod had only just been turned. In this connexion he alluded to the methods of preparing harvested drugs, especially the so-called fermentation, which must assuredly be systematically investigated, if possible, in one of the tropical laboratories. We are as yet but very imperfectly acquainted with the chemical reactions involved. We do not know either the nature or the extent of the part played by the ferments. At the present time the whole process of the fermentation of tea, cocoa, and vanilla is conducted on a wholly empirical basis, and the result depends more or less on chance, which will remain the case until we have learned how to place this process on a scientific basis and to conduct it rationally. Other problems are to be found in the study of physiological varieties and the substances they produce. We are still, to mention one instance only, ignorant of the reason why the balsam of the Tolu tree, which is scarcely to be distinguished botanically from the balsam of Peru tree, should yield such an entirely different product. These are only a few of the many problems of pharmacognosy which are susceptible of experimental treatment to which Dr. Tschirch alluded.

THE DEVELOPMENT OF PUBLIC HEALTH WORK IN TASMANIA.

THE creation of a public health department for a scattered population of 179,000 persons must have been an arduous task, and the fact that considerable opposition had to be encountered increases our respect for the business capacity of the organiser. The population in question consisted of the inhabitants of the island of Tasmania where the department came into existence on Jan. 6th. 1904, under a Public Health Act which had passed the legislature late in 1903. The Government at the same time appointed Dr. J. S. C. Elkington to be chief health officer in whom the central powers of administration were vested. Up to that time the executive sanitary authority, if such it could be called, had been the Central Board of Health which did not employ either a medical officer or a sanitary inspector. No laboratory existed and the disinfecting apparatus, apart from what had been improvised during a recent epidemic of small-pox at Launceston, comprised a couple of formalin lamps and a small stock of chemicals. The library consisted of one book on sewage disposal and an old set of Tasmanian statutes. The port health inspection of over-sea ships was entrusted to pilots or harbour masters, and the maritime quarantine station was a remarkable example of structural defects. The heavy cost of the small-pox outbreak and the efforts of opponents to sanitary reform rendered Parliament disinclined to incur the further outlay required for effective equipment and maintenance, but it fortunately happened

that the Minister of the day was a medical man and the Tasmanian medical profession gave much support to a system of reform. The population of 179,000 persons was at the time divided up under some 73 local authorities, 28 of which existed in name only, without any officers or organisation, and some had never held a meeting. the remaining 45 local authorities only 16 had officers of health, and 26, whose districts included towns of 500 inhabitants and over, had no system of night-soil disposal. A reorganisation of these local authorities was commenced in 1905, and at present the local sanitary administration outside the two cities (Hobart and Launceston) is vested in 49 municipal councils which possess extensive powers of sanitary rating and administration. 1906 an investigation was made into the physical condition of some 1200 State school children at Hobart by Mr. A. H. Clarke and Dr. Elkington, and in the ensuing year a. system of medical inspection of schools for Tasmania was. introduced, but food inspection, being left by the Act entirely to local authorities, is practically a dead letter. The cost of central sanitary administration has averaged a little more than 2½d. per head of population per year. In conclusion, Dr. Elkington says that the work of his department has received the generous and hearty support of the Government whenever financial exigencies have permitted it; he also believes that the great majority of local authorities now admit that the requirements of the department are reasonable. The equipment at the disposal of the central authority now consists of a fairly well fitted-up bacteriological laboratory, a reference library of several hundred volumes, a portable steam disinfector, and apparatus for disinfection on a larger scale. A sanitary inspector has also been appointed and all over-sea vessels are visited by medical officers before receiving pratique. It is evident that public health questions have become better understood in Tasmania during the last six years.

ADRENALIN AS AN EMERGENCY TREATMENT IN CERTAIN FORMS OF NON-CORROSIVE POISONING.

WE have received a reprint of a paper published in the Intercolonial Medical Journal of Australasia of July 20th by Mr. Judah L. Jona recording some observations on the use of adrenalin as a means of delaying the absorption of certain rapidly acting poisons, and thus giving longer time for the effective use of the recognised antidotes. The antidote for poisoning by cyanide generally recommended is that advocated by Professor C. J. Martin and Mr. R. A. O'Brien, which consists of 30 cubic centimetres (1 ounce) of a 23 per cent. solution of ferrous sulphate, 30 cubic centimetres of 5 per cent. solution of caustic potash, and 2 grammes (30 grains) of magnesia. The first two solutions should be kept in hermetically sealed phials. It is recommended that the three substances should be mixed when required and immediately taken. The principle of the method is the formation of Prussian blue, which is practically innocuous. In observations on rabbits Professor Martin and Mr. O'Brien found that using a lethal dose death invariably occurred unless the antidote were administered within five minutes of the poison. Mr. Jona rightly points out that in a rapidly acting poison like cyanide of potassium, even in very favourable circumstances, more time than this may elapse before the antidote can be prepared and given. Exner has shown that intraperitoneal injections of adrenalin diminish the rate of absorption of strychnine introduced into the stomach, and Mr. Jona therefore decided to try whether adrenalingiven by the mouth would exert a similar effect. He first demonstrated that adrenalin could exert its vaso-constrictor action after the arteriolar wall has been subjected to the action of cyanide of

potassium, and then studied its effects upon rabbits poisoned by the cyanide. He was able to bring about recovery after longer periods than in rabbits which had not received adrenalin. He recommends the following procedure for cases of cyanide poisoning in man. Adrenalin should be given immediately, 9 cubic centimetres (i.e., 3 drachms) of the 1 in 1000 solution diluted to 90 cubic centimetres being used; then Professor Martin and Mr. O'Brien's antidote if available. The stomach should then be washed out and a further dose of about 5 cubic centimetres (1½ drachms) of 1 in 1000 adrenalin solution diluted to 50 cubic centimetres should be given. A brisk saline purge is also recommended to be administered soon afterwards. Professor Martin and Mr. O'Brien found in their experiments on rabbits that if death did not take place within 30 minutes of administering the cyanide recovery occurred. Some experiments made with strychnine followed by adrenalin gave similar results, the adrenalin obviously retarding the absorption of the strychnine, and enabling the animals to be treated with greater success. These experiments, which were carried out in the Physiological Laboratory of the University of Melbourne under the direction of Professor W. A. Osborne, have an obvious practical application, and, as Mr. Jona points out, there is no reason why adrenalin should not be as efficacious in the case of other non-corrosive poisons. In the treatment of rapidly acting poisons it promises to be an adjunct to the ordinary treatment of considerable value, and it should certainly find a place in the list of antidotes, and should be kept handy by all medical practitioners who have to treat emergency cases. We are glad to give further publicity to a well-conceived and useful piece of work.

WASSERMANN'S REACTION IN CHILDREN WITH HEREDITARY SYPHILIS.

An interesting paper recording some observations on Wassermann's reaction in the children of syphilitic parents is contributed by Dr. W. Knopfelmacher and Dr. H. Lehndorff of Vienna to the Wiener Medizinische Wochenschrift of Sept. 18th. It has been already established that in an infant with a recent rash Wassermann's reaction gives a positive result almost without exception. Children born of a syphilitic mother and subsequently developing syphilitic symptoms often give a negative reaction at birth but develop a positive one at the time of the appearance of the exanthem. The recent observations were made upon 33 children with hereditary syphilis and 11 apparently healthy ones whose mothers were syphilitic or whose older brothers and sisters had come under observation and treatment. writers summarise their conclusions as follows. Children with hereditary syphilis give almost invariably a positive Wassermann's reaction at the time of the rash and often many months after its disappearance. Older children with hereditary syphilis show a positive reaction even more frequently than adults with acquired syphilis in a late stage, and the reaction often remains positive in children suffering from the disease in spite of energetic treatment. That antisyphilitic treatment of the mother during pregnancy can result in the birth of a healthy child is confirmed by the negative result of the reaction in such children. Syphilitic women with a positive reaction can bear children with permanently negative reaction. These children are free from syphilis, and they may be quite healthy or show various defects. In two instances a woman who has previously had several syphilitic children has borne children are to be regarded as latent syphilitics. On this basis Profeta's law (immunity of the healthy children of a child which has remained healthy in the first years of life

syphilitic mothers) finds its explanation on the ground of latent syphilis in the child.

THE Conjoint Examination Board of the Royal Colleges of Physicians of London and Surgeons of England has acquired a site for the erection of the new Examination Hall in Queen's square, and the plans for the erection of the building are now under consideration. The building will not be completed for at least two years, and in the meantime arrangements have been made by the Royal Colleges to continue in the occupation of offices and examination rooms at the Examination Hall on the Victoria Embankment, the entrance to which is on the west side of the building, facing the Savoy Hotel.

THE King has been pleased to appoint Mr. Thomas Hastie Bryce, M.A., M.D., to be Regius Professor of Anatomy in the University of Glasgow, and Mr. John Marnoch, M.A., M.B., C.M., to be Professor of Surgery in the University of Aberdeen, both appointments bearing date Sept. 18th.

THE annual medical service of the Guild of St. Luke at St. Paul's Cathedral will be held on Wednesday, Oct. 20th, at 7.30 P.M., when the preacher will be the Rev. Fr. Waggett, S.S.J.E. Further particulars can be obtained from Mr. C. St. Aubyn-Farrer, 1, Harley-street, W.

PLAGUE is increasing in Mauritius. A telegram received from the Governor by the Secretary of State for the Colonies stated that 15 cases of plague with 10 deaths were reported during the week ending Sept. 23rd.

THE HOUSING AND CONTROL OF NAVVIES.

ONE of the most noticeable features of the development of public health administration is the manifold subjects with which it concerns itself, and at the present time it appears to be steadily and surely extending its operations in such a fashion as to embrace social and philanthropic questions which even one decade earlier would have been regarded as exclusively the function of the clergyman or social reformer. But no one conversant with the condition of the poorer classes can doubt that in the improvement of their general social condition we have a more potent weapon for good than in the limited operation of the Public Health Acts, and history, of course, teaches that it was the work of social reformers, such as Lord Shaftesbury, which led to the passing of many of the statutes which now govern public health administration. It is interesting to see the Central Health Department devoting, through its medical inspectors, much time and thought to the social conditions of the navvy who has not many friends and who is in large part outside the scope of the general operations of the Public Health Acts. 1

The public as a whole are not perhaps fully aware of their obligations to that somewhat nomadic tribe which we speak of as navvies, although it is to them that we owe in large part the actual construction of our railways, our waterworks, our tunnels, and a host of other public works with which there is associated in the public mind merely the name of the engineer or the contractor. who performed the rough and manual labour in circumstances far from satisfactory are given but scanty attention. As Dr. Reginald Farrar tells us in his recent report to the Local Government Board, "navvies move about from one public work to another, a distinct class or tribe separated by habit or circumstances from the rest of the community," and it is estimated that in this country navvies and their families

amount to about 100,000 persons. It is, of course, possible that what may be termed the public health side of this class is not of paramount importance, although in times of small-pox prevalence they may undoubtedly by their habits and ignorance play a by no means negligible part in the spread of that disease. A perusal of the report before us suffices to show that the main problem connected with the navvy is a social rather than a public health one. the early days of railway construction there was frequently no housing accommodation for these men; "many slept in sod huts which they constructed for themselves; wages, about half-a-crown a day, were paid at fortnightly, or in some cases monthly, intervals, and most contractors kept provision stores and paid men partly in food tickets, sometimes even forcing them to take a percentage of their pay in beer." As has been the case in so many instances in other public health problems, a Select Committee of the House of Commons took evidence and reported as far back as July, 1846, that the navvies were crowded into unwholesome dwellings with little provision either for their comfort or decency of living; they were exposed to great risk of life and limb, and there were inducements to the men to become thoughtless, thriftless, and improvident, while the committee could not wonder at the "feelings of dislike and dismay with which the permanent inhabitants of a neighbour-hood often view the arrival of these strangers amongst But there the legislature appears to have left the them. matter, and the improvement which has subsequently taken place has, Dr. Farrar tells us, been due to the growth of philanthropy, pressure of public opinion, and the influence of such bodies as the Navvy Mission Society. Nevertheless the report of the committee is still to some extent applicable to existing conditions, and Dr. Farrar shows that there is still a very great deal to be done before the public health authorities can rest satisfied that elementary justice has been done either to the navvies or the public.

There is apparently some sort of combination amongst the navvies themselves, and a deputation from the Mission Society recently waited upon Mr. Burns to protest against the employment of local unemployed to the exclusion of regular navvies, a position which presents considerable difficulty for local authorities who undertake works for the special relief of local out-of-works. It is in the main the navvies employed in connexion with the relatively smaller undertakings who need protection, because it is on these works that the amount of profit may be small and the contractor may be indisposed to make provision for the comfort of the men. But need for regulations is in no sense confined to the smaller works, and we are told that there are at present many works on which scores or hundreds of genuine navvies are "sleeping rough" night after night. When pipe tracks are being laid the men have slept night after night in the pipes themselves, and it is thought that some hundreds of navvies regularly seek sleep in hay-stacks, straw-yards, and cowsheds, or even in hen-houses and pigstyes, and, as Dr. Farrar says, "life under these conditions is conducive to physical ill-health and moral deterioration.

But through all these difficulties there are unmistakeable signs that what may be termed the natural law of supply and demand is in itself bringing about a better state of affairs, much in the same fashion as is the case with the housing problem in the country as a whole. We are told that a contractor who provides proper lodging for his workmen can attract and retain a sufficient number of competent men, and that the services of strong, steady, and respectable navvies are greatly in demand. On the other hand, a contractor who makes no proper provision has to put up with men of an inferior stamp, who are content to "sleep rough" in the fashion above referred to. It is instructive, and in a sense consoling, to hear that when public funds are being spent, as was, for instance, the case in works constructed by the Derwent Valley Water Board, where there was no question of private profit for the undertaker, and no temptation to save money at the expense of the labourers' comfort, the conditions were satisfactory.

Dr. Farrar calls attention to many reforms which are not only of public health import but which relate to problems of Poor law and unemployment, and he points, amongst other things, to the need for discrimination in the casual ward between the loafer and the genuine work-seeker in order that the latter may be liberated sufficiently early in the day to | probably effect a saving of over £6000 a year.

enable him to pursue his quest with more hope of success than if he is retained to perform the usual task. criticises adversely what is known in navvy parlance as "subbing"—that is to say, the practice of paying daily instalments of wages in place of the whole wage weekly or fortnightly. The daily "sub" is conducive both to thriftlessness and inebriety and tends to deprive the family of its proper weekly allowance. The need for a labour exchange and for cheap railway fares are amongst the other points dealt with in the report, which concludes with the following series of very reasonable recommendations:—

1. That every corporate body or contractor intending to commence works of public construction involving the employment of navvies in any district, on which any number of workmen exceeding 100 not previously resident within three miles of the works shall be employed, should be obliged to notify the Local Government Board, and also the county council, or the sanitary authority of the district, as may be hereafter determined, of such intention, not less than 14 days before the commencement of such works, indicating the general scope and the probable duration of such work, and approximately the number of workmen it is intended to employ. If at any date subsequent to the commencement of the work a larger number of workmen shall be employed than were specified in the original notification, a further notification specifying approximately the number of such workmen should be made as above. On the completion of such works the central and local authorities should again be notified.

2. That such works should from time to time be open to inspection

2. That such works should from time to time be open to inspection by inspectors of the Local Government Board.

3. That contractors should endeavour to arrange with the railway companies for the granting of specially cheap fares to workmen.

4. That workmen should, if necessary, receive instalments of their wages during the first fortnight of their employment, but that after this time wages should be paid weekly, and that no contractor should advertise "Sub Daily," or words to that effect, as an inducement to attract labourers to any work.

advertise "Sub Daily," or words to that effect, as an inducement to attract labourers to any work.

5. That any contractor or employer of labour on works of public construction who shall employ on such works any number of workmen exceeding 100 not previously resident within three miles of the works should, except as hereinafter provided, and unless sufficient and satisfactory accommodation already exists in the neighbourhood, be obliged to provide accommodation for such workmen to the reasonable satisfaction of the county council or the district council as may be hereafter determined. The temporary buildings to be provided should, unless the duration of the work is likely to be very short, include buildings sufficient for the isolation of cases of infectious disease that may occur among the workmen or their families. Temporary buildings provided for the accommodation of workmen should be registered by the county council or the district council, and should be open to inspection by persons duly authorised by either of these bodies. If, however, temporary buildings be erected within three miles of any part of the works, for the accommodation of workmen employed on such works, by private persons other than the contractor or employed to such works, by private persons other than the contractor or employed to council, be accepted in lieu of provision made directly by the contractor or employer, but should be subject to the same conditions as to the character of the accommodation provided, registration, and inspection as if they were provided by the contractor or employer. or employer.

6. The medical officer of health for the district should, when such o. The medical officer of neath for the district should, when such temporary buildings are first erected, and afterwards from time to time, examine and report to his council whether in respect of construction, lighting and ventilation, water-supply, drainage, and excrement and refuse disposal those buildings are of a satisfactory character, and whether the cubic accommodation of the sleeping apartments is such as to afford not less than 300 cubic feet of free airspace for each occupant.

7. The provision of the necessary temporary buildings should, unless the duration of the work is likely to be very short, be held to include the provision of a suitable room for purposes of recreation.

8. Temporary shods in which meals can be taken and food warmed should be provided on all works.

9. On all works on which more than, say, 200 men are employed a canteen should be provided in which light refreshments and non-intoxicating liquors may be sold. If intoxicating liquors are sold in such canteen the manager should receive no profit on and have no interest in the sale of such liquors.

10. No intoxicating liquors should be allowed to be sold in any temporary building other than the authorised canteen.

11. A clause requiring the provision of accommodation on the lines above laid down should as far as practicable form part of all contracts and all Acts of Parliament authorising public works of construction.

NEW INFIRMARY FOR THE CITY OF LONDON.new workhouse infirmary was opened by the guardians of the City of London on Sept. 25th. The building, which is situated at Homerton and will replace the Bow Infirmary, will accommodate 681 inmates and 63 officers and has cost nearly £60,000; it includes a block for lunatics. The Rev. T. Greear, chairman of the board, who unlocked the door of the building with a gold key, and afterwards unveiled a commemorative tablet, made a speech in which he pointed out that the increase of commercial life in the City had resulted in a great diminution in the number of people for whom Poor-law provision must be made, and that the present amalgamation of Homerton and Bow workhouses would

REPORT OF THE MEDICAL INSPECTOR OF PRISONS FOR THE YEAR 1908-09.

In his report to the Commissioners of Prisons for the year ending March 31st, 1909, the medical inspector, Dr. Herbert Smalley, is able to give a very satisfactory account of the sanitary condition of the prisons and of the health of the inmates.

During the year 205,681 prisoners were received into the local prisons, being an increase of 9448, as compared with the previous year; and the daily average number under detention amounted to 18,923, the figure for 1907-08 being 17,719. The total number of deaths during the 12 months was 123-99 of males and 24 of females. Of this number 91 were due to natural causes, which, in terms of the number of prisoners received, gives a death-rate of 0.41 per 1000, the average for the preceding 25 years being 0.54 per 1000. It is interesting to note in connexion with the lurid statements which have recently been made regarding the health of prisoners in Holloway that the deaths at that prison from natural causes during the year amounted to four, being thus at the rate of 0.32 per 1000 of the prisoners admitted to that institution. Of the deaths from non-natural causes, 16 were due to judicial hanging, 14 to suicide, one to accident, and one to the effects of poison taken prior to the prisoner's reception into gaol. The number of suicides is somewhat higher than it has been for the last few years.

Twenty-seven cases of infectious disease were notified during the year, comprising 14 cases of erysipelas, five of enteric fever, three of diphtheria, two of measles, two of scarlet fever, and one of puerperal fever. All the cases were sporadio, and in most of them the infection was clearly contented before reconting into micro. The The number of tracted before reception into prison. prisoners released on medical grounds during the year was 111—32 males and 79 females. As usual, the chief reason for release was advanced pregnancy (70 cases); in most of the other cases the prisoners were suffering from diseases requiring surgical intervention. 135 prisoners—97 males and 38 females—were certified insane in the local prisons, the average for the last ten years being 133.4. In considerably more than half the cases the prisoners showed indications of insanity when received into prison. There were also 323 cases of insanity of remanded and other unconvicted prisoners (226 males and 97 females) dealt with during the year, including 24 males and 10 females found "insane on arraignment," and 161 males and 77 females found insane on remand from police or petty sessional courts. If details could be given in the tables concerning these cases as is done with regard to insanity in convicted prisoners, the information would probably be of much interest both from the medico legal and from the psychological point of view. 259 prisoners were reported as being so feeble-minded as to be unfit for the usual penal discipline, this number being a good deal less than for the past two or three years. The cause of this decrease does not appear to be very plain, but Dr. Smalley suggests that one reason may be that magistrates are more alive to the significance of minor degrees of mental defect as qualifying criminal responsibility, and are, therefore, less disposed to commit feeble-minded persons

to gaol.

In the convict prisons during the year the daily average number under detention was 3106—2975 males and deaths from natural causes, giving a death-rate from such causes of 5.9 per 1000 of the daily average population, as compared with 6.5 in the preceding year. Three deaths were ascribed to pulmonary tuberculosis, the mortality from that disease being thus a shade under 1 per 1000 of the daily average number of prisoners. 23 convicts, all of them males, were certified insane.

The large amount of attention and criticism which has recently been given to the existing methods of dealing with the various categories of socially unassimilable persons has led Dr. Smalley to devote part of his report this year to a very interesting survey of the effects upon the medical administration of prisons which would probably follow from the adoption of all the important proposals which have been a very interesting survey of the effects upon the medical administration of prisons which would probably follow from the adoption of all the important proposals which have been put forward by the Royal Commission on the Feeble-minded, the Poor-law Commission, and the Departmental Committees on Vagrancy and on Inebriety. These several inquiries have all a rate was 13.4 per 1000, to County Clare, where it was 14.4

confirmed the opinions expressed by the prison authorities, and with special force and clearness by Dr. Smalley himself, as to the large proportion of persons of weak intellect amongst the petty offenders, tramps, and habitual drunkards who form so considerable an element in the prison population. If the suggested reforms are carried into effect, and if these feeble-minded persons are segregated in special institutions under medical control, it is estimated that the alteration would remove from the prisons at least 3 per cent. of their present inmates, and possibly a proportion even three or four times greater. And, of course, if the specific proposals regarding inebriety and vagrancy are adopted in such shape as to enable other and more appropriate methods than imprisonment to be applied to tramps and drunkards who are not weakminded, the result on the prison population will be enormous —how enormous we may readily imagine when we remember that one fifth of the males committed to gaol are sent for begging, sleeping out, or Poor-law offences, while over half the women prisoners and nearly a third of the men are convicted for drunkenness. The advantages from the point of view of prison administration of elearing out from the prisons the drunkard, the tramp, and the imbecile would be obviously very great; such a change, as Dr. Smalley points out with reason, by allowing prisons to be used exclusively for the treatment of the criminal, would greatly facilitate the extension of those methods of individualisation in treatment, of the value of which the success of the Borstal system is already giving proof.

ANNUAL REPORT FOR 1908 OF THE REGISTRAR-GENERAL FOR IRELAND.

WE have received the forty-fifth detailed annual report of the Registrar-General for Ireland, a document which is full of interesting information respecting the causes of mortality and its incidence on various localities and on sections of the population. This report was presented to the Lord Lieutenant on July 5th last. The members of our profession in the sister isle will therefore doubtless be grateful to Sir Robert Matheson for the promptitude with which he has placed at their disposal information that must prove helpful to practitioners generally, whilst to those who are locally responsible for the state of the public health it is obviously indispensable. Sir Robert Matheson attributes the early appearance of his report in great measure to the exertions of his medical colleague, Dr. Ninian M. Falkiner, who has personally analysed the causes of death and completed the tables at the earliest possible moment, thereby greatly enhancing the value of the vital statistics for purposes of public health. We hope that the authorities at Somerset House will follow the example of their Irish colleagues, so that the reports of the English Registrar-General may in future be issued in time to be really serviceable for administrative purposes.

In recent years the population of Ireland appears to have been almost stationary; but inasmuch as the "natural increase" of the population, by excess of births over deaths, was greater last year than the loss by emigration, the Registrar-General estimates that, as compared with the previous year, there was an increase of 1853 in the numbers living in Ireland. The rates of marriage and of birth were slightly above the decennial averages, whilst the death-rate was below the average by 0.2 per 1000 living. As in previous years, the present report contains instructive particulars of mortality in the different social grades of the people. Among the families of the professional and independent class the mortality last year was equal to a rate of 14.4 per 1000 living in that class; among the middle class it was 15.9; among artisans and petty shopkeepers it was 17.6; whilst among the general service class it was 22.8 per 1000. We trust that at the forthcoming census steps will be taken to provide for the calculation of similar social statistics for England and for Scotland likewise.

per 1000. Of the total deaths registered in Ireland, 14.7 per cent. occurred in workhouses, and 4.3 per cent. in infirmaries or ho pitals. In the section dealing with the causes of mortality it is stated that 25 per cent. of the total deaths in Ireland were returned as uncertified, either by medical men or by coroners, as against 1.45 per cent. in England and 2.3 per cent. in Scotland. In Dublin, Belfast, and most of the other urban centres death certification appears to be satisfactorily carried out; the bulk of the uncertified deaths are recorded in the sparsely peopled rural districts, where the difficulties of obtaining medical assistance are exceptionally great. Sir Robert Matheson explains that the high proportion of uncertified deaths is due to the circumstance that in Ireland many of the poorer classes refrain from seeking medical advice for the very old and for the very young, as well as for those who are afflicted with chronic diseases.

In Ireland the method of classification of causes of death is the same as in England and in Scotland, being based on the nomenclature of diseases issued by the Royal College of Physicians of London. Among "General diseases" typhus fever, influenza, measles, whooping cough, and diarrhoad affections showed increased fatality last year, as compared with its predecessor; whilst scarlet fever, enteric fever, and cerebro-spinal fever were less fatal. Perhaps the most interesting section in the report is that which relates to the behaviour of typhus fever in Ireland; it shows how completely this pestilence is amenable to control by hygienic methods. Special reference is made to a table showing the deaths from typhus fever in each of the 39 years down to 1907. From this it appears that in the year 1880 not fewer than 891 deaths from typhus fever occurred in Ireland, whilst last year the number did not exceed 59. "There is no doubt," says the Registrar-General, "that this reduction is principally due to the measures that are generally so promptly taken to diminish the spread of infection." The reduced mortality from enteric fever is another gratifying feature in Irish statistics, the number of deaths referred to this disease last year having been the lowest hitherto recorded. In the course of the last 11 years there has been a reduction of enteric fever mortality equal to 75 per cent. The local distribution of the disease is set forth in the report; and, as is the case in England, the fatality is highest in the large town districts, and lowest in the rural areas.

The Registrar-General reports a decline in the mortality from tuberculous disease of all kinds in the year 1908. Compared with the previous year there were 386 fewer victims to its ravages, and a corresponding fall is observable in the fatality of the pulmonary variety of this disease. The campaign against tuberculosis is being carried on with great success by the Women's National Health Society of Ireland. which was recently inaugurated by Her Excellency the Countess of Aberdeen. In the words of the report: "The tuberculosis exhibitions held under the auspices of Her Excellency in all the large towns, and the tuberculosis vans which, under her direction, have travelled through many of the rural districts have instructed the people as to the infectious nature of the disease and the means of protecting themselves from its ravages; and evidences are not wanting that the lessons thus inculcated are bearing fruit, and that in many places there has been a material change for the better amongst our people in their habits and surroundings.' We believe that in Ireland the registrars are for the most part medical practitioners, consequently their reports on the sanitary condition of their districts are exceptionally valuable for administrative purposes. For example, one of the registrars reports with reference to the work of the National Health Society: "There is a great improvement with regard to cleanliness in dwellings. People are beginning not to be frightened of fresh air." Another registrar writes that: "The people seem to be awakening to the fact that the inroads of tuberculosis may be lessened by the timely adoption of suitable means." Yet another registrar reports that the sanitary state of his district is greatly improved and that the houses are now being kept clean and well ventilated. By means of a diagram the mortality from tuberculosis in Ireland is compared with that in England, and also with that in Scotland, in each of the 45 years from 1864 to 1908. The diagram shows that between the first and last years of this period the English rate declined from 3.3 to 1.6 per 1000,

but that the Irish rate, instead of falling, has actually risen by 0.2 per 1000 in the same interval. In this connexion, however, regard must be had to the fact already alluded to, that only three-fourths of the deaths from all causes are medically attested in Ireland. In another useful and interesting diagram, which appears in this report for the first time, the fatality of tuberculosis at ages above 15 years is exhibited in relation to the conjugal condition of the people. From this we learn that the average tuberculous death-rate of the unmarried is 3.54 per 1000 for males and 3.26 for females. In the case of the married the rate for hasbands is 2.07 per 1000 and that for wives is 2.70 per 1000. Again, the diagram shows that in Ireland generally tuberculosis exacts a much heavier death-toll among widowers than among widows. We further note the insertion of an interesting table indicating the fatality of tuberculous disease among the various social grades inhabiting the Dublin registration area. From this it appears that whilst in the families of the professional class it is responsible for a mortality at the rate of 73 per 100,000 living, it ranges upward through rates of 223 in the middle class and 371 in the artizan class to a rate of 399 per 100,000, or more than five times the first rate, in the general service class.

Malignant disease does not appear to claim an increasing proportion of victims in Ireland at the present time. In the year 1906 the rate of mortality referred to this cause was 793 per 1.000,000 living and was the highest on record. In the following year the rate fell to 762 per 1,000,000 and to 758 per 1,000,000 in the year under present notice. In addition to the deaths specifically referred to malignant disease, there occurred last year 52 deaths ascribed to "tumour" simply. Apparently the Registrar-General makes inquiry respecting the true nature of the deaths thus indefinitely returned; but in the absence of necropsies it is of course possible that some of the tumours may have been cancerous in their nature. "The preservation of infant life," says Sir Robert Matheson, "is one of the principal objects in the work of sanitary reform." In the year under notice the death-rate of infants in Ireland averaged 97 per 1000 births, which was below the English rate by 24 per 1000, and below the Scottish rate by 13 per 1000. In the "civic unions" of Ireland the rate averaged 130 per 1000, and in the remainder of that country it was 75 per 1000. A table similar to that prescribed by the English Local Government Board is included in this report showing the causes of infant mortality at several stages of the first year of life. As is the case in England, the mortality of infants in Ireland is mainly due to diarrhoeal diseases, convulsions, wasting diseases, and affections of the respiratory system. Towards the close of his report the Registrar-General expresses regret that so large a number of deaths are still referred to ill-defined or not specified causes, a fact which affects the interests of the public as well as those of the medical profession. He therefore again appeals to the medical profession in Ireland to help him in presenting the vital statistics of the country in the most perfect manner possible, and to avoid the issue of medical certificates containing ill-defined causes of death.

LECTURES ON SCIENTIFIC MICROSCOPY.—From Oct. 11th to 16th a series of lectures and practical demonstrations in microscopy will be held at the Institute for Microscopy of the University of Jena. The lecturers are Professor H. Ambronn, Dr. H. Siedentopf, and Dr. A. Köhler, the subjects dealt with being: Abbe's theory of the formation of the microscopic image; the use of Abbe's diffraction apparatus; the method of testing objective glasses; the Abbe test plate and the Abbe apertometer; dark ground illumination; photo-micrography; the use of ultra-violet light; and the ultra-microscope. The demonultra-violet light; and the ultra-microscope. The demonstrations include the investigation of colloids. Application for admission to the course should be sent to Dr. Ehlers, Jena, Beethovenstr. No. 14. Only a limited number of applications can be accepted for the practical lessons and demonstrations, and it is requested that early entry should be made. The subscription for the lectures, demonstrations, and practical lessons, which will cover a period of 18 hours, is 20s; and for the lectures only (nine hours), 6s. The microscopes and apparatus will be lent by Messrs. Carl Zeiss. next series of lectures will be held from March 7th to 12th, and that the Scottish rate declined from 3 ·6 to 2 ·1 per 1000; | 1910, in the Anatomical Institute of the University of Leipsic.

THE BORSTAL SYSTEM FOR THE TREATMENT OF JUVENILE-ADULT CRIMINALS.

II.1

THE experiment of treating adolescent offenders on the lines indicated in the preceding article was commenced a few years ago when part of the disused convict prison at Borstal, near Rochester, was opened as a reformatory for the reception of juvenile-adult prisoners from the metropolitan area; and it is on this site that the new reformatory, which will be the prototype of the Borstal institutions throughout the country, is now in course of erection. The new structure, which is being built in large part by the labour of the young prisoners, for whom this work is, of course, a very useful form of technical training, is already in a sufficiently advanced state to give a fairly good impression of what it will be when completed; and as it represents in many respects the latest developments in prison engineering, some account of its chief characteristics may be of interest.

The cellular part of the reformatory consists of four pavilions, lying two on either side of a central block which comprises the administrative offices and the various communal buildings-viz., the chapel, gymnasium, kitchen, and hospital. The cells in each pavilion are arranged on either side of a central corridor and are in two tiers, the cells in the upper tier opening on to a light gallery. In their general character the cells conform to the type which has been evolved in the modern English prison. Each one has a cubic capacity of 622 feet and is supplied with fresh air through a hit and miss ventilator which is placed behind the hot-water pipes near the floor, so that the air is warmed in entering. There is also direct access of air under the prisoner's control through a sliding pane in the window. The foul air is passed into the corridor through gratings placed over the door. Each cell has a large window of clear glass measuring 2 feet 6 inches by 3 feet 9 inches, and artificial light is provided by means of an inverted incandescent gasburner fixed above the immoveable table. The corridor is thoroughly ventilated by opening sashes at the clerestory level above the upper tier of cells, as well as by large windows at either end. A series of cowled extractors along the crest of the roof provide exit for foul air. The number of cells in each pavilion is 100, so that the whole reformatory when completed will provide accommodation for 400 prisoners, which is probably as many as can be treated in a single institution of the kind with due regard to individualisation of care.

Daily routine.—The Borstal day begins at 5.30 A.M., when the prisoners rise, wash and dress, and clean their cells. From 6.10 A.M. to 7 A.M. there is physical drill, carried out in general accordance with the syllabus of physical exercises recommended by the Board of Education for use in public elementary schools. Drill is followed by breakfast, after which the prisoners go to work in the various shops till dinner at mid-day. A further spell of labour lasting three and a half hours and an hour of school instruction occupy the afternoon. At 5.30 P.M. supper is served out, and after supper there are prayers in chapel. An hour's leisure is then allowed in the cells, or in the case of the better-conducted lads in associated recreation, before the prisoners are locked away for the night. This routine is modified on Saturday afternoons when the boys are associated for half-an-hour's singing practice and have their weekly bath. Sunday is mainly devoted to religious instruction and to reading in cell.

Diet.—As due attention to the physical development of the juvenile-adult prisoners is a specially prominent feature in the Borstal system, the question of food is of capital The dietary scale at present in force is a slightly modified form of the C Diet of Local Prisons, the proportions of fat and proteid being somewhat higher in the Borstal menu. Breakfast consists of 8 ounces of wholemeal bread with 2 ounces of margarine and a pint of porridge (made with 3 ounces of coarse Scotch oatmeal). The rations for supper include the same amount of bread with a pint of cocoa, and on three days in the week 2 ounces of cheese.
At dinner 8 ounces of bread and 12 ounces of potatoes are

of its working may suggest some alterations in its details.

Physical exercises.—Pending the opening of the gymnasium, which is now practically completed, the physical training being given at Borstal consists in daily drill in the open air. Special stress is laid on the movements which tend to develop the respiratory function and on those that have an educative influence on the power of attention and inhibitory control. This is a part of the discipline which is highly appreciated by the boys, and it is found to have excellent results, physical and moral. A feature of the Borstal system, which is quite a new departure in reformatory treatment in this country, and one which will be welcomed by those who recognise the intimate connexion of anti-social habits with weakness and instability of nervous organisation, is the introduction of hydrotherapeutic methods in association with physical exercises. The Scotch douche, which it is intended to use for this purpose, will be fitted up next to the gymnasium, and it is expected that the installa-

tion will be complete within a very short time.

School instruction and lectures. - The educational attainments of the juvenile-adult prisoners are in general very poor. During the last year for which figures are available the proportion of the boys received into Borstal who had reached the seventh standard was under 2 per cent., and considerably more than a fifth of the whole number were either absolutely illiterate or were only in the first standard. state of things is not due to any innate incapacity, for it is found that these boys learn well and rapidly in prison; their ignorance appears to be another effect of the evil environment in which they have been brought up. This is, in fact, the explanation given with some degree of pride by many London hooligans who boast of their illiteracy as a proof of the success with which they have been able to defy the efforts of the school attendance officers. The importance of providing school instruction for these prisoners is self-evident, even though we do not nowadays attribute to the "three R's" the ethical value formerly ascribed to them; and a good deal of time and effort is given to the matter at Borstal. In addition to the ordinary class instruction, lectures and addresses dealing in a popular manner with scientific and historical subjects are frequently given and are much

liked by the juvenile audience.

Work.—Under the Borstal system special stress is laid on industrial training, not only as a means of increasing the wageearning capabilities of the boys after release, but also as an educative influence of the highest value in correcting the morbidly unstable and spasmodic functioning of the nervous system in these adolescents. The trades taught include smith-work, carpentry, tailoring, bootmaking, building, and farmwork, so that they are of sufficiently diverse character to allow the special aptitudes and tastes of individual boys to be taken into account in selecting the form of labour to which they are to be put. The results appear to be very successful and the work that these young fellows turn out after a few months in the shops is remarkably good. Most of the trade instructors, who, of course, have had experience of ordinary apprentices before entering the prison service, are very emphatic in their opinion of the skill and intelligence shown by the Borstal lads when they have once got into the habit of regular work. The industries which up to the present have been most developed at the reformatory are those in connexion with the building operations actually in progress; the designs have been drawn on simple

given every day with a pièce de résistance which varies; on Sundays it is preserved meat (5 ounces), on Tuesdays and Fridays meat and vegetable soup (1 pint made with 4 ounces of beef, and 2 ounces of split peas or pearl barley), on Wednesdays suet pudding (12 ounces), on Thursdays and Saturdays fresh beef or mutton (5 ounces without bone). We are informed by the medical inspector, Dr. Herbert Smalley, that the average daily ration in this dietary is estimated to give 5.28 ounces of proteid, 17.37 ounces of carbohydrate, 2.39 ounces of fats, and 0.88 ounce of salts, and that its total fuel value amounts to 3259 Calories. The quantity of nutritive material in the Borstal diet is thus a little above Atwater's standard for men doing moderate muscular work; the slight excess, which is chiefly in the proteid constituents, is obviously desirable in view of the special needs of the organism during adolescence. The estimated cost of feeding these prisoners is at the very modest rate of 4.9d. per head per day. The scale is still, of course, fixed in a merely provisional way, and it is quite possible that further experience

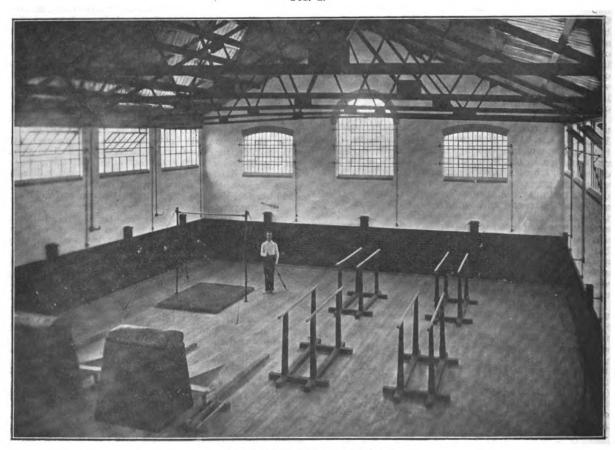
¹ No. I. was published in THE LANCET of Sept. 25th, p. 949.

Fig. 1.



Arrangement of the cells in the Borstal Reformatory.

Fig. 2.



The interior of the gymnasium at Borstal.

and straightforward lines so as to enable learners of fair intelligence to carry them out with some skilled assistance; and in this way it has been found possible to execute a large part of the work on the new buildings by the labour of the young prisoners. The brickwork done by the lads looked, at least to the unprofessional eye, quite as good as that laid by contract labour; and the carpentry and metal-work, though, of course, rather rough, seemed to be of very fair quality. The boys for the most part appeared to be genuinely interested in what they were doing and punishment for idleness and inattention is very rarely called for.

Discipline.—The inmates of the reformatory are classified

in three grades—ordinary, special, and penal. On admission the newcomer is placed in the ordinary grade, in which he remains until he has earned promotion by industry and good behaviour to the special grade, or unless he incurs degradation to the penal class on account of misconduct. A prisoner in the special grade enjoys a number of small privileges of the sort that are likely to appeal to a boy's ambition; his cell is better furnished and he is allowed to ornament it with photographs and small pictures sent him by his friends; he has more frequent letters and visits; and he is permitted to associate every day at recreation with others in his grade and to read in his cell for half an hour after the regular bedtime. Prisoners become eligible for promotion to this grade when they have earned a certain number of marks for industry and for conduct, the marks for industry being awarded by the trade instructors and those for conduct by the ward officers under the supervision of the higher officials. A committee, consisting of the governor, medical officer, and chaplain, looks after the working of this system and decides on the fitness of the prisoner for promotion when he has earned the necessary number of marks. This committee has full discretion in deciding whether a prisoner is to be admitted to, or removed from, the special grade. Prisoners who by continued good conduct have retained their position in this grade for several months and who are considered fit for the privilege are allowed to work without being under immediate supervision, or, if shortly due for release, may be employed at labour outside the walls of the reformatory. tinctions are found to create a spirit of healthy emulation amongst the boys; and it is rather interesting to note that they seem to appeal with special force to some of the exleaders of hooligan gangs whose ambitions when at liberty were directed to commanding the "Silver Hatchet" or some similar association of youthful marauders.

After-care. - No scheme for the reclamation of young criminals can be effective without some means of supervision and rehabilitation in honest life after discharge from prison. In the case of the Borstal system this is provided by a body of philanthropic persons known as the Borstal Association, who get into touch with the boys some months before their release and make arrangements for their employment when they come out of prison, keeping an eye on their conduct and giving them advice and assistance during the difficult period of transition from restraint to freedom. The supervision exercised in this way has hitherto been subject to the disadvantage that it was not supported by any power of control over the ex-prisoner's conduct; under the new law this defect has been remedied by the adoption of a system of conditional release on license which may be revoked when the boy's mode of life is not satisfactory. In the future, therefore, the Borstal Association will be in the position of legal guardian to the juvenile-adults on license, and will thus be able to interfere actively when any of its charges show signs of relapsing into the criminal habit. This will be a difficult and responsible work, the successful execution of which will depend very largely on the tact and energy of the voluntary workers who cooperate in it. Fortunately, the indefatigable honorary secretary of the association, Mr. W. Grant-Wilson, seems to have been able to impart a share of his own zeal and enthusiasm to all his coadjutors, so that there is every reason to anticipate that this most important adjunct of the Borstal system will continue to work as satisfactorily as in the past.

The number of prisoners who have been brought under the Borstal discipline is still, of course, comparatively limited, but when adequate reformatory accommodation is available and when the courts begin to make use of the powers conferred by the Prevention of Crime Act a very large number of committals may be expected. The 140 boys now under detention are for the most part London thieves and hooligans. When seen on parade or at work in the shops these youths,

except for their prison dress, are in the lump quite indistinguishable from any scratch collection of adolescents of the urban working class. In the faces of only a very few is there anything in the least suggestive of an inferiority of type; and the medical officer, Dr. A. C. Pearson, who has an intimate knowledge of the lads under his care, considers that it is quite unusual to observe any pronounced stigmata of degeneracy in the young criminals sent to Borstal. This is due no doubt in part to the fact that a good deal of care is taken in selecting the boys who are to be submitted to this treatment, for it is fully realised that the admission of the feeble-minded and the morally idiotic to an institution designed for the training of adolescents of normal aptitudes would imperil the success of the scheme. And here we may note in passing that the Borstal system, by the importance which it thus gives to the preliminary examination into the mental capacity of the juvenile adults at the receiving prisons, is likely to promote very materially that study of individual psychology which is what we most need at present for the advancement of our knowledge of criminal man. When the scheme comes into operation on the larger scale contemplated by the Prevention of Crime Act its influence in this direction will, of course, be proportionately increased, so that, in addition to its intrinsic merits as a method of reformatory discipline, the Borstal system should do much in this country to stimulate the scientific spirit in crimino-

Of course, it is an essential condition of success in any reformatory treatment that it should be applied during a sufficient period of time, and on this account what is termed the "full" Borstal system, such as has been described in this article, is not enforced in the case of prisoners whose sentences are less than 12 months, and under the new Act this is also to be the minimum term of detention in a Borstal institution. It has been felt, however, that some of the Borstal methods, and more particularly the physical training which is an essential feature of the system, might be applied also with advantage to young offenders undergoing shorter sentences, and a modified form of the discipline is accordingly enforced now in the case of all prisoners of juvenile-adult age. It is found that considerable improvement in physique very generally results from this treatment even when its application is limited to a few months: and this is so far satisfactory as showing the promptitude with which these lads react to the healthy influences which are lacking in their normal environment. It is not, however, to be expected that the results achieved in this way can be at all comparable to those obtained from the full Borstal treatment; and it is very desirable that judicial authorities should realise this fact, and that they should come to recognise that, at all events as a general rule, whenever it is necessary to send an adolescent to prison, it is well to send him for a sufficient period of time to enable the corrective influences of this disciplinary system to produce their full effect.

ASYLUM REPORTS.

Cumberland and Westmorland Lunatic Asylum (Report for the year 1908).—The average number of patients resident for 1908 was 803, of whom 415 were men and 388 were women. The direct admissions numbered 170, and nine persons were admitted from other asylums. number of patients discharged was 79, and of these 60 were recovered and 19 relieved. The proportion of recoveries calculated on the number of direct admissions was 40.6 per cent. Deaths numbered 68 and the death-rate, calculated on the daily average number resident, was 8.3 per cent. Dr. W. F. Farquharson, the medical superintendent, draws attention to the importance of the findings of the Royal Commission on the Care of the Feeble-minded. By the suggested provisions of that Commission all mentally defective persons would be kept under proper control and supervision, trained to do useful work, and, if necessary, kept permanently apart from the rest of the community. The cost of the scheme would at first be great, but there can be no doubt that its adoption would be of benefit to the community and would eventually lead to a saving to the ratepayers.

Lincolnshire County Asylum, Kesteven (Report for the year 1908).—To this asylum 75 cases were admitted, 66 of these being direct admissions. The total number of patients

under treatment during the year was 448. 37 patients were discharged, of whom 27 had recovered, giving on the direct admissions nearly 41 per cent. of recoveries. Deaths numbered 31, which gives a percentage of 8·13, calculated on the average number resident. The average age at death was 58. It appears that hereditary predisposition was even more frequently assigned as a cause of illness than in past years, and in over 50 per cent. of those admitted this factor had to be taken into account.

Asylum for the Counties of Salop and Montgomery and for the Borough of Wenlook (Report for the year 1908).—
During this year 976 patients were under treatment. The admissions numbered 197; of these 48 were readmissions and 96. Of these 74 were discharged recovered, and of these patients 76 per cent. had been resident for less than 12 months. The deaths were 75 in number, the percentage on the average number resident being 9.49. At the end of the year there were resident 29 more patients than accommodation was provided for, and in addition to this a large number of patients have had to be boarded out. It appears, however, that the problem of providing further accommodation in the asylum itself is no nearer solution, as the proposed purchase of the Copthorne estate for this purpose has been vetoed by the Secretary of State.

Nottingham City Asylum, Mapperley Hill (Report for the year 1908).—The average daily number resident at this asylum for last year was 827. There were admitted during the year 171 patients. The discharges numbered 103, of whom 64 had recovered, this giving a percentage of 39 on the admissions. Deaths numbered 80, giving a percentage of 9.6 of the average number resident. It appears that the number of senile cases admitted was comparatively great, 18 persons being above 65 years of age. Mr. Evan Powell, the resident medical superintendent, writes that it might be regarded as absurd and wrong to send such cases to an asylum, but that as a fact such patients constitute a troublesome class requiring the constant attention of the nurses, and that at present the only alternative to keeping such persons at home is to place them in an asylum. The workhouses may be said to be the proper place, but the workhouses have not the requisite staff or the accommodation.

Hertfurdshire County Asylum, Hill End, St. Albans (Report for the year 1908).—At this asylum the total number of cases under treatment was 717. There were 145 admissions, of whom 81 were first attack cases. The discharges numbered 50, of whom 42 were discharged recovered. The recoveries from cases directly admitted numbered 39, and the proportion this number bears to the number of direct admissions is 29·1 per cent. The deaths numbered 43, being a percentage of 7·12 on the average daily number on the register. The extension works were completed in March last and give accommodation to 234 patients.

Barnsley Hall Asylum (Report for the year 1908). The total number of cases under treatment at this asylum was 514. The admissions numbered 230, and Dr. P. T. Hughes reports that the character of the cases admitted was such that the prospect of recovery appeared unusually un-favourable. More than one-third of the first attack cases were aged 60 years and upwards and six were over 80 years of age. The unsuitability of many of the cases which are at the present time sent to asylums because there is no proper accommodation for them elsewhere has been referred to by the Commission upon the Feeble-minded. The report of that Commission says: "We find lunatic asylums crowded with patients who do not require the careful hospital treatment that well-equipped asylums now afford and who might be treated in many other ways more economically and as efficiently." Dr. Hughes further points out that defective heredity being so potent a factor in the causation of insanity it has become a serious and difficult problem as to how best to cope with the evil. "The physiological laws which govern the reproduction of sound stock are the same for both man and animal, yet few of the elaborate precautions taken to secure sound pedigree stock find a counterpart in the reproduction of the human race. Sentimental and legal reasons insist upon the discharge of individuals from asylums as 'recovered,' who appear to be sane whilst surrounded by the specially adapted asylum environment but who are really deficient and unfitted to be the parents of children. It is a

matter for very serious consideration whether any patient who has had more than one mental breakdown should be given a further opportunity of reproducing defective stock." The discharges numbered 57, and the rate is low owing to the unfavourable character of the admissions. The total number of deaths was 51.

POOR-LAW AND HOSPITAL PROBLEMS IN THE SIXTEENTH CENTURY.

THERE are two problems which are much to the fore to-day, and those two closely related-namely, relief of the poor, with which may be placed Poor-law problems, and the question of hospital abuse. It is interesting to note that these two problems were a matter of nearly as much concern to the sixteenth century as to our own. Robert Copland, a printer and author who flourished 1508-1547, wrote among other poems a piece called "The Hye Way to the Spyttell Hous," which is cast in the form of a dialogue between himself and the porter of a hospital, which from internal evidence would appear to be that of St. Bartholomew. Copland begins by saying that "about a fourtenight after Halowmas" he chanced to come by a certain spyttel where, as it was raining and snowing, he thought it best to take shelter in the porch. And as he stood there the porter of the house stood by him. They conversed, and it is pleasing to note that even then, like true Englishmen, their conversation began on the subject of the weather, "with whom I reasoned of many divers things, touching the course of all such wetheringes," says Copland. As he stood there—

"....... there gathered at the gate
People as me thought of every poore estate,
With bag and staf, both croked lame and blind,
Scabby and scurvy, pocke eaten flesh and rynde,
Lowsy and scalde, and pylled like as apes,
With scantly a rag for to cover theyr shapes,
Brecheles, barefoted, all stynkyng with dirt
With M.¹ of tatters drabblyng to the skirt,
Boyes, gyrles and luskysh strong knaves,
Dydderyng and dadderyng, leaning on their staves
Saying: gode master for your moders blessing
dive us a halfpenny toward our lodging."

Thereupon the porter rebuked them for begging, telling them-

"Ye shall be entreated as ye ought to be, For I am charged that dayly to see The systers shall do theyr observaunce As of the hous is the due ordinance."

Copland then inquired if everyone who applied was taken in, and was especially curious about the vagrants whom he said that he was in the habit of seeing when he went out with the watch: "I wot not whether they be thieves or hoores," but whom he found full oft at the door of Saint Barthylmews Church, "or in the shepe cootes or even here always by this bricke wall," and who "oftentimes that they us se, they do rene a great deal faster than we." The porter replied that such were certainly not taken in. Copland then inquired who were relieved, and the porter answered:—

"Forsoth they that be at such myschef
That for their lyving can do no labour,
And have no frends to do them socour,
As old people, seke and impotent,
Poore women in childbed here have casement,
Weyke men sore wounded by great vyolence,
And sore men eaten with pockes and pestylence,
And honest folk fallen in great poverty
By myschance or other infirmity;
Wayfaryng men, and maimed soldyours,
Have theyre reliof in thys poore hous of ours,
And all others which we seme good and playne,
Have here lodging far a nyght or twayne

But not every unseke stoborn knave For then we should over many have."

It will be seen from this that in these days St. Bartholomew's fulfilled the double office of a hospital in the modern sense and of a Poor-law infirmary or casual ward. Care, however, was taken to keep out the impostors about whom Copland next asked, for the porter said, "No in soth, this hous is of no such supporter." And he proceeds to give a delightful account of such impostors, from which it will be seen that the art of counterfeiting disease is no new thing, although

within the last 50 years the action of the Mendicity Society has put an end to the frauds described below. Some beggars

"dyssymule as false lewtring flowches
With bloody clowtes all about theyre legge
And playsters on theyre skyn when they go beg,
Some counterfayte lepry, and other some
Put som in theyre moth for to make it scome
And fall down as St. Cornelys evyl,
These devecyts they use worse than any devyll,
And when they be in theyre own company
They are as hole as either you or I."

The counterfeiter of epilepsy with soap in his mouth was a familiar object at the Strand end of Waterloo Bridge some 40 years ago, if we remember right, but he used to vanish with alacrity on the approach of a policeman.

But at the last the hospital is open even to these, "whan sekenes cometh in dede, Than to the spyttell house must they come nede." Copland next inquires after the masterless men who have served the king beyond the sea and are now "out of wages," cannot they be helped till they get some work? The porter agrees, but says that most of them are vagabonds who will not do steady work, and he implies that most of them have never been in the army at all. He then goes on to describe other varieties of tramps, beggars, and impostors, and at length comes to the quack. He pretends that he cannot speak English: "Me non spek Englys by my fayt, my servant spek you what me says." He feigns marvellous gravity, and people naturally ask whence he comes. Then the servant answers "that he was born in heathenesse and is a cunning man,

"For all the seven scyences surely he can And is sure in physik and palmestry, In augury, sothesaying and vysenamy." So that he canright sone espy If ony be disposed to malady, And therfore can give such a medicine That maketh all accesses to decline."

So great a man, however, cannot be expected to meddle with the diseases of common people, and if it were known that he did he would lose "the favour of every great estate." Still he will treat poor persons out of charity, taking no money. He is described as looking at a child and saying, "Dys infant rumpre ung grand postum, By got he ala mort tuk under tum." This the servant translates into the statement that the child has a bag in his stomach as great as he may wag, that within two or three days it will choke him, and that unless they take the physician's advice the child will "sodenly be dede." The mother offers 20s. but the quack refuses any fee.

"Then calleth he anon for hys casket That scantly is worth a rotten basket, And taketh out a poudre of experience That a cartlode is not worth twopence."

This powder is to be taken fasting during three days. He then departs without taking any money. The next day a confederate turns up and seeing the child informs the mother that it will be dead within three days, "but oure Lord hym save." The mother struck by this remark says that only yesterday a gentleman had told her the very same thing. Whereupon quack number two inquires what sort of man it was. On his being described he says that he knows him well and wonders that he brought himself to prescribe for such a mean household. The mother then begs her visitor to prescribe and offers 20s. and expenses for a week or two. The quack replies that he will take no money for his labour but that his drugs must be paid for and they are very expensive. Moreover, he will stop in the house until the child be whole.

"Than gooth hys knave to the town to buy
These dragges that be not worth a t—de,
And there they lie at fourtenight at borde
With these good folkes, and put them to coste,
Both mete and money"

At the end of the fortnight the quack rejoins his fellow rogue and they make merry with the twenty shillings. For such men as these, says the porter, "The spyttell is not for theyr estate, Howbeit they come dayly by the gate."

Copland then asks "of all folk in general that come the hye way to the hospytall." The porter answers that the list is tedious, a remark with which the reader might agree, racy as our author is, if we quoted the whole passage. But, shortly, it amounts to the fact that all persons who do not do their duty in this life—gamblers, spendthrifts, wastrels, tramps, cheating tradesmen-" must needs come this way." After this tragic passage, which shows the hospital in its character as a poor house, we have a piece of comedy. Copland asks,

"Come hither any of these wofull creatures
That be sore wounded and much we endures
With a shrewd wyfe, and is never quiet
Bycause that she wold have all her dyet
But bralle and chyde, babble crye and fight,
Ever uncontented both day and nighte?"

Porter: 'Come thys way, quod a?' Yes I warraunt you
Of them always come thys way enow,
We have chambres purposely for them,
Or else they should be lodged in Bedlem.'"

He adds that, in his opinion, the very devil in hell has not so bad a time as a husband and wife who are always quarrelling.

Other varieties of rogues are mentioned whom the hospital "must receyue and give them costes free" and the porter concludes (for the time being) his list of applicants by the following lament which will strike a sympathetic note in the hearts of Cabinet Ministers,

"Of all the sortes that be spoken of afore I warraunt women enow in store That we are wery of them: euery day They come so thycke that they stop the way."

Copland then says that as it is fine he will now go, and thanks the porter for his information, to which that indefatigable official says,

"There be a M. more than I can tell But at thys time I bid you farewell."

So ends this curious little tract, a work which shows that the problems which now exercise Poor-law experts are no new The loafer, the criminal, the tramp, the vagrant, and all those who, as Copland says-

"All the somer keep dyches and buskes
And will not work but the bypaths trace
And live wyth hawes and hunt the blakbery
And wyth hedge breking make themself mery
But in wynter they draw to the towne,"

Are these, he says, to find shelter?

"Me think that therein ye do no right Nor all such place of hospytalyte To comfort people of such iniquity."

Further on he refers to the Act recently passed against vagabondage, probably that of 1531, and argues that if it were put in force the quantity of beggars would not be so great. That Act allowed certain people to beg under license, but sturdy and valiant beggars were to be whipped at the cart tail. Scholars of Oxford or Cambridge were not to beg without license from the Chancellor or Vice Chancellor under penalty of whipping. Pardoners, proctors, and other rogues, especially those who pretended to have a knowledge of physic, were likewise to be whipped, and on a second offence were to have an ear cut off after a double whipping. The reader who scans the advertisement pages of the popular magazines of to-day may well wish that some such enactment were in force now. Verily the problem of what to do with the unemployable, of the "born tired," and of the loafer is as old as civilisation.

² The word "proctor" in this connexion did not, of course, mean the University official representative of the Masters, but one who collected alms for lepers and others unable to beg in person. Within a few years, however, the word practically meant any kind of beggar who lied. In this connexion Watts's Charity at Rochester, well known to all readers of Dickens, may be quoted. The inscription over the door runs :--

RICHARD WATTS, Esq.
by his Will, dated 22 Aug. 1579,
founded this Charity
for Six poor Travellers,
no not being ROGUES, or PROCTORS,
May receive gratis for one Night,
Lodging, Entertainment,
and Four-pence each.

St. Mary's Hospital Medical School (Uni-VERSITY OF LONDON) .- As a result of the September examinations the following gentlemen have been elected to entrance scholarships subject to confirmation by the governing body of the Medical School: University scholarships: 50 guineas, Horatio Thomas, University College, Cardiff; 50 guineas, T. H. Phillips, University College, Cardiff. Open scholarships in Natural Science: £145, R. W. Davies, King Edward's School, Birmingham; £50, F. W. MacAlevey, Mount St. Mary's College, Chesterfield; £25, J. E. Cheesman, South-Western Polytechnic. Epsom College scholar-ship: D. R. Alexander.

Public Bealth.

REPORTS OF SCHOOL MEDICAL OFFICERS.

The City of Liverpool.—The health conditions of the school children of Liverpool present a special interest by virtue of the fact that in certain parts of the city numerous racial elements are commingled, the Jewish and Polish quarters being both large and increasing. The question of race is being inquired into in the case of each inspection, and it is not unlikely that when sufficient data have been acquired some interesting facts may be revealed, although, of course, the foreigners who settle in Liverpool may be either the fit or the unfit representatives of their respective nations. It is somewhat difficult to determine which, because no doubt different forces are at work inducing emigration in different countries. It is difficult, for instance, in the case of England to determine whether it is the fit or unfit which leave the country. As regards Ireland, it is thought by many that it is the fit which depart, thus leaving behind the unfit to alter what might be regarded as the normal relations between the healthy and the unhealthy. In the case of Liverpool it is obviously necessary to determine the nationality of the children in order to establish a sound basis upon which to build up inquiries as regards national deterioration. The first report to the Liverpool education authority is made by Dr. E. W. Hope, the medical officer of health, and we are glad to see that the general supervision of the procedure has been left in his hands. The actual work of inspection is carried out by three medical officers, and with the consent of the health committee the services of its female sanitary inspectors have been placed at the disposal of the school medical officers. There are at the present time 14 of these inspectors, who have definite districts of the city assigned to them, and whose services are made use of when the schools in their districts are being inspected. These female inspectors also visit at their homes such children as the medical officers deem desirable, and as it is the duty of these inspectors to put into force Section 122 of the Children Act, 1908, which deals with verminous children, there is an obvious advantage in this arrangement. With regard to clothing, the inspections brought out the fact that 12 per cent. of the children possessed no underwear at all, and it was found that in the poorer neighbourhoods the children wear practically the same number of garments both in summer and winter. About 60 per cent. of the children were wearing watertight boots, 10 per cent. had boots with mere apologies for soles, another 25 per cent. boots which although satisfactory in dry weather were not watertight, while the remainder came barefooted to school. As to nutrition, 20 per cent. of the new admissions were good, 55 per cent. fair, 23.5 per cent. poor, and 1.5 per cent. bad, and in each case the condition of the girls was rather better than that of the boys. But it must be borne in mind that it was children from the poorer parts of the city that were here under examination. During the autumn of 1908 an inquiry was made by the medical officer of health as to the extent to which under or improper feeding prevailed in Liverpool, and on consideration of the reports made the city council decided not to put in force during the winter the Education (Provision of Meals) Act, 1906, but to rely upon voluntary contributions which were administered by a special subcommittee of the education committee. Coupons available at cocoa-rooms and a few special depôts were given to the children who required food, and a marked improvement in the physical and mental condition of the children was noted by the teachers. Large numbers of children appear to have been fed by the committee during the winter months, and, in addition, some 2000 were receiving meals every day at the day industrial schools and at special schools. The result of the investigations at the homes of the children was to show that amongst a great number of the very poor the diet consisted of bread and butter and tea for each meal, occasionally, in some cases, varied by fish or "hot-pot," but in many instances the family had nothing but bread and thea. In the case of the children from some schools it was found that although the parents could afford to provide them with good food their ignorance was responsible for the insufficiency of nourishment. The above facts bring out very clearly the enormous importance of the inspection of school children and of the visits of

educated persons to the homes. If those people who, with insufficient food, drink tea in excess could only be induced to procure milk instead, this act in itself would constitute an enormous advance. Enlarged cervical glands were noticed in as many as 22 per cent. of the new admissions, and in 12.5 per cent. of those finally leaving school, but in only two cases altogether could such glands be definitely called tuberculous. Similarly, there were but six cases of pulmonary tuberculosis amongst all the children examined. With respect generally to the question of treatment no arrangements have as yet been made with any of the general or special hospitals or the dispensaries, but a special subcommittee has been formed to consider the question, at least

so far as defective eyesight is concerned.

The West Riding of Yorkshire.—The inspection of the children in this important county is carried out by ten whole-time medical inspectors acting under the supervision of the county medical officer of health, Dr. J. R. Kaye. The question of employing as inspectors all the 111 local medical officers of health (mostly in private practice) was in the first instance considered, and it was only after holding a general conference of such medical officers of health that the arrangement already referred to was decided upon. There are ten districts, for each of which a resident medical inspector, who devotes the whole of his time to the work, has been appointed, and the number of children on the register of each district varies from 10,000 to 31,604. Up to the present no school nurses have been appointed, but it is anticipated that such appointments may be desirable in the future. The parents do not as yet appear to have taken a very active interest in the process of inspection, as although notifications were sent to all in the usual fashion only 14.05 per cent. were present at the inspection of their children. But it is necessary to point out that, owing to unavoidable delays, the figures given only relate to the last three months of 1908; in other words, the current report must be regarded as rather a preliminary and preparative one than an annual report. Moreover, the figures here furnished should not be used as the basis for any general inferences. Of the children examined only 0.57 per cent. were regarded as "poorly nourished"—a term which, it is pointed out, is not synonymous with "poorly fed"; but as there were no weighing machines available it was difficult to arrive at very accurate results. Some apparent anomalies as regards nutrition were found in different districts. For example, Dr. Elizabeth M. McVail, one of the medical inspectors, found in her district that the nutrition of the children seemed better in the valley schools than on the hillsides, but she thinks that the explanation may be found in the fact that the average wage of the valley residents is higher than that of those living on the hill-sides. As regards the Huddersfield area, Mr. G. H. Pearce states that he found no children who could be properly regarded as poorly nourished, in explanation of which he points to the absence of real poverty in the villages visited by him, and in his view the children are much better nourished than is the case in the urban districts. Dr. Eva McCall, writing as to the Barnsley district, finds the economic conditions there prevailing largely responsible for the high standard of nutrition which obtains. The miners are well paid and there is no demand for female labour. Consequently the woman attends to her home and to her children. As the statistics in this report refer to such a brief period it will be better to defer detailed consideration of this side of the West Riding report until next year. In the matter of treat-ment it has been decided in the first instance, in addition to the usual advice to parents, to form what are known as local "care of children" committees. So far as we are able to gather, it is proposed that these committees should be composed partly of co-opted ladies and that such committees should endeavour, somewhat on the lines of the Elberfeld relief system, to take a personal interest in certain cases and bring them in touch with philanthropic and other institutions. We look forward to next year's report to hear what success has attended the work of these committees.

Borough of Bootle.—The first annual report to the education committee of this borough is made by Mr. W. Daley, who is the medical officer of health and who receives an additional £25 per annum in consideration of his work in connexion with school inspection. His specific duties are (a) to supervise such medical assistance as may be necessary; (b) to present an annual report; (o) to take steps as regards

infectious disease; (d) to report as required on the sanitary condition of schools; and (e) to attend meetings of the The actual work of inspection education committee. devolves upon the additional medical officer, who receives £150 per annum for such work and who, for additional remuneration, acts as surgeon to the police and the fire brigade. During the year 1908 there were 1565 children examined, and in 60 per cent. of the examinations the parents accepted the invitation to be present. As regards treatment it is stated that, speaking generally, the parents of the poorer children do not carry out the advice of the school medical officer in cases where any financial outlay would be involved, but parents better circumstanced have to an appreciable extent either consulted their own medical adviser or taken the children to a hospital. But the figures relative to certain diseased conditions are far from satisfactory. Of 406 cases of enlarged tonsils and adenoids only 11 cases received treatment. Enlarged oervical or submaxillary glands were detected in 181 cases, a large proportion being due to verminous conditions or decayed teeth. As regards dental conditions 20 per cent. of the children were found to present some defects, while in the matter of clothing 16 per cent. were found to be badly clothed or badly shod. Of the total number of children examined eight were found to be suffering from pulmonary tuberculosis. In the matter of general nutrition many of the children were found below the normal standards of height and weight, but the report states that the majority of these were simply undersized children well nourished and cared for. No open-air camps have as yet been arranged for, but in the summer, in fine weather, classes are held in the playgrounds. Of the children attending school there had suffered before the commencement of school life 58 per cent. from measles, 36 per cent. from whooping-cough, 18; per cent. from chicken-pox, 7½ per cent. from scarlet fever, and 1½ per cent. from diphtheria.

County Borough of Devonport.—Mr. O. Hall, the medical officer of health, has been appointed school medical officer for this district. Out of 2078 children examined 44.8 per cent. had good teeth, 24.6 per cent. indifferent, and 30.7 per cent. bad, and Mr. Hall suggests that a tooth-brush drill should be introduced into the school curriculum. Pulmonary tuberculosis was found in only eight cases, although predisposing conditions were frequent. Nutrition was on the whole satisfactory. The subject of treatment is not discussed in any detail; probably the experience of the first year is being awaited.

Borough of Cambridge.-The work of the medical inspection of school children was commenced in voluntary fashion in Cambridge in 1907, but the advent of the compulsory régime has necessitated rearrangement of the whole procedure. The school medical officer is Dr. A. J. Laird, the present medical officer of health, who has himself carried out the medical inspection, and a school nurse, who was appointed in the autumn of 1906 at a salary of £95, assists at the inspection by weighing and measuring the children and by testing their hearing and vision. She also follows up cases at their homes and reports in writing to the school medical officer. A dentist has also been provisionally appointed at a salary of £300 per annum, but it appears that at the date of making the report the appointment had not received the sanction of the Board of Education. Assistance at the routine inspection is also afforded by three lady health visitors, who in addition follow up cases at their homes. As regards routine inspection it is not the practice at Cambridge to invite the attendance of the parents, although they are informed by the teachers that their presence will be welcomed. Notices are, however, sent to the parents whose children present defects requiring attention, and this notice is followed by visits from the school nurse or health visitors. The figures as regards nutrition were as follows: above average, 15 per cent.; average, 68 per cent.; below average, 17 per cent.

County Borough of Bournemouth.—Dr. A. D. Edwards, who is the school medical officer of the borough, reports that as the work of inspection was not commenced until October, 1908, the report deals mainly with local conditions of school hygiene upon which sufficient information for trustworthy deductions has been obtained. We gather that Dr. Edwards is not altogether satisfied with the present arrangement, by which he as school medical officer does not form part of the public health service of the town, and he thinks that under

the system which at present obtains there is always the possibility of the existence of an undesirable gap between the work of the departments. It is not clear why the town council in the first instance decided to keep the work of medical inspection outside that of the medical officer of health. The attendances of parents at the medical inspections of the children vary widely. Sometimes it is as high as 60 per cent. and at other times it is as low as 6 per cent. In the matter of treatment Bournemouth seems somewhat badly provided, there being no provision for the treatment of defective vision, enlarged tonsils or adenoids, diseases of the throat, ear, or nose or carious teeth, and Dr. Edwards states that in none of these conditions is it possible for the parent to obtain adequate treatment for the child at a small charge from a medical practitioner. This is an unfortunate state of affairs, and in the interest of the public health it ought somehow to be remedied. The past incidence of infectious diseases upon children leaving school before August, 1909, was as follows: measles, 86 56; whoopingcough, 37.5 per cent.; chicken-pox, 20 per cent.; and scarlet fever, 2.5 per cent. In cases of the suspected occurrence of infectious disease amongst the scholars swabs from the throat are taken for bacteriological examination and by this means symptomless "carriers" have been excluded. Children are always excluded from school when the true Klebs-Löffler bacillus is detected, but the presence of Hoffman's bacillus is not regarded as warranting such exclusions. But where this bacillus is found the children harbouring it are regarded with suspicion. In one instance where typical Klebs-Löffler bacilli had been found in the throat swabs the pencils which had been used in common by the children in the affected class were examined and the typical organisms found. Dr. Edwards urges the reinstatement of the epidemic grant which was withdrawn in 1903.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 8004 births and 3974 deaths were registered during the week ending Sept. 25th. The annual rate of mortality in these towns, which had been equal to 12.8 and 13.0 per 1000 in the two preceding weeks, declined to 12.6 in the week under notice, and was lower than in any week since the middle of August. During the first 12 weeks of the third quarter of the year the annual death-rate in these towns averaged only 11.9 per 1000, and in London during the same period the rate did not exceed 11.4 per 1000. The lowest annual rates of mortality recorded in the 76 towns last week were 4.0 in Lorton 4.5 in King's Norton 4.0 in Homeon and 5.0 in Leyton, 4.5 in King's Norton, 4.9 in Hornsey, and 5.9 in West Hartlepool; the rates in the other towns ranged upwards, however, to 16.7 in Hull, 17.4 in Rochdale, 17.5 in Oldham, and 17.8 in Middlesbrough. In London the recorded death-rate last week was equal to 12.2 per 1000. The 3974 deaths in the 76 towns last week showed a decline of 127 from the number in the previous week, and included 509 which were referred to the principal epidemic diseases, against numbers declining steadily from 849 to 632 in the four preceding weeks; of these 509 deaths, 348 resulted from diarrhoea, 51 from whooping-cough, 37 from diphtheria, 30 from measles, 26 from scarlet fever, and 17 from "fever" (principally enteric), but not one from small-The 509 deaths from these epidemic diseases last week were equal to an annual rate of 1.6 per 1000, a lower rate than in any week since the middle of August. No death from any of these epidemic diseases was registered last week in Cardiff, Leyton, Halifax, Hornsey, or in five other smaller towns; the annual death-rates therefrom ranged upwards, however, to 3.5 in Rhondda and in Middlesbrough, 3.8 in Hanley, 4.0 in Brighton, and 4.9 in Stockton-The deaths attributed to diarrhoea in the on-Tees. 76 towns, which had declined in the four preceding weeks from 676 to 461, further fell last week to 348, but eaused annual death-rates ranging upwards to 2.8 in Hull, 2.9 in Stockton on-Tees, 3.0 in Middlesbrough, 3.1 in Rhondda, and 3.2 in Brighton. The fatal cases of whoopingcough, which had been 73 and 59 in the two previous weeks, further declined to 51 last week; the highest annual rates from this disease being 1.2 in Derby and 2.0 in Great

further decline from the numbers returned in recent weeks, but caused annual rates equal to 1.3 in Coventry and in Newport (Mon.), and to 2.3 in Hanley. The 37 fatal cases of diphtheria, however, showed a distinct increase on recent weekly numbers, and included 18 in London and its suburban districts and three in Portsmouth; this disease caused deathrates last week equal to 1.3 in Devonport and 1.4 in Warrington. The 23 deaths from scarlet fever slightly exceeded the number in the previous week; 11 occurred in London and its suburban districts, six in Manchester and Salford, and two in Birmingham. The deaths referred to "fever," which had been 14 and 30 in the two preceding weeks, declined again to 17 last week, and were considerably below the corrected average in recent years. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospitals, which had steadily increased in the four preceding weeks from 2347 to 2553, had further risen to 2686 on Saturday last; 438 new cases of this disease were admitted to these hospitals during last week, against numbers increasing steadily in the five preceding weeks from 245 to 421. Of the 1127 deaths registered in London last week, 149 were referred to pneumonia and other diseases of the respiratory system, against 105 and 130 in the two preceding weeks, and exceeded by two the corrected average number in the corresponding week of the five years 1904-08. The causes of 31, or 0.8 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death registered during last week were duly certified in Bristol, West Ham, Newcastle-on-Tyne, Hull, Nottingham, Leicester, Salford, and in 50 other smaller towns; the 31 uncertified causes of death in the 76 towns last week included nine in Liverpool, three in London, and two both in Birmingham and in Reading.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 810 births and 494 deaths were registered during the week ending Sept. 25th The annual rate of mortality in these towns, which had been equal to 13.8, 12.3, and 12.1 per 1000 in the three preceding weeks, rose again to 13.8 in the week under notice. During the first 12 weeks of the past quarter the deathrate in these Scotch towns averaged 12 6 per 1000, and exeeeded by 0.7 the mean rate during the same period in the 76 large English towns. The annual death-rates last week in these Scotch towns ranged from 10.1 and 10.9 per 1000 in Greenock and Edinburgh, to 17.7 in Leith and 19.8 in Perth. The 494 deaths from all causes in the eight towns showed an increase of 63 upon the number returned in the previous week, and included 52 which were referred to the principal epidemic diseases, against 71, 56, and 47 in the three preceding weeks. These 52 deaths were equal to an annual rate of 1.5 per 1000, which was slightly below the mean rate from the same diseases in the 76 English The 52 deaths from these epidemic diseases last week included 20 from diarrhœa, nine from "fever," eight from diphtheria, seven from scarlet fever, five from whooping-cough, and three from measles, but not one from small-pox. The deaths attributed to diarrhoea in the eight towns, which had steadily declined in the four preceding weeks from 47 to 25, further fell last week to 20, of which 11 occurred in Glasgow, four in Dundee, and three in Leith. The nine deaths referred to "fever" showed a marked increase upon the numbers in recent weeks, and included six in Glasgow and one each in Dundee, Aberdeen, and Leith; seven of the nine were certified as enteric fever, and the other two (including one each in Glasgow and Aberdeen) as cerebro-spinal meningitis. The eight fatal cases of diphtheria included seven in Glasgow and one in Dundee; and of the seven deaths from scarlet fever four were returned in Edinburgh and two in Glasgow. The five fatal cases of whooping-cough corresponded with the number in the previous week, including three in Glasgow and two in Edin-burgh; and two of the three deaths from measles were returned in Glasgow. The deaths referred to diseases of the respiratory system in the eight Scotch towns, which had been 25 and 41 in the two preceding weeks, further rose to 59 last week, and corresponded with the number in the corresponding week of last year. The deaths in these eight towns last week included 22 which were referred to different forms of violence, of which 14 occurred in Glasgow and three in Dundee. The causes of 13, I the House of Commons on Sept. 28th regarding the number

or 2.6 per cent., of the deaths in the eight towns last week were not stated or not certified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0.8 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 16.8 and 17.3 per 1000 in the two preceding weeks, further rose to 19.5 in the week ending Sept. 25th. During the first 12 weeks of the past quarter the death-rate in the city averaged 17 2 per 1000, whereas the mean rate during the same period did not exceed 11 4 in London and 12.2 in Edinburgh. The 149 deaths of Dublin residents during last week showed a further increase of 17 upon the number returned in the two preceding weeks, and included 10 which were referred to the principal epidemic diseases, against numbers declining steadily in the four preceding weeks from 37 to 12. These ten deaths were equal to an annual rate of 1 3 per 1000, the death-rate from the same diseases last week being 1.7 in London and 1.2 in Edinburgh. Of these ten deaths from the principal epidemic diseases in Dublin last week, six resulted from diarrhea, two from diphtheria, and one each from scarlet fever and "fever," not one from measles, whooping-cough, or small-pox. The six fatal cases of diarrhœa corresponded with the number returned in the previous week. Of the 149 deaths at all ages in the city last week 34 were of infants under one year of age, and 40 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons showed a considerable increase upon the numbers returned in the two previous weeks. Two inquest cases and two deaths from violence were registered during the week, and 50, or 33.6 per cent., of the deaths occurred in public institutions. The causes of two, or 1.3 per cent., of the deaths in Dublin last week were not certified either by a registered medical practitioner or by a coroner; in London the proportion of uncertified causes of death did not exceed 0.3 per cent., while in Edinburgh it was equal to 4.0 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified: -Staff-Surgeon: H. J. Chater to the Vernon, additional, for the Furious. Surgeon: A. V. J. Richardson to the Hindustan, on recommissioning.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Supplementary list: Thomas McEwen to be Lieutenant (on probation) (dated August 13th, 1909).

TERRITORIAL FORCE.

Royal Army Medical Corps.

2nd London Sanitary Sompany: Captain Peter Caldwell Smith to be Major (dated Sept. 8th, 1909).

Attached to Units other than Medical Units. - Lieutenant Alexander C. Farquharson to be Captain (dated August 17th, 1909). Lieutenant Henry L. Gregory to be Captain (dated August 24th, 1909).

For Attachment to Units other than Medical Units.—George Brittan Gill to be Lieutenant (dated August 25th, 1909). Surgeon-Captain John A. Kendall from the 9th Battalion, The Durham Light Infantry, to be Captain (dated Sept. 1st, 1909).

Infantry.

5th Battalion, The Sherwood Foresters (Nottinghamshire and Derbyshire Regiment): Surgeon-Major Edmund Vaudrey resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated August 24th, 1909).

VOLUNTEERS.

Royal Garrison Artillery (Volunteers).

1st Carnarvonshire: Surgeon-Lieutenant-Colonel and Honorary Surgeon-Colonel Edward J. Lloyd resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated March 31st, 1908).

TUBERCULOSIS OF THE LUNG IN THE ARMY.

Mr. Haldane, in reply to a question by Mr. Summerbell in

of soldiers that have been discharged from the army during the ten years ending 1908 suffering from tubercle of the lung, said:—The number of men so discharged were as follows: 1899, 224; 1900, 328; 1901, 350; 1902, 334; 1903, 301; 1904, 440; 1905, 333; 1906, 400; 1907, 304; 1908, 272. While in hespital patients were kept apart from other patients and treated generally as cases of infectious disease. On discharge a notification was sent to the medical officer of health in the town or district where the man proposes to reside.

Correspondence.

"Audi alteram partem."

REMINISCENCES OF CHOLERA.

To the Editor of THE LANCET.

SIR, -I have just read with great interest in THE LANCET of Sept. 25th, p. 948, a letter under "Looking Back" entitled "A Severe Case of Cholera," and contributed to your columns 78 years ago by Mr. J. Burgess, apothecary to St. Giles's Workhouse. I believe it must be the description of a case illustrated by a picture which was so strikingly real that I kept the volume of THE LANCET containing the picture always at hand so as to be able to show it to any friends who had never seen a patient with this fearful disease. I always thought it was a sketch by the doctor of some miserable room or attic in which the poor woman lived, and probably at Sunderland where the disease first broke out. If I remember right there was only one chair in the room, a kettle on the fire, and the patient lay stretched out on a bed with only a slight garment on to cover her; the hands and feet, which were exposed, were quite blue, as was also the face. She had the ghastly look which the doctor so well describes. I should think from his remarks that he did not regard the case in any other light than a very severe form of the autumnal disease well known in England, and with which he was no doubt familiar. I myself, however, am of opinion that it was an example of the Asiatic cholera which had just arrived at our shores. Everyone has occasionally seen severe cases of English cholera where all the symptoms of the malignant form had been reached. There are also other cases caused by poison and by food resembling it. I once met with a severe case of the latter where scarcely a symptom of cholera was wanting. It was that of a gentleman who thought he should like to taste some sturgeon which he had seen in a fishmonger's shop. He ate heartily of this for his dinner, and soon after he began to vomit; then he was violently purged, and finally he experienced most agonising cramps in the legs; he became cold and almost pulseless. His wife was telegraphed for as it was thought he was dying. After some hours of prostra-tion he rapidly recovered. I remember well also a case of fatal poisoning by arsenic where the vomiting, purging, and collapse were so great that it resembled closely a case of cholera, and I remarked at the time that any number of cases of poisoning by arsenic might occur during a cholera epidemic and not be detected. It may be observed that in the case reported in your journal it is said that the patient had the most violent cramps and to ease her the limbs were wrapped in warm flannels. certainly is not the best treatment, since cold applications are far the best. In the numerous cases I saw, the wrapping the legs round with bandages wrung out of ice-cold water gave the most relief; everyone knows the ready method of relieving cramp in the legs when it comes on at night in a warm bed is for the occupier to jump out of his bed and stand on the cold stone of the hearth, if there should be one in the room.

This first epidemic of cholera in England was in the year 1831, and of this I have some recollection myself, not, of course, of the disease, but only of its occurrence, as I was only about six or seven years of age. Next door to the house in which I lived a lady was taken ill after the departure of her husband to business and she sent in her servant to request my mother to go and see her. This my mother did, and on her return she related how the poor woman was lying quite prostrate in bed and at the same time the doctor who had been sent for came in. He went to the

bedside, felt her hand, and then walked as far off as he could, held a bottle to his nose, said he would send her some medicine, and then departed. This made a great impression upon me, especially when my father returned home from the East India House in the afternoon and this was all related again to him. His only expression was, "What an awful disease." She was well in the morning and dead at night!

The next epidemic, in the year 1848, I well remember, for it was in the summer of that year that I went to Paris with Dr. Habershon, who was afterwards my colleague, in order that we might visit the Paris hospitals. The cholera had just entered the city and then so rapidly spread that when we went to the Hôtel Dieu one morning we found 50 cases or more had come in since the day before; one of the physicians. whose name I forget, was going through all the remedies in the pharmacopæia by way of experiment, and I think on that day he was giving manganese. Our parents wrote requesting our return, which we complied with, but thinking it better not to stay in London, then rapidly becoming a prey to the epidemic, we took our holiday in Scotland. A few days afterwards my old master Aston Key, living in St. Helen'splace, in the City, died from cholera after two days' illness, in spite of the close attention of Addison and Gull. His death causing a vacancy and also various promotions, my friend Habershon obtained his first appointment at Guy's in the dissecting-room.

It was in the next epidemic, in the summer of 1854, that I obtained so large an experience of the disease. then living in St. Thomas-street, near the hospital, and there were two consulting physicians in the Borough—Dr. Barlow and Dr. Hughes. The former's private home was at Sydenham, where he retired in the evening, and he did not come to town on Sunday. His colleague declined to visit any case of cholera, so a large amount of consultation practice fell to me at a very early period of my practice, but I need scarcely add it sadly fell off again when the epidemic was over. At that time it was clearly made out that the infection or poisonous matter was introduced through the water, and this was contaminated by the excreta of cholera patients. The case of the Broad-street pump in Soho was a striking proof of it, since it was found that more than 200 people who came there for their drinking water had been attacked. So many other examples of the same kind occurred that there could be no longer any doubt that the polluted water contained the germ of the disease. At that time bacteria were unknown and the "comma bacillus" of Koch is comparatively a new discovery. Whether this is still credited with being the "fons et origo mali" I have no knowledge, having been so long out of the profession. When the word bacteria" was first used at the Pathological Society a well-known member asked, "What had frogs to do with the He was evidently thinking of "batrachia." disease?" As regards the future, we are in a far better position than in the times of the former epidemics, owing to our improved sanitary arrangements, for then the river Thames was the main sewer. I remember well when passing over London Bridge or Blackfriars Bridge the river literally stank. the same time many parts of the suburbs were supplied by the same river for culinary and drinking purposes. The water might have come from Kingston, above where the tidal flow ceased, and might afterwards have been filtered, but it ran a great risk of being polluted when its source was so small a distance above the commencement of the tidal flows. The value of the new sewer on both sides of the river may be seen in the apparently approaching epidemic of 1866, when after the occurrence of a few cases it ceased to spread and soon afterwards quite died out. We have not, therefore, much fear for the future. This last slight outbreak ought to be remembered in connexion with that remarkably clever and originally minded man, Sir John Simon. He had not been long in his public office when the opportunity occurred for making a thorough scientific investigation of the causes and treatment of cholera. He being in a public office considered that this should be undertaken by the Government. On its assent Sir John Simon proposed that a small committee of medical men should be appointed to determine the best method of investigation, and I have now before me a letter from the medical department of the Privy Council Office inviting me with others to attend the committee, at the same time stating how unsatisfactory our present knowledge was, both with regard to nature and treatment of cholera. The Lords of Her Majesty's Council therefore required the aid of the

best-informed members of the medical profession. mention of particulars required in connexion with the disease and amongst others "post-choleraic fever." This was certainly a remarkable phase in the disease, although its presence was exceptional, and it was accompanied by a rash; models of this eruption in wax are now to be seen in the museum of Guy's Hospital. It had been observed in more than one of the epidemics. regards the committee meeting at the Privy Council Office, Dr. Bristowe and myself were chosen to do the practical work—that is, to make a special study of the disease as regards causes, contagion, treatment, &c. Probably I might have been chosen because of my knowledge of post-mortem appearances, having made several examinations of the bodies after death. The appearances I have described in my work on "Pathological Anatomy," the most notable being that of the intestines, which instead of being distended with gas lay in a small compass, feeling sodden, doughy, and flabby. I should regard this remarkable appearance as quite distinctive and enough to prove its presence without any further examination. You will thus see that I have lived during all the occasions of the cholera's invasion of England.

Last, and not least, the document ends by saying: "My Lords propose to offer you a fee of £100 for the assistance requested of you." Such an offer is so unusual that it must have been at the instigation of Sir John Simon who considered that his medical brethren should not do work for I am, Sir, yours faithfully, SAMUEL WILKS. nothing.

Hampstead, Sept. 25th, 1909.

THE NATURE OF ANGINA PECTORIS.

To the Editor of THE LANCET.

SIR,-Dr. Beddard's letter in your issue of Sept. 18th on angina pectoris in cases of mitral disease-I will not limit it to mitral "stenosis"—is very interesting to me. I am not sure whether I have or have not mentioned these cases in print, but I think I referred to them in my Mount Vernon address. At Belfast the necessarily shorter time at my disposal determined me to omit them, lest I should, really or apparently, obscure the main principles of causation.

These mitral cases, if we exclude cases of mixed or dubious nature, are exceedingly rare; so few as to present inadequate data for argument. They are absolutely so rare that I have notes of but two cases only among my own observations (neither with necropsies), and I have not been able to collect any definite addition to them from published records; for, as I need not say, the diagnosis must be unequivocal. I have been surprised indeed to find even distinguished clinical observers using the name "angina pectoris" indiscriminately—e.g., for anxious cardiac oppressions, or for agonising paroxysms of dyspnœa, such as those of high blood pressure so admirably described afresh in a recent paper by Professor Pal, and so on.

Meanwhile, I think we must suspend our judgment about these notable cases, as being exceptional. In one of my cases, attended with sudden onset of mitral regurgitation, there was some reason to suspect a mixed causation. In the somewhat frequent syphilitic angina pectoris a double lesion may of course be suspected. I hope, with Dr. Beddard's assistance, to add to our evidence on this part of the subject. I am, Sir, yours faithfully,

Cambridge, Sept. 24th, 1909.

CLIFFORD ALLBUTT.

ABSCESS OF THE BRAIN IN ASSOCIATION WITH PULMONARY DISEASE.

To the Editor of THE LANCET.

SIR,-I have read with great interest the collection of cases in the late Dr. Schorstein's lecture on the connexion between pulmonary disease and cerebral abscess, the point which particularly interests me being the absence of tubercle ba illi in the pulmonary lesions. I venture to draw attention to the following case in connexion with the pulmonary, and possibly the cerebral, lesion in some of Dr. Schorstein's series :

X.Y. was sent to hospital in China in 1904 or 1905 for pulmonary tuberculosis. He had syphilis two years before, but only attended regularly for treatment three months. His preentillness started with symptoms of peripheral neuritis which

chest then became involved and he was sent to hospital. He had been in hospital some time when I saw him in consultation. He was thin and had an evening rise of temperature with incomplete morning remission. He spat up a good deal of muco-purulent sputum which was examined for tubercle bacilli several times with negative result. There were signs of fairly extensive consolidation and some cavity formation at the right base behind. The case looked like a tuberculous broncho-pneumonia which was going downhill.

The case was considered to be syphilitic because of (a) absence of tubercle bacilli in the sputum; (β) presence of signs of active syphilis on him-i.e., an ill-defined scattered rash, and coppery scars on the legs, for which he had had insufficient treatment; (γ) the lesion being at the base of the lung and the peripheral neuritis preceding it. The man was treated by mercurial inunctions, increasing doses of iodide of potassium, and anti-tuberculous hygiene and feeding. He got quite well and returned to his ship to duty, though there was, as would be expected, some diminished air entry at the right base behind.

The case struck me very much, as I had been looking for one for some time. I think they are likely to be more numerous ashore as the patient very often attends the doctor (not his family doctor) or the hospital for his original syphilis only as long as he has symptoms. Hence the predisposing cause, insufficient treatment. It would be of some interest if Wassermann's reaction and the effect of antisyphilitic treatment were tried in cases showing persistent absence of the tubercle bacilli from the sputum together with well-marked physical signs in the lungs. This could easily be done in an institution such as the Brompton Hospital. I believe I have seen other cases of the cannot recall them.—I am, Sir, yours faithfully,
L. LINDOP, believe I have seen other cases of this nature published, but

H.M.S. New Zealand, Home Fleet, Sept. 21st, 1909.

DOMICILIARY MEDICAL TREATMENT UNDER THE POOR-LAW.

To the Editor of THE LANCET.

SIR,-Considerations of space and some diffidence in criticising a man of Dr. Major Greenwood's experience and standing were the reasons for which I contented myself with uttering a protest against the sweeping affirmations made by him in his article in your issue of Sept. 4th. At the same time I did give two most cogent reasons against his opinion that practically the whole of the lower middle and working classes would be treated gratuitously if the recommendations of the "Minority Report" were adopted. If Dr. Major Greenwood will do me the honour to read my letter again, he will see that these reasons were: 1. That the duty of recovering the whole or part of the cost from those able to pay would be imposed on the authorities. Since at the present time nearly £300,000 annually are recovered by the authorities for the maintenance of children in industrial schools, of children in deaf-and-dumb schools, of inmates of asylums, and of paupers it is quite reasonable and probable to suppose that the same success would attend the above procedure. 2. That since those medically attended by the authorities would not be able to choose their own doctors, and since tastes differ, it is again reasonable to suppose that the whole of the lower middle class and the better off of the working class will still in the majority of cases seek a doctor of their own choosing. Surely these reasons are not mere negations. I am, Sir, yours faithfully,

London, W., Sept. 26th, 1909.

H. BECKETT-OVERY.

THE DIAGNOSIS OF FEVERS IN RANGOON.

To the Editor of THE LANCET.

SIR,-Permit me to correct a statement by Lieutepant-Colonel J. R. Forrest, R.A.M.C., in a paper he read before the Society of Tropical Medicine and Hygiene on July 16th, and published in THE LANCET on July 24th, p. 229. Lieutenant-Colonel Forrest is reported to have stated: "In Rangoon they had not yet emerged far from the period when every case of fever was returned under one of three headings," &c. Lieutenant-Colonel Forrest, R.A.M.O., sent illness started with symptoms of peripheral neuritis which headings," &c. Lientenant Colonel Forrest, R.A.M.C., cleared up under strychnine, massage, and electricity. His evidently only means by the term "they" officers

in charge of British troops or cantonments, as it is evident he obtained his experience only from this source. Inquiry by him, when he was in Burma, would have revealed the fact that for the past nine years to my knowledge fevers have been carefully investigated at the Civil General Hospital, Rangoon. Numerous papers on the subject of obscure fevers had been read at monthly meetings of the British Medical Association. I am also well aware that not only in Rangoon has the diagnosis of fevers been investigated by the aid of a clinical pathological department, and that considerable interest has been roused throughout the civil surgeoncies of this province for many years past. I therefore cannot allow Lieutenant-Colonel Forrest's reported misleading statement to pass, and can only conclude that he is referring only to the methods of station hospitals.—I am, Sir, yours faithfully,

E. R. Rost, Major, I.M.S. Rangoon, Sept. 4th, 1909.

THE EXHIBITION OF QUININE.

To the Editor of THE LANCET.

SIR,-A firm believer in quinine in the prophylaxis and treatment of malaria, I have been, as I suppose many others practising in the tropics have, surprised from time to time to see a man taken ill with malaria while using prophylactic

quinine or a pyrexia resist full doses of the drug.

Everyone in the tropics carries his own medicine chest, and in 99 per cent. of cases he has been prescribing for himself quinine in the form of tablets, often the sugar-coated variety, or some similar preparation, and herein lies the fault. When the gastro-intestinal catarrh commonly associated with malaria is taken into account, I have little hesitation in saying that the dose of quinine it is desired to bring into action in the blood bears often no relation to the number of tablets, for instance, swallowed. I am equally convinced that much of the "upsetting of the stomach complained of by persons taking quinine is due to the drug being taken in these forms. There can be no doubt that the only effective method of exhibiting quinine by mouth and that causing least ill-effects is as a solution. For this reason sugar-coated tablets should cease to appear on the market and only such salts of quinine as are easily soluble in water should be made up in these forms. Would it be too great an assumption of the rôle of the physician on the part of manufacturing chemists to give directions on the label that quinine tablets should be dissolved in water before being administered?

I am, Sir, yours faithfully, HUGH S. STANNUS, M.B. Lond.. Medical Officer, Nyasaland Administration.

DARK-GROUND ILLUMINATION FOR BACTERIOLOGICAL MICROSCOPY.

To the Editor of THE LANCET.

SIR,—Having read the interesting communications by Mr. H. Wansey Bayly and Mr. Shillington Scales in your issues of Sept. 11th, p. 782, and Sept. 18th, pp. 889-90, relative to the use of dark-ground illumination in the observation of living bacteria, &c., I should like to be allowed to add a few remarks. It is generally understood that the source of light required must be much more intense than is ordinarily used in microscopical work; in fact, the makers all recommend a strong light. At first I employed the small arc lamp made by Leitz in conjunction with his dark-ground condenser when searching for spirochætæ and bacilli, but found it advantageous to reduce the intensity of the light by interposing screens. Afterwards I discarded the arc lamp for the Nernst electric lamp, and eventually, for the incandescent gas lamp, the weaker light being more pleasant to the eyes and giving a better contrast between the brightly illuminated objects and the dark background. During the last few weeks I have been using the recently improved reflecting condenser by Leitz, which absorbs less light than his first model, and in consequence I have reduced the strength of my light to the ordinary microscope oil lamp with simple bull's eye lens, and the results are certainly surprising. Spirochætæ and typhoid bacilli, for example, are distinctly shown against a perfectly black background, and the light being less injurious to the eyes I was able to work continuously for several hours without feeling the usual fatigue which follows the use of strong illuminants.

The fact that so weak a light as an oil lamp can be used satisfactorily in this mode of illumination may not be so highly appreciated by those at home as workers abroad, especially in regions where such commodities as gas and electricity are not to be found. Several workers in tropical medicine whom I have met were obliged to give up the idea of adopting this mode of illumination because of the impossibility of getting a sufficiently strong source of light.

I am, Sir, your faithfully, Crouch Bnd, N., Sept. 20th, 1909. J. W. OGILVY, F.R.M.S.

DIAGNOSIS IN THE GYMNASIUM.

To the Editor of THE LANCET.

SIR,—This morning I was consulted by a young lady with lateral curvature of the spine: she had previously been advised by her family medical man to put herself under Sandow's treatment; so she was examined by Sandow who promised to cure her for 80 guineas. The parents could not afford this amount, so they decided to consult me.

Yesterday a father and mother brought me three sons who had recently been examined by Sandow; the latter said that one had serious disease of the spine and another serious heart

disease without any ground for such diagnoses.

You must agree with me that it is bad enough to see Sandow's costly advertisements in the daily press, but it is worse when general practitioners stultify themselves by sending their patients direct to him.

I am, Sir, yours faithfully, BERNARD ROTH. Harley-street, W., Sept. 24th, 1909.

THE HYPNOTIC TREATMENT OF MORPHINISM.

To the Editor of THE LANCET.

SIR,—The problems considered by the recent International Congress on Alcoholism in London are of world-wide importance, and the British Government showed a far-seeing comprehension of the needs of the times by inviting the principal Governments of Europe and America to send to this Congress their official representatives. Nothing but good can come from such a convention in which are assembled the most distinguished scholars and ablest specialists from the foremost nations of the world.

Among the drugs that enslave, the two with which the physicians of the United States are especially concerned are alcohol and morphine. While alcoholic intoxication is an ancient and well-understood condition, morphinism is a modern disease and has not received the attention from the medical profession which it deserves. It was almost unknown in the United States before the invention of the hypodermic syringe about 50 years ago, but now it has spread through that and other nations till it has become a world-wide menace to mankind. Unlike alcoholism, morphinism is not a social vice. It flourishes alone and in the dark. Unsuspected by the victim and unknown to his friends morphine quietly and insidiously becomes master and owner of the patient's brain and nerves, and steadily month by month drags him down to mental incapacity and to physical ruin. From first to last the victim of morphinism is in perpetual slavery. He does not have a day or a week of bondage, followed by a period of freedom, as is usually the case with alcoholics. Every day in the week and every week in the year the morphine yoke bears heavily upon him and escape is impossible without medical aid. As physicians well know, morphine cannot be denied an addict for 24 hours without causing great suffering, and after 48 hours of abstinence the agony is beyond the power of human nature voluntarily to endure. Neither is harmless moderation possible. If this drug is used daily, even in very small doses, the patient soon becomes a helpless slave to it. Morphinism is not a mere habit, but is a serious pathological condition. The will cannot be invoked for its cure as it is a disease in which the will is not a factor. It is as absurd to ask an addict to stop the use of morphine as to ask him to amputate his own arm. He can be cured only by a thorough course of sanatorium treatment. All other methods are a delusion and a snare.

The morphine addict could easily be cured, in fact, he could cure himself if it were not for the extreme suffering caused by depriving him of the drug. These withdrawal pains are so great that he is naturally willing to resort to the

most desperate means to obtain the drug which he knows will give him prompt and sure relief. Thus it becomes evident that all possibility of self-help is out of the question. Fear that he will suffer in the same way if he goes to an institution for treatment deters him from seeking remedial aid. How to cure these patients without suffering is, therefore, the most important factor in the problem. generally been considered impossible. I am convinced by years of experience in a sanatorium devoted to this specialty, that morphine can never be eliminated from an addict without suffering, if he is conscious, any more than his hand could be amputated without pain under similar circumstances. I therefore lay down the general principle that sleep solves the problem of the painless withdrawal of morphine as it has solved the problem of painless surgery. I have described this method of treating morphinism in other published papers. Briefly, it consists in keeping the patient asleep or in a somnolent state for a short time by the use of some of the hypnotic remedies that are familiar to all physicians. While the patient is thus somnolent the morphine is withdrawn. When he awakes the painful period is passed and all desire for morphine is gone. He then begins again to see clearly and to think normally. His outlook on life has entirely changed. Like John on Patmos, he beholds "a new heaven and a new earth." He begins once more to really live. While all this has been accomplished the patient has not suffered one minute of pain. The principle is the same as the administration of anæsthetics to obliterate the pain of a surgical operation. In carrying out this plan of treatment the physician's armamentarium should contain most of the hypnotic remedies, as no one remedy is sufficient. Among these hyoscine has been recommended, but I do not approve of it. It is a very uncertain, if not a dangerous, drug. For ten years I have been continuously using apomorphine in my sanatorium work for hypnotic purposes, and have found that in promptness and certainty of action it has no equal. While there are few infallible remedies, and this one may occasionally fail, yet among the hypnotics I know of none that is so certain in its effects. Its safety is another advantage. As one-tenth of a grain is universally considered a safe emetic dose, the hypnotic dose of one-thirtieth of a grain must be absolutely devoid of danger. The old gradual reduction method consists in reducing the size of the morphine dose daily till zero is reached. This means long-drawn-out misery for the patient as well as uncertain results. On the other hand, the method herein described is not only painless but sure. The after-treatment of morphinism is very important and should last several weeks. In addition to the products of the Pharmacopeia I find high-frequency electricity, mechanical vibration, light therapy, &c., often of great value during this period.

To the resolution of the International Conference at Shanghai last February asking for international investigation regarding methods of treatment for the opium habit, I would make this reply: Morphinism can be cured surely, safely, and painlessly by a method that has been repeatedly used with all classes of patients under careful scientific observation. This method consists in artificially inducing the somnolent state during the withdrawal period.

I am, Sir, yours faithfully,

C. J. DOUGLAS, M.D.

The Douglas Sanatorium, Dorchester, Mass., U.S.A., Sept. 20th, 1909

RAT DESTRUCTION ON SHIPS.

To the Editor of THE LANCET.

SIR,—My attention has been called to the report in your issue of the 18th inst. on the Sixteenth International Medical Congress at Budapest in which, on p. 875, Dr. Belleli is reported to have said in the course of a discussion on the different methods employed for the destruction of rats in ships that "the Clayton gases damage several kinds of goods; silks are discoloured by it, tea loses its aroma, and cargoes of silk and tea are constantly arriving from the Far East, representing an enormous total value." Of course, you give only a short summary of Dr. Belleli's remarks, but if Dr. Belleli declared without qualification that silks are discoloured and that tea loses its aroma when exposed to the action of the gas produced by my machine during the process of rat destruction on board ship, I can only say that he is very much misinformed. Numbers of vessels under all flags

have had their rats destroyed with silk and tea in their holds without any damage whatever resulting to these goods. The silks, of course, are in bales, thoroughly protected by careful wrapping; the tea is in chests lined with tin-foil. It is very doubtful whether the gas penetrates the bales of silks, and still more questionable whether it passes through the tin-foil protecting the tea. But, in any case, the fact remains that no damage has ever resulted to such goods, and this can be attested by numerous firms in London and elsewhere who have had practical experience in the matter.

I am at Dr. Belleli's disposal to furnish him proofs of what I state and to give him facilities to carry out any experiments he desires, and I trust that you will give to this letter the same publicity as you have given to your correspondent's résumé of Dr. Belleli's remarks.

I am, Sir, yours faithfully,

Paris, Sept. 22nd, 1909.

T. A. CLAYTON.

THE RECENT NAVAL COURT-MARTIAL.

To the Editor of THE LANCET.

SIR,-All naval medical officers will approve of your note on the foolish proceedings taken at a court-martial against Fleet-Surgeon C. G. Matthew, but such a situation as is described should be impossible. It clearly resulted from the want of definite assignment of rank in the titles of naval medical officers. The commander could not have behaved so petulantly towards an officer whose rank was the equal of his own if that rank had been quite clearly marked in the title by which the fleet-surgeon was addressed. The title "Fleet-Surgeon" merely indicated to the commander an officer of seniority but of a subordinated branch. The title "Commander" would mark a man as an officer whom by instinct another commander would deal with as an equal. In the army the commander in this case would at his age have probably been a major and the fleet-surgeon a lieutenantcolonel, when such abuse of authority could never have occurred. If the Admiralty desire to prevent such occurrences in future they will attend to this lesson of the case. If rank, however, cannot be given, pay can, and increased pay generally secures increased consideration. If the Admiralty Committee on the Naval Medical Department cannot recommend more definite titular rank it should recommend material increase of pay to compensate for the obvious hardships which this case shows may lie before professional men who join the navy rather than the other military services of the State.

I am, Sir, yours faithfully.

Sept. 25th, 1909.

A. B. C.

** We doubt the value of our correspondent's proposal to obviate such occurrences by titular alterations.—Ed. L.

NURSING IN MONTGOMERYSHIRE.—A scheme for the formation of a County Nursing Association was discussed at a largely attended meeting held at the Victoria Hall, Newton, Montgomeryshire, on Sept. 14th. Mr. David Davies, M.P., presided, and in his opening remarks pointed out that at the present moment no provision existed for nurses in rural districts in the county. Nursing associations had been formed, he believed, in connexion with every county in England. Wales, however, was very backward with regard to provision for nurses. Mr. C. E. Humphreys, medical officer for the county, said that the ideal nurse that was required for rural districts was a combination of district nurse and maternity nurse. county nursing association ought to be able to supervise its nurses in the same way that midwives were supervised. With regard to the training of nurses, they should not go through a three years' course but a 10 or 12 months' course—four as maternity nurses and eight as district nurses. They would also act as health visitors to teach poor women the best way to feed and care for the children. The establishment of such a system of nursing throughout the country would have a great effect in diminishing the infantile mortality which at present stood very high. The Montgomery County Nursing Association was subsequently constituted, Mrs. Edward Davies being appointed president. The executive committee, consisting of 18 members, includes the names of Dr. Rees, Mr. W. E. L. Davies, Mr. R. D. Thomas, and Mr. N. W.

THE TERRITORIAL MEDICAL SERVICE. (FROM A SPECIAL CORRESPONDENT.)

VI.—THE MEDICAL ASPECT OF THE FOOD-SUPPLY OF THE SOLDIER.

A PROPER food-supply is absolutely necessary for health, vigour, and energy during the performance of military duties and too much attention cannot be paid to the arrangement of a proper dietary and its culinary preparations. The rations of the soldier are at all times a matter of great importance, but in war the success of a campaign depends materially on them. If food-supplies fail or are scanty on active service debility will ensue; debility leads to disease, and disease to disaster in military operations. The lack of suitable food broke the back of Napoleon's great army in Poland in 1806, and again led to his disastrous retreat from Moscow in 1812, in which he lost 400,000 men. Want of sufficient food led to our retreat to Corunna; it also caused disasters in the Orimea and in many other campaigns which furnish a list too lengthy to mention. Parkes, one of our greatest military medical authorities on food-supplies in war, writing on their failure, states: "The effect of food upon strength, endurance, and even courage is remarkable. It is useless to supply the ammunition for guns if the men who have to work them have no supply of energy issued also to them." General Sherman says the four most important duties of the commander of an army should be the proper supply of food to his soldiers, of suitable clothing according to climate, of shelter from the weather, and of prompt medical assistance to the sick and wounded. These are four duties a commander should never neglect personally to attend to, for who, after all, should take so much interest in the welfare of the soldier as their general, who owes them a lasting debt of gratitude for his fame, towards the attainment of which they so largely contribute. In the army every officer, from the general in supreme command to the last omeer, from the general in supreme command to the last joined subaltern, must give the subject of rations and the feeding of their men the closest personal attention, for the troops in this matter depend entirely on their officers. Once the troops are satisfied that their superiors are doing their best in this respect they will not "grouse," and will bear cheerfully the most severe privations. So much depends on food, especially in war, that the soldier should have the best in the market, and there should be no "cheeseparing" policy, so long as economy of transport is not interfered

Modern physiological research proves that the composition of foodstuffs is most complex and that besides calculating their energy value it is also necessary to consider their chemical composition and the questions of personal likes and dislikes of the consumers. Rations that are unpalatable and consumed without relish by troops cannot in all cases be regarded as physiologically beneficial, and general health may suffer. A dietary loses its value if it is very monotonous, and it has been held, imaginative though it may seem, that on active service this monotony makes troops liable to scurvy. The causes of scorbutic conditions met with on field service are as yet imperfectly understood, and while in some cases they have been attributed to the use of tinned meats and preserved vegetables, the writer has noticed many of the signs and symptoms of scorbutic affections appear not only in troops on service but also amongst others in civil life at home and abroad amongst whom fresh meat and fresh vegetables were their daily diet, but where the necessary variations in diet were not employed; and he is forced to conclude that a "sameness of diet" or, so to speak, a want of variation may be considered the causal factor. The recruit usually will require more food than the fully trained soldier, as the majority of the newly joined soldiers are growing lads and were perhaps out of employment and badly fed before enlistment. The main factors determining the amount of food necessary for the soldier must be the amount of physical work he has to do and the amount of muscular energy necessary to perform this. The harder the work the more the amount of food required, and with strenuous exertions an average of more than 4000. Calories must be provided if his strength and military

efficiency are to be maintained. The popular idea that the Japanese army in the Russo-Japanese war consumed very little food is erroneous, as their war ration was considerably higher in energy value than that of our own army during the South African war, although the ration of the latter represented a fairly reasonable basis. During war the troops have to depend to a large extent upon preserved rations, notably tinned meat; the palatability and quality of the various brands of the latter are subject to great variations.

In the report upon the food of the soldier,2 recently issued by the subcommittee of the Advisory Board to the Medical Services appointed by the War Office, many important suggestions have been made as a result of its investigations. In regard to the amount of fat in tinned meat the subcommittee considers that meat with less than 10 per cent. or more than 15 per cent. of fat is unpalatable to most men. It also considers that the reason why tins of meat after passing the tests applied by the manufacturers become suddenly blown after keeping good for months or maybe years, a condition thought to be due to minute punctures occurring from rust or damage allowing air to enter, is really that development occurs of spores of bacilli, such as the bacillus cadaveris, which were present in the meat at the time of packing and were not destroyed by sterilisation, the heat of sterilisation having been insufficient to penetrate to the central parts of the meat in the tin. In some cases the amount of nitrate derived from the pickling fluid was found excessive, and its ingestion would probably cause gastric derangement. The nature of "can-burn" was found to be due to a deposit of sulphide of tin, sulphide of iron, and oleate of iron. The subcommittee came to the following sound and practical conclusions: (1) That the soldier, both the recruit and the trained soldier, receives sufficient food during peace time and that its quality and variety are generally satisfactory; (2) that further investigations concerning the field service rations are needed; (3) that the supply of tinned meat requires careful supervision, for some brands contained meats of inferior quality; (4) that to prevent "blowing" of tins the lowest temperature of the surrounding sterilising fluid during manufacture which will completely sterilise the tins within a reasonable time is 120° C. (248° F.), and that this temperature must act for not less than 60 minutes; and (5) that the amount of fat in tinned meat should be from 10 to 15 per cent. It was recommended that the preparation of tinned meats should continue to receive, as at present, the careful supervision of the supply branch of the army, and that there should be a definite relation between the weight of a tin and its contents. The tins should be painted and not lacquered, and no paper labels should be used (these cause perforation by becoming damp and corrosion by rust); all tins to have their date of issue embossed on the tin; sample tins to be examined after incubation for a fortnight at 37° C.

Next to having a proper food-supply for troops is the importance of its preparation. Too much attention cannot be paid to good cooking, and Territorial soldiers, like the regular army, should be trained individually to be able to cook for themselves while in camp, as in war time it often occurs that a man may have to cook his own rations. The want of knowledge in elementary cooking amongst men generally is appalling. Even in the regular army in the early days of the South African war the writer frequently came across officers and men who could neither light a fire in the open nor cook food, nor in some cases even make their own tea.

Soldiers seldom complain on service of their rations, they accept the inevitable, and for this reason the greatest supervision ought to be exercised by all officers, not only over the supplies they receive, but also over the methods of preparation, cooking, and service in the field. Troops consider it unsoldierlike to complain on service unless things are very bad; as a rule they content themselves and have a strong pride about roughing it, a pride almost professional, which hinders them making any complaint. The subject of cooking in the army is one that has occupied the War Office authorities much of late, and it is one of considerable importance. In India General Burnett, when commanding the Poona Division, started a school of cookery in which selected men from all regiments now undergo courses of instruction. Such instruction is greatly appreciated, and its

¹ Nos. I., II., IV., and V. were published in The LANCET of July 31st, August 7th, 14th, and 21st, and Sept. 25th, 1909, respectively.

² See THE LARCET, July 17th, 1909, p. 157.

provision should be encouraged in every possible way. To cook well and rapidly is an art which can be easily acquired, and which every officer and man should learn. It is also desirable in peace time that men should be in-structed in the slaughtering of cattle, the cutting up and issuing of meat, and the construction of field kitchens. A roster should be kept regimentally of the names of all men so instructed, and each man should be marked off and his name registered when passed as efficient. This system was introduced in India by Lord Kitchener, and it has proved most successful. During recent years the question of supplying troops on active service with food cooked in travelling kitchens has engaged the attention of the continental powers as well as our own War Office. In order to obtain a field kitchen of a transportable nature suitable for the German army the German Ministry for War offered a prize open to a public competition in 1905 and 1906. The special conditions laid down as necessary were that the field kitchen should be constructed as a two-horse four-wheeled vehicle, the hind carriage to be easily detachable from the front part of the car, and each section to be capable of being drawn by one horse and used independently if necessary. The kitchen must be able to follow infantry along roads at a trot and also to be capable of transit over soft or uneven ground. The hind car must carry the kitchen utensils, extra rations for the horses, fuel for one day, drivers' baggage, and 200 extra rations for the troops in a separate compartment. The total weight of the loaded vehicle, exclusive of the drivers, must not exceed 1100 kilogrammes. All varieties of rations were to be cooked, and special arrangements were to be employed to prevent the danger of burning the food by the use of a bath of glycerine. As a result of the trials a field kitchen was finally selected comprising a copper holding 200 litres in a boiling bath, and a boiler holding 70 litres of water for making tea or coffee; both these boilers may be heated either singly or together. The boiling bath surrounds the whole of the inner copper and prevents the food being burned. The fuel used may be either coal, wood, or peat, and after 12 hours the temperature of the food still has a warmth of 140° F., and was palatable up to 72 hours When the food is being served out, or when the kitchen is being cleaned, the fore part of the vehicle may be sent away for a fresh supply of food. It has since been decided to supply a complete travelling kitchen to each company of infantry, battery of artillery, The troops will, however, still carry their mess tins and be trained to cook for themselves. The wheeled kitchens are filled up from the company supply wagons, which carry one day's rations, three tea rations per man, and one day's rations for each riding horse, besides butcher's utensils, each company having its own skilled butcher. The company supply carts are filled from the supply columns and other central stores, or else by local purchase. Another cart for supply purposes acting as a canteen where the troops can purchase food, is also allotted to each battalion. During the German military manœuvres at Jauer and Seignitz in August, 1908, at the midday halt, cattle were slaughtered on the spot and cut up and cooked for two battalions of infantry; each company prepared their dinners differently, using only their mess tins and making fires of wood carried by themselves. Another pattern of travelling kitchen acts as a steamer, the central boiler having steam passed through it. Ten camp kettles, each containing rations for 12 men, are put in the steamer before marching, and on arrival at the midday halt they contain a savoury stew. Much time is thus saved from not having to cook food on arrival. Digester boilers have also been tried in which the food is rapidly cooked under high-steam pressure which reduces the toughest meat to tenderness. Another pattern is the Swedish feltcovered boiler which keeps food warm for a considerable time. At the Austrian manœuvres of 1908 Daimler motor kitchens were tried with considerable success; these appear more adaptable for battalion cooking than for company work. Another great advantage is that they can be rapidly moved from the rear to the front and they supply cooked food when the troops halt at midday. Our own War Office is at present making trials of a travelling kitchen at manœuvres.

I will conclude the consideration of the important subject of the food-supply of the soldier on active service with a few general remarks, for the elementary nature of which I must applopise to readers of THE LANCET. Men's rations should be most other counties as well.

varied from day to day as far as possible, and no opportunity should be lost of obtaining fresh green vegetables. Lord Wolseley has suggested that mustard and cress seed might be sent on field service, and the idea is certainly a novel one that might be usefully employed on the lines of communication or in blockhouse gardens, as all green vegetables are good anti-scorbutics. Officers and men should always have something to eat and drink before they commence a day's work, no matter how little and no matter how early. A cup of hot tea, coffee, or cocoa and a few biscuits will suffice for an early morning meal before a regular breakfast. The regulations state that "regimental arrangements should be made for a cup of hot coffee to be provided at night for every sentry on guard"; this is an important order and medical officers should inquire concerning its being carried out. All officers should be sufficiently interested in the welfare of their men to look after their rations, and if they find them insufficient or of bad quality they should report the fact at once; they should also see that their men get hot meals as often as possible, but more especially are these valuable after a long march or a hard day's fighting. When men are employed on patrols, picquets, or any kind of outpost duty it should be ascertained that their rations are sufficient for at least 24 hours (cooked if necessary), and that water-bottles have been filled before starting. If an advance guard of a force is much harassed during the day they should not be employed for outpost or other duty during the night; fresh troops should be sent out if mili-tary exigencies allow. This will allow the advance guard to have their food and rest in comfort.

One of the most important considerations on service is that of transport for rations. The average weight of a man's ration is 3 to 4 pounds, and it cannot be reduced with safety below 3½ pounds. In times of emergency the soldier can carry four or five days' supplies if put to it, but in hilly countries, where it is essential that European troops should be burdened as little as possible, they should as a rule only be made to carry one day's supplies. The reserve supplies must be carried either on transport wagons in the case of flat country or where there are roads, or on pack mules in the case of hilly countries; the latter can generally travel anywhere that infantry can go. Men should always start a day's march with biscuits, emergency ration, and either preserved meat or cooked fresh meat in their mess tins.

A great deal of what has been written in this series of articles must have been very well known to medical readers, but the intention was to bring to the notice of the medical officers of the Territorial Service as far as possible all the points where their practical knowledge would be required, and the carrying out of this intention made the inclusion of certain elementary information necessary.

Pediculosis in Devonshire.—We learn from the Exeter Gazette that the prevention of pediculosis amongst school children occupied the attention of the Devon county council on Sept. 24th. The education committee had recommended the appointment of three special nurses at a salary not exceeding £80 for one year to work under the direction of the county medical officer and deal with the disease thoroughly. Sir Thomas Acland moved the adoption of the report on the grounds that the school inspectors' letters of admonition to the parents of infected children had failed to produce any improvement, a statement that was contradicted. Other members objected on the score of expense to the ratepayers, and an amendment was moved to the effect that the matter stand over until the report on medical inspection of schools had been received. In the debate that followed it was stated that 50 per cent. of the council's school children were infected with lice. The chairman, Earl Fortescue, put the number down at "something like 10,000 unfortunate little girls," but he considered that the necessary cleansing could be done by district nurses and others, and he supported the amendment, which was carried by a large majority, although Sir Thomas Acland pleaded for the adoption of the report on behalf of the children at present uninfected and their parents. It is obvious that a liberal use of the scissors is desirable in the elementary girls' schools of Devon, and for that matter in

THE

NINTH INTERNATIONAL VETERINARY CONGRESS AT THE HAGUE, SEPT. 14th to 19th.

(FROM A SPECIAL CORRESPONDENT.)

AMONGST the numerous subjects set down for discussion in the programme of the recent International Veterinary Congress it is not surprising that tuberculosis occupied a prominent position.

Governmental Efforts against Tuberoulosis, with Regard to the Ways of Infection in this Disease,

was the title under which the main issue was discussed, although several papers of general interest were presented under sectional headings.

Dr. BANG (Copenhagen), dealing with his subject at great length, stated that tuberculosis may be spread amongst calves and pigs by the milk they drink, and especially by the milk products returned from the cooperating dairies. legal provisions existing in Denmark since 1898 to avert this danger enforce the heating of skimmed milk, butter milk, &c., in the dairies to 80° C., and supervision of the execution of these provisions. He does not, however, think this control satisfactory, as it is not frequently enough practised, and he intimates that the best control might be obtained by choosing among the farmers in every dairy district a member upon whom the task would be incumbent of examining the milk every day according to Storch's method. Notwithstanding the unsatisfactory supervision, the Danish provisions have rendered invaluable prophylactic services against the spread of tuberculosis, and Dr. Bang urgently recommends the in-troduction of similar provisions into all those countries where the skimmed milk, &c., from the dairies is returned to the purveyors.

Professor Dewar (Edinburgh) regretted that, although an animal may be condemned as a milk-producer, the law does not give power to seize and destroy her. She can be turned out of the dairy byre, but she may be sold into some adjacent district in which inspection is lax or non-existent and continue to communicate tuberculosis to those consuming her milk. In considering the problem of the suppression or eradication of tuberculosis it is at once evident that it may be looked at from two very different standpoints—from the public health point of view, mostly as it affects meat and milk and the manner in which these may communicate the disease to human beings; and from the veterinary and agricultural point of view, by taking account only of how the disease is propagated and disseminated amongst animals and the losses it causes amongst our heards.

Dr. J. Poels (Rotterdam) said that the breeding of calves free from tuberculosis should be promoted and the eximmed milk should only be delivered pasteurised. In every country a central governmental laboratory should be established where morbid material and milk could be examined bacteriologically for the assistance of veterinary surgeons and proprietors of cattle in discovering the animals suffering from tuberculosis. Dr. Poels suggested the forming of an International Tuberculosis Committee for the purpose of fighting tuberculosis in cattle. He continued: "From the German statistics it appears that the number of deaths from tuberculosis in mankind diminishes, whereas the tuberculosis in cattle and pigs increases in many countries in an alarming degree. The fighting of tuberculosis amongst human beings will in the near future not be dependent on individual ideas but it will be considered a general public necessity and take rapid strides forward, and the expenses incurred for this work will be paid reluctantly at the commencement but finally with eagerness by the different states. Why has so little been done to fight against cattle tuberculosis, whereas almost every country takes or has taken strong measures against other conbagious cattle diseases? The answer will be that it costs too much. This, however, cannot be given as a reason, as the damage caused by tuberculosis is so large that the Government are no longer justified in hesitating to act on the score of expense. If the Governments are unable or unwilling to bear these expenses then they should be met by the establishment of a State fund, which can be supported by introducing a

poll-tax charged so much per cow. The idea that tuberculosis can be quickly overcome is prejudicial to the keeping up of measures to fight this disease. This idea is quite false, for many years must elapse before a marked improvement can many years must elapse before a market improvement can take place, so that posterity will profit by the fruits of our endeavours more than we. Now comes the difficult question, How have the Governments to fight? Veterinarians are split up into two parties. The one party wishes to follow Dr. Bang's suggestion—i.e., that cattle on all farms should be tested by competent veterinarians with the tuberculin test, and the herd then divided into two portions, tuberculous and non-tuberculous. Of the former those with clinical signs of tuberculosis should be slaughtered, the remainder being allowed to live out the ordinary course of their lives, all their milk being boiled before being used for food of man or animal, and any calves they produce must be immediately placed among the non-infected portion of the herd, as it has been found that it is only an almost negligible proportion of calves which are tuberculous at birth. The other party is desirous of following Ostertag (Germany) who suggests even more drastic measures." Dr. Poels concluded with an eloquent appeal to the Congress inviting the members to make attempts for promoting more harmony than has been shown in the past. "I will ask," he said, "in what way can the Congress be of service in bringing about the necessary unity? According to my idea this may be attained by establishing an international committee to fight against tuberculosis; this tuberculosis committee to work at the International Veterinary Congress and assemble once a year for the purpose of bringing a complete report of its efforts to each congress. The committee to be, therefore, a subdivision of the Congress. I suggest that this Congress appoint such a committee at once.

Vaccination Against Tuberculosis

was the subject discussed by Dr. EBER (Germany), Dr. HEYMANS (Belgium), Dr. KLIMNER (Germany), Dr. STRUTZ (Germany), and M. H. VALLÉE (France). The method of vaccination recommended is the introduction of non-attenuated tuberculous bacilli enclosed in a dialysing membrane, which permits the endosmosis of the nutritive substances of the organism and the exosmosis of the products from bacillary activity. As a dialysing membrane the most appropriate is the endodermis of a reed used simply or reinforced by a thin layer of collodion. Such bags placed in a glycerinated bouillon allow the bacilli that they contain to multiply and render it rich in tuberculin. These little bags containing bacilli, hermetically closed and placed in a gelatin capsule, make a vaccine which can be used without danger and can be easily employed on bovines. Inserted under the skin behind the shoulder with a trocar, the vaccine becomes encysted and forms a vaccinatory tubercle. With the exception of Dr. Heymans the speakers were of the opinion that up to the present the results have been unsatisfactory and that the immunity of animals has not been yet procured by this method of treatment. Several members of the Congress availed themselves of the opportunity afforded them of a visit to the State Veterinary Bacteriological Institute at Rotterdam, where several sera not yet in use in this country are produced. They have here a serum used in connexion with tuberculosis, but the results so far have not been very successful, although, on the other hand, mammitis and mastitis are successfully dealt with.

The Transmission of Avian Tuberoulosis to Mammals.

Under this heading Dr. ARLOING (Lyons), Dr. G. MOHLER (Washington), and Dr. BANG contributed convincing papers on the relationship of the organisms. These three observers were unanimous in their conclusions that avian tuberculosis is not a special disease caused by a special bacillus but a modified form of the bacillus described by Koch as the infective agent in human tuberculosis, with which it appears the avian bacillus is connected by common primary characters and from which it can be distinguished by secondary and, moreover, inconstant properties. Dr. Mohler maintained that the ravages of tuberculosis in the avian family are so patent that the gravity and increasing prevalence of this affection must not be ignored. The outbreak of fowl tuberculosis in the United States was not reported until 1900, when it was observed in Oregon; since then the disease has been located in California, New York, Michigan, and Canada. In the cases investigated by the Pathological Division of the American Bureau of Animal Industry both

dead and live birds were received showing both incipient and generalised tuberculosis as attested by microscopic demonstration of the tubercle bacillus and the feeding experi-ments which resulted successfully in from three to five months. The importance of continued investigation along this line is shown by the fact that numerous vague diagnoses under the title of liver disease, spotted liver, rheumatism, &c., are common amongst people interested in poultry. Some of these disorders have been proved to be tuberculosis, which suggests that avian tuberculosis is rapidly becoming disseminated. The finding by all investigators of multitudes of tubercle bacilli in the fæces suggests the ease with which the disease may be spread throughout the flock. Dr. Mohler mentioned an interesting case in which some chickens were affected with tuberculosis and after death their carcasses were eaten by pigs on the same farm which in turn developed tuberculosis. In order more definitely to connect the two cases a pig proved by the tuberculin test to be free from the complaint was fed upon the carcass of one of these birds, and when killed at the end of 104 days the pig was found to be tuberculous. Another interesting case concerned an egg laid by a tuberculous hen. It was carefully opened aseptically at the larger end and numerous smears were made of its contents. No tubercle bacilli could be determined by these means, so recourse was had to guinea-pig inoculation. The syringe was carefully filled with white of the egg without disturbing the yelk, and two guinea-pigs were at once inoculated intra-abdominally. Following this the process was repeated on other guinea-pigs using the yelk as material for injection. 36 days after these inoculations one of the guinea-pigs that had received a portion of the white of the egg died. On examination a degenerated area some 5 by 20 millimetres was found between the muscular layers of the abdominal walls. This area appeared inflamed and contained numerous small yellowish-white foci in which on microscopical examination numerous tubercle bacilli were found. The spleen of this guinea-pig was enlarged to fully three times its natural size and was considerably darkened in its colour. No tuberculous foci were visible in this organ, but the presence of tubercle bacilli was readily demonstrated by means of smears. The carcass of the guinea-pig was in excellent condition, showing no emaciation. The other guinea-pig, which received an inoculation with white of egg, died on the forty-third day, and although no tuberculous foci were determined, the spleen and the mesenteric glands contained such numbers of tubercle bacilli as to produce well-marked lesions in guinea-pigs sub-inoculated with them. From these lesions typical avian cultures were recovered upon egg media. The guinea-pigs receiving yelk inoculations failed to develop tuberculosis after observation for 68 days followed by necropsy. With these facts established the following conclusions were arrived at. Eggs produced by tuberculous fowls should be considered dangerous until cooked as they may harbour tubercle bacilli in important numbers. Tubercle bacilli of one species may be transmitted to an animal of a different species, which fact makes it apparent that any preventive methods for controlling tuberculosis to be successful must take into consideration all species of animals that are susceptible to tuberculosis.

Dr. L. DE BLIECK (Dutch East Indies) Mr. J. LIGNIÈRES (Argentine), M. L. PANISSET (France), Dr. J. SCHNÜRER (Austria), Dr. A. WLADIMIROFF (Russia), and Dr. SCHÜTZ (Germany) presented reports on

The Diagnosis of Infectious Diseases by Means of the Recently Discovered Reactions of Immunity.

Notwithstanding that the subcutaneons injection of tuberculin and mallein were excepted from these papers the majority of the reporters confined their discourse to these two tests. Dr. DE BLIECK dealt with the application made in veterinary medicine of the reactions of immunity to reveal contagious diseases, either agglutination, fixation with alexin, cutaneous and ophthalmic reactions of tuberculin and of mallein. From these papers the following conclusions were drawn: (1) reactions of immunity are of great value for the diagnosis of infectious diseases; (2) the comparative study of the various reactions, especially of the cutaneous and the ophthalmic, with a view to their extended employment, was recommended by the Congress; (3) the ophthalmic reaction is specific for distemper, and sero-diagnosis deserves to be tested further; and (4) these methods, wherever it is possible, should be employed in conjunction, but serodiagnosis should be done only in central laboratories.

Tropical Diseases of Animals formed the fifth section of the programme. Under this heading

Teaching and Laboratories for Research in Tropical Diseases received the attention of Dr. DE BLIECK, Dr. J. DE DOES (Netherlands). Dr. P. KNUTH (Germany), and M. H. VALLEB (France), who were all of opinion that it was of the greatest importance that those countries having colonies in the tropical or sub-tropical regions should institute special schools for the training of such veterinary surgeons as they may require to practise in those colonies. It is also necessary when training veterinary surgeons destined for the colonies to prepare them as thoroughly as possible, not only with regard to veterinary science, but also with regard to agricultural economy. The fact should never be lost sight of that colonial veterinary surgeons will be called upon to assist the labours of merchants and farmers, and in every respect much must be required from them in the future. It is therefore the duty of the authorities to secure for them a good social and pecuniary position, in order that a staff of veterinary surgeons may be formed as soon as possible, who will, so to speak, regard the colony as their second native country. It is satisfactory to note that our newest colony-i.e., the Transvaal—is the proud possessor of the newest and most perfectly equipped bacteriological laboratories yet erected in any colony.

Hygiene in the Maritime Transport of Cattle

was a subject which elicited papers by Mayor HOOGKAMER (Netherlands) and Mr. RICKMANN (Germany), who proposed a code of rules regulating the sanitary conditions to be observed in the transport of cattle and skins, advocating thorough disinfection.

The Prophylaxis and Pathology of Protocoan Diseases.

This topic was introduced by Dr. Knuth (Germany) and led to a discussion in which the following conclusions were enunciated concerning the prophylactic measures to be taken against protozoan diseases. In the present state of scientific knowledge the chief safeguard against piroplasmosis rests in protection against ticks, and, wherever the disease shows itself, destruction of ticks. In places free from ticks, and wherever ticks have been destroyed, it will be advisable to kill all animals infected. In trypanosomiasis, appliance of special chemical medicines offers the greatest chance of success. Moreover, endeavours should be made to destroy stinging flies, known as propagators, and infected animals should be killed.

Dr. THEILER (South Africa) submitted the following motions to the meeting at the close of the discussion on the subject, and they were carried unanimously:-

1. The Veterinary Congress at the Hague reaffirms the recommendations formulated at the Congress at Budapest, and impresses upon the Governments which have not yet organised a veterinary service the necessity for doing so with as little delay as possible.

2. It is necessary for the control of animal plagues in the colonies that all Governments concerned should materially encourage the study of such diseases. Since the biology of a disease must form the basis of all veterinary operations of an administrative character, it is desirable that wherever possible scientific veterinary investigators should be sent into territories where diseases which have not yet been investigated are prevalent, and since the work of these investigators will be of common interest both from the scientific point of view as well as from that of State veterinary medicine it should be communicated to all Governments concerned.

3. For the purpose of carrying out these proposals there should be

3. For the purpose of carrying out these proposals there should be established an International Bureau of Tropical Diseases of Animals, consisting of veterinary representatives from all the countries concerned, and the international bureau should publish a bulletia giving the results of all recent international publications dealing with tropical diseases of animals.

The Government Control of Sera and Bacterial Products and their Preparation by Government

was opposed by Professor E. LECLAINCHE (France), who defended the preparation of serums by individuals—that is to say, by the inventors themselves, those being the best people to improve them later. Other speakers were of opinion that preparation by the State would be desirable. The following resolution was unanimously adopted:

In default of direct preparation by the State of products of bacterial nature for the use of the veterinary profession, the preparation and the sale of these products should be placed under the control of the State.

Dr. E. F. BASHFORD dealt with

The Etiology and Pathogeny of Malignant Tumours.

He dealt with conclusions derived from the study of cancer which have been so lately published in THE LANCET that there is no need to repeat them, but he paid a full and grateful tribute to the assistance which cancer research had derived from veterinarians, amongst whom, he said, the name of Jensen will always be associated with the experimental study of cancer.

The Congress sat for six days, the closing address being given by His Excellency the Minister of Agriculture, Industry, and Commerce for Holland, who officially announced that the next International Veterinary Congress will be held in London in 1913.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Annual Report of the Medical Officer of Health.

THE annual report of the medical officer of health is more than a mere collection of statistics; it is full of human interest and reveals considerable progress in the moral and physical well-being of the city. The general death-rate of 15.9 per 1000 was the lowest ever recorded, but this favourable statement is somewhat misleading, for the population of Birmingham has to an exceptional extent overflowed its boundaries, and the death-rate of what may be called greater Birmingham was 14 1. For some years there has been a very desirable movement outwards and the central parts of the city have been decreasing in population at a rapid rate. This is largely due to the improvement in means of transit and the pulling down of houses in order to build offices and works. Unfortunately the movement to the suburbs means the development of surrounding towns entirely due to the overflow of the Birmingham population. King's Norton and Yardley to the south have increased at the rate of 178 per cent. and 237 per cent. respectively, and districts on the north show a similar increase. From a purely health point of view it is unfortunate that the Birmingham population should have a multiplicity of authorities, and it is greatly to be hoped that some means may be taken to prevent overlapping. The birth-rate, 28.4, is almost the same as in the previous year (28.3), which was the lowest on record. The more highly infectious diseases were all, with the exception of whooping-cough, less prevalent than they have usually been during the preceding decade. The rate of infant mortality (144 per 1000) constitutes the lowest record, but one which is far from satisfactory. While the number of cases of typhoid fever was exceptionally low the disease was a state of the constitution of the of a severe type, 49 deaths having occurred among 193 cases. During the last quarter of the year there were 74 cases reported, and no less than 19 had a history of having consumed mussels shortly before the attack. There has been a marked decrease in the amount of typhoid fever during the last six years coincident with the conversion of the more objectionable of the pan closets, 8000 of which still remain. The 198 certified midwives reported having attended 9244 births, equal to 47 cases per midwife. A point of some importance is that the fees have within the past year or two increased by about 2s. 6d. per case, but in order to obtain an income of 30s, per week a midwife would have to attend over 200 patients per year. This indicates the unattractiveness of this calling as a sole means of support. To carry out her duties properly a midwife cannot attend more than 200 labours in a year. On this basis 50 midwives could carry on the work of the 198 now practising. It is expected, therefore, that within a few years there will be a considerable diminution in the number of women practising. Much time has been devoted to measures tending to check the prevalence of tuberculosis. A commencement has been made in an endeavour to eradicate tuberculosis from a number of herds of cows supplying milk, so as to provide a supply of tubercle-free milk for hospitals and other institutions, and ultimately to anyone who is willing to pay a reasonable price for it. The municipal sanatorium on the Cotswolds is now proving a great boon to the consumptive workers.

Soarlet Fever.

Scarlet fever continues to increase in the city, there having been no fewer than 92 fresh cases the week before last, as compared with 82 during the previous week. The number of patients in the fever hospital is 483. The case mortality is not high, for there were only three deaths last week, for which period the general death-rate was $14\cdot 2$ and the zymotic death-rate $2\cdot 5$.

The University.

The matriculation examination, which is held twice annually—viz., in July and September—has just been completed for this year, and the total number of candidates again shows a very satisfactory increase. In 1907 the total was 433, last year it rose to 491, and this year to 568. Although many other examinations are accepted as qualifying for entrance to the University and the Birmingham matriculation is similarly accepted by other universities, yet the numbers indicate that the entry for the coming academic year should easily maintain the healthy rate of growth characteristic of the last few sessions.

Post-Graduate Demonstrations.

A course of post-graduate demonstrations will be given by members of the staffs of the General and Queen's Hospitals during October, November, and December.

Sept. 28th.

LIVERPOOL.

The Annual Report of the Medical Officer of Health: The Diminution of Tuberoulosis.

THE section of Dr. E. W. Hope's annual report dealing with the incidence of tuberculosis in the city is both interesting and instructive. From the report of a special commission of inquiry made 60 years ago it appears that at that time 100,000 of the inhabitants were living in houses so aggregated and so constructed as to be unfit for human habitation, and that 40,000 were living in cellars. Light and ventilation were sadly deficient, the houses and courts were dark and filthy, and the cellars and lodging-houses were greatly overcrowded and without supervision. The condition of the schools was wretched in the extreme, dark, confined, and dirty; they were used as a dwelling, a dormitory, and a school-room, whilst the atmosphere was most offensive. There was an absence of water-supply, drainage, and scavenging. Since this gloomy picture was painted huge sums of money have been spent in Liverpool in demolishing insanitary property and replacing it by wholesome dwellings, and in other sanitary improvements, with the result that during the last 43 years alone the mortality from all forms of tuberculosis has fallen to one-half. The mortality from phthisis and diseases of the lungs in the demolished areas was then notorious, but now, in the corporation dwellings mostly inhabited by the same families, and notwithstanding their history, the mortality from the same disease was during 1907-08 actually 1.35 per 1000 lower than that of the city taken as a whole, and very considerably below that of the districts in which the dwellings are situated. From this Dr. Hope draws the conclusion, and many will agree with him, that the most effective way to spend public money in order to cope with disease is to abolish the slums, to purchase the sites, and to erect sanitary dwellings thereon.

The University of Liverpool: The Openiny of the Faculty of Medicine for the Session 1909-10.

The inaugural address will be delivered in the Arts Theatre of the University on Tuesday, Oct. 5th, at 4 P.M., by Mr. Charles A. Ballance, M.V.O. The members of the faculty and other graduates are requested to wear academic dress. The lecturer will be entertained in the evening to dinner by the members of the faculty at the University Club.

The New Governor of Queensland and the Liverpool School of Tropical Medicine.

At the Liverpool Club, on Sept. 27th, Sir Alfred Jones, K.C.M.G., president of the Liverpool Chamber of Commerce, and chairman of the Liverpool School of Tropical Medicine, entertained at luncheon Sir William MacGregor, who sails on Oct. 15th to take up his new duties as Governor of Queensland. Amongst those present were Professor Ronald Ross, C.B., Major R. Bird, I.M.S. (professor of surgery at Calcutta University), Dr. A. Kinghorn, and Dr. Anton Breinl. Sir William MacGregor, in reply to the toast of his health, said that he had known the Liverpool School of Tropical Medicine from its inception. He had spent 31 years in the service of the country in the tropics, and he thought that few people had had a better opportunity than he had of seeing how much an institution of this kind was wanted in the world. Few men

could better appreciate the amount of good it had been able to do. He had had the opportunity on Sept. 25th and that day of renewing his studies at the school, and what he had been able to learn had been of considerable use to him and would be of great value to others. It was a great school, not on account of its size, but because it was the nucleus which was going to scatter broadcast tropical schools all over the Empire. The beginning of the Liverpool School of Tropical Medicine they owed from a scientific point of view to Major Ross, but to Sir Alfred Jones they were almost equally indebted. He looked upon the school as being the pioneer of all other schools of this kind that were to follow.

The Health of Liverprol.

The gradual diminution of the death-rate of the city is very gratifying. Last week the rate of mortality was as low as 15.8 per 1000 of the population. Dr. Hope ascribed the diminished death-rate to two causes. He said it was partly due to the weather and partly to progress. In this connexion the word "progress" means a great deal to Liverpool. It represents a large amount of money expended in improving sanitation, in an elaborate cleansing system, in an abundant water-supply, and in the comprehensive scheme of demolishing slum properties, replacing them with wholesome artisan dwellings, to which I have just alluded above.

WALES.
(From our own Correspondent.)

Cardiff Medical School.

ALTHOUGH it has been possible for some time past for a medical student to pass the early years required by the medical curriculum in attendance at University College, the fullest use has not been made of the clinical material available in the hospitals of the town. The proposed enlargement of the infirmary by the addition of an extra wing for in-patients and the recent addition of an out-patient department will increase enormously the existing facilities for clinical instruction. In this connexion it is satisfactory to find that of the additional grant of £15,000 which has been made by the Treasury to the University £1500 have been allocated to the medical school.

Asylum Accommodation in Glamorgan.

When it is remembered that the increase in the population of the administrative county of Glamorgan is approximately 6000 annually it is not surprising to find that there is some difficulty in keeping pace with the increase in the number of when the Commissioners in Lunacy visited the Bridgend Asylum last year they reported that although the day space in the institution was sufficient for 1548 patients and the night space for 1693, there were in the asylum 1727 patients, the excess being entirely on the male side. The removal of all the Cardiff patients to the new asylum of the Cardiff corporation has thus had little apparent effect in lessening the overcrowding at the county institution, and the few patients who are still there from Swansea and Merthyr cannot appreciably increase the difficulties of the visiting committee. The councils of these two boroughs are steadily progressing towards an agreement to provide an institution for the joint use of patients from the respective towns, and alternative sites have been selected for the necessary buildings.

Infantile Mortality in Glamorgan.

The rate of infantile mortality in Glamorgan in 1907 was 136 per 1000 births, and it is to be regretted that it is not possible to report the same favourable record for 1908, when the rate was 152 per 1000 births. In Margam, where there is a population of some 12,000 persons, the appalling rate of 279 per 1000 was recorded, and in Aberdare the rate was 212 per 1000. In his recently issued annual report the medical officer of health for the county (Dr. William Williams) points out that although this mortality is generally acknowledged to be preventable, yet it is dependent to a great extent upon climatic and meteorological conditions. The work of reducing the mortality he considers should not be left entirely to sanitary and education authorities, but parents should be made to realise their responsibilities, while social, philanthropic, and religious institutions should take a part in

carrying out remedial measures. Much more might be done by sanitary authorities in providing for the more thorough scavenging of organic refuse from the vicinity of dwelling houses. The existence of huge accumulations of household refuse in many parts of the colliery districts must be considered as a fruitful cause of the high infantile mortality, and it is not a little astonishing that so few districts in Glamorgan are provided with the means of destroying refuse by burning. In Barry a destructor has been in use for some years, and in the Rhondda valleys a small one was installed some nine years ago, but elsewhere none have been provided, although at Pontypridd one is in course of erection, and at Aberdare sanction to the necessary loan is being awaited, and when it is received the works will be proceeded with. In the latter town it is proposed, if possible, to utilise the destructor for providing steam power to an electric lighting plant.

Sept. 28th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Outbreak of Enterio Fever in Glasgow.

An outbreak of enteric fever has taken place on the south side of Glasgow in a distinctly limited area of the city which lies near the river. During the week ending Sept. 11th seven cases were reported to the medical authorities. Thereafter the number of cases steadily rose until 48 patients were under treatment. For more than a week no new cases have occurred, and it is hoped that the outbreak, which was peculiar in its self-limitation, is at an end. It is a little difficult to say what the source of the trouble was. has been shown by the medical officer of health for the city that the families affected had been supplied with milk from different shops, but all or most of the supply was sent from the same wholesale dairy. The difficulty of tracing was increased by the fact that this dairy received milk from about a score of farms situated in the western and south-western counties. So far no recent case of the disease has been discovered at these farms, but the authorities are still investigating the possibility of a "carrier" being responsible for the mischief.

The Colliery Surgeon: a Test Action.

An action of much interest throughout the mining communities of Scotland has just been decided in Dunfermline small debt court by Sheriff Shennan. The action was of the nature of a test action, and the sum sued for was 1s. 6d. Previous to the raising of the action a correspondence passed between a representative of a number of miners in Kelty and the Fife Coal Company in regard to the appointment of a colliery surgeon, but the parties having failed to come to an understanding the present action is the result. The pursuer, who is president of the Fife and Kinross Miners' Association, stated that he had been several years in the employment of the defenders—the Fife Coal Company. Under the contract of service between the pursuer and the defenders, the former authorised the defenders to deduct from his wages for the colliery surgeon, Dr. A. G. Carment, the sum of 6d. per fortnight for medicine and medical These arrangements continued in force until attendance. Dr. Carment left the district on July 1st of the present year. On the 9th of the same month the pursuer notified the defenders that he objected to any further deduction for medicine or medical attendance, and since that date he had employed and paid another medical man selected by himself. Notwithstanding that, the defenders had fortnightly deducted 6d. from the pursuer's wages for medicine and medical attendance. Pursuer further averred that the deduction was illegal at common law and contrary to the Truck Act of 1831. He claimed that the very utmost the employer could have said was that unless he was going to put himself under the surgeon nominated he must leave the colliery, and the employer did not take this course. For the defenders it was maintained that by the conditions of employment under which the pursuer was engaged each workman undertakes to pay the usual charges customary at the works, including house rent, fire coal, and medical attendance. The sheriff in his judgment said there was no doubt that under Section 23 of the Truck

provided that the agreement for such deduction was in writing and signed by the workman. It was admitted that several pay lines signed by the pursuer as receipts embodied an authorisation to the defenders to deduct "from my wages in future so long as I am in your employment the amount of my house rent, also the sum paid by you for medicine and medical attendance, &c." On July 13th and 27th and August 10th pursuer signed pay lines containing the authorization and according to risation and accepted the balance of wages. Prima facie the pursuer was barred by the terms of his own receipts. If pursuer objected to the deduction of 6d. he was bound, in order to keep the matter open, to state his objection to the statement of wages within two working days after pay. Not having done so, he was tied down to the statement in the pay ticket as conclusive, and could not possibly recover any of the sums for which he sued. Defenders were therefore granted absolvitor, with 10s. expenses.

Sept. 28th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Erection of Labourers' Cottages.

An inquiry was opened last week into an application made by the Rathdown No. 1 rural district council for a loan of £28,200 to be applied in the erection of 119 cottages under the Labourers Act. The inspector of the Local Government Board opened the proceedings, and the solicitor for the council read extracts from the report of the Board's inspector which was furnished in 1902, in which the latter stated that the houses for the labourers in a portion of the district were a menace to the lives of the inhabitants. The council sought to erect only those cottages which were actually wanted by bona-fide labourers, and, speaking from personal experience (he added), that could not always be alleged regarding such applications throughout the country. The council had worked the previous schemes in such an efficient manner that the rate in aid of the expenditure did not exceed 1s. 4d. in the £. Expert evidence was then given regarding the outlay. The cost of evidence was then given regarding the outlay. each cottage of the 119 proposed was estimated at £234 6s. 8d. The inspector said that while he was prepared to expect that the expense would be considerable in such a district as Rathdown, he did not see why it should be greater than that incurred in the erection of such cottages by the North and South Dublin councils, and added that without reduction of the estimated expenditure he was afraid that the loan would be refused, as the sum of £4,500,000 voted by the Government was getting used up, and the Local Government Board desired to stretch the remainder so as to procure the erection of the greatest possible number of cottages. The fact that the question is, as shown in the evidence, already one of more than seven years' standing, is surely strong evidence of the necessity for an early solution. The dreadful state of the hovels in which the poor Irish labourers have for many generations been doomed to drag out the indoor portion of existence is a distressing fact which fixes the attention of every observant visitor to this country.

The Beifast Natural History and Philosophical Society.

At a special meeting of this society held in the Belfast Museum on Sept. 24th a resolution was passed authorising the council to make application to the Commissioners of Charitable Donations and Bequests for Ireland to allow them to transfer upon loan to the corporation of the city of Belfast, upon such terms as may be arranged, the various collections in the old Belfast Museum. The corporation has arranged to take them over and has struck a rate of $\frac{1}{2}d$. in the £, which would yield £2900 on the present valuation, with the view of amalgamating the society's collection with their municipal collection, and steps are being taken to arrange for the provision of museum buildings worthy of the city in which the joint collections will find a home. John Byers has been elected President for another year.

The Nuisance on the Foreshore of Belfast Lough.

The executive committee of the Belfast foreshore committee has issued a report in reference to the work undertaken by it since its appointment on Oct. 20th, 1908. At the outset the main reasons leading up to the appointment of the committee are given, and mention is made of the various

schemes put forward by the city corporation in 1902, 1906, and 1907 for the purification of the city sewage. The Local Government Board having informed the Belfast corporation that it would not give its certificate under the Act of 1899 for any system of purification until the Board should have experience of its working for a lengthened period, and that it must have ample opportunity of judging of its efficiency by the effect it would have on the growth of the weed (ulva latissima) in the Lough before it could give its approval, a joint meeting of the improvement and public health committee requested the Royal Commission on Sewage Purification, on May 25th, 1909, to submit the names of six persons competent to determine what further purification, if any, of the sewage discharged at the main outfall works is necessary in order to comply with the requirements of the Act of 1899. Experts appointed by the Royal Commission are now at work with the object of recommending some scheme of purification. Meanwhile, the corporation intends to promote a Bill in Parliament during next session, and the executive committee of the Belfast foreshore committee intends to watch carefully the interests of the property owners and ratepayers so as to ensure a proper scheme being undertaken, and one which will put an end to the existence of the "foreshore nuisance."

The Salaries of Dispensary Medical Officers.

The Local Government Board has written to the Limavady guardians to the effect that it cannot approve the scale of graded salaries adopted by the guardians in December, 1904, which the Board was unable then to sanction, and asking them to reconsider the entire question and to try to arrive at an amicable settlement with the medical officers on the subject. The Board urged that in any proposal that might be submitted provision should be made for granting to the existing medical officers such immediate increases to their salaries in recognition of their past services as would enable them to share to an appreciable extent in the benefits of the improved scale during the remainder of their careers in the service of the union. Dr. B. MacCarthy, medical inspector to the Local Government Board, advised the guardians at their meeting on Sept. 27th to do what the Local Government Board advised, and also to grant the two retired medical officers allowance under the civil service scale, but the guardians decided to adhere to the scale of salaries formerly adopted by them.

Women's National Health Association: an Interesting Meeting in the West.

A large and representative meeting was held at Clifden on Sept. 21st for the purpose of conveying an expression of the sincere sympathy of the people of the district to the Countess of Aberdeen in the bereavement caused by the death of her brother, Lord Tweedmouth, "who, like Her Excellency, was always a true and constant friend of Ireland." The meeting was presided over by His Grace the Most Rev. Dr. Healy, Catholic Archbishop of Tuam; and among the other prominent personages present was the Protestant Bishop of Tuam, Dr. O'Sullivan. After the unanimous adoption of the resolution of sincere sympathy, which was the primary object of the meeting, the following propositions were also carried with acclamation:-

with acciamation:—

1. That we, the people of Clifden, in public meeting assembled, hereby place on record our high appreciation of the noble efforts of Her Excellency Iady Aberdeen to stamp out from amongst our people the dreadful soourge known as the "White Plague," and we heartly thank Her Excellency for sending to this district the "Phenix," accompanied by her lecturers, whom we cordially welcome to our town.

2. That we hereby establish a branch of the Women's National Health Association for the Clifden and surrounding districts for the purpose of cooperating with Her Excellency in the good work of combating the ravages which are being wrought in our country by the terrible scourge of consumption, and to secure for this district the advantages which followed the establishment of such branches else-

advantages which followed the establishment of such branches else-

where

To those who know the temper of the "wild West" this meeting will seem to mark an epoch in the history of a distracted country. It is an incontrovertible indication of the methods by which the best feelings of an emotional people can be focussed in the right direction. The "crusade" organised by Lady Aberdeen was bound to elicit a good deal of unfavourable comment, as every crusade does, and was also bound to carry with it the factors of inconvenience to many individuals and serious grievance to some others, as every crusade has also done, but it has now arrived at a stage at which its educational value cannot be disputed. This must be admitted even by those who have been most intensely opposed to compulsory notification.

Sept. 28th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The International Association of Padiatrics.

THE International Association of Pædiatrics has recently been founded for the purpose of creating a bond of union between the surgeons who in various countries devote themselves to this specialty. From the nature of its composition the association is naturally divided into several sections corresponding to the nationalities represented, and its affairs are managed by a committee consisting of delegates appointed by each nation. The first congress of the association will be held in Paris in 1910, on the Thursday, Friday, and Saturday before Easter. No communications will be brought before this meeting, except such as relate to the questions selected by the international committee and placed on the official programme. Each of these questions will be dealt with in discourses (rapports) entrusted to two or more medical men belonging to different nations.

Noximis Inscots in Madagascar.

The biting and stinging insects (insectes piqueurs) of Africa have been made the subject of careful study by M. Surcout, and at a recent meeting of the Society of Tropical Medioine and Hygiene, he presented a very detailed memoir on the tabanidæ of Madagascar. Certain differences which exist between these insects and the tabanidæ of Africa seem to support the view that the fauna of Madagascar are partly of Indo-Malayan origin. M. Surcouf described the new genus Bouvierella and numerous new species, thereby enhancing the importance of his memoir on biting, stinging, and blood-sucking insects, a knowledge of which is rapidly becoming more and more necessary for medical men practising in the colonies.

Inorease in Medical Fecs.

A commission, composed of delegates from the general council of the district medical societies (sociétés médicales d'arrondissement), from the Syndicate of Medical Men of the Seine, from the Paris Medical Syndicate, and from the Medical Society of the Fourth Arrondissement, has recently, after a long discussion, unanimously adopted the following

after a long discussion, unanimously adopted the following resolution:—

The general council of the district medical societies, the Syndicate of Medical Men of the Seine, and the Paris Medical Syndicate, representing all the medical men practising in Paris and the suburbs, have agreed to consider the question of raising medical fees. They have acknowledged and decided that it is necessary to increase the scale of medical fees by at least one-third more than the current rates for ordinary visits and consultations as charged at the present time. Each district shall decide what is the lowest fee to be charged in that district. For visits either in urgent cases or in the evening, or on Sunday, higher fees will be charged than for ordinary visits. A scale of minimum charges for special work in ordinary practice shall be drawn up.

Re-education in Psychotherapy.

At the annual meeting of the Society of Hypnology and Psychology, which was held in Paris under the presidency of Dr. Jules Voisin, the methods of re-education in psychotherapy formed the subject selected for discussion. It was stated that the statistics of the reformatory school of the Salpêtrière Hospital showed that the principal causes of juvenile crime were (1) bad example and the want of education; and (2) intellectual defects of hereditary origin (mental debility and perversion). Measures directed against alcoholism, syphilis, and tuberculosis were the first requisite for improving the present state of things, and moral education must also be considered. In discussing the use of hypnotism in the re-education of the will power, M. Berillon said that in his opinion the use of hypnotism was at once legitimate and distinctly indicated in the treatment of such patients. Moreover, in a great number of occupa-tions in which manual dexterity and constant training played an important part any bodily injury had a most unfavourable influence. It very often happened that the interruption of habitual activity and the restraint of motion inevitable in the treatment of a bodily injury brought about a kind of "mental ankylosis" which formed an obstacle to the recovery of aptitude for the patient's occupation. If it was desirable to urge these individuals not to neglect any opportunity of keeping themselves proficient in their several avocations, it was just as necessary to provide for their reeducation when they felt a sensation of inability to resume work. These new applications of psychotherapy were of importance especially to musicians and art-workers, who were

predisposed to hypnotic suggestion. They also formed the most rapid and efficacious means of treating certain forms of loss of muscular power in which the patients if left to themselves would seldom make any progress towards recovery.

Treatment of Nooturnal Incontinence of Urine.

M. Chavigny has recently shown a man whom he had quite successfully treated for nocturnal incontinence of urine by means of Genouville's "re-educating" apparatus. This consisted of two metallic plates, having between them a thin layer of absorbent wadding and connected to a galvanic battery. The plates thus arranged were placed under the person's pelvis, and as soon as the wadding became wetted with urine the circuit was completed and a bell rang. For the bell M. Chavigny has substituted two conductors in contact with the pubic region, and as soon as any urine was passed the person received an electric shock which woke

Hospitals in Camps of Instruction.

As a result of visits which he has lately made to certain camps of instruction, the Under Secretary of State for War has resolved to establish hospitals (infirmeries-hôpitaux) in all camps where they do not as yet exist. These hospitals will enable sick and wounded men to be treated on the spot, thereby sparing them the fatigue and possibly injurious effects of the journeys which would otherwise be necessary. Sept. 28th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Education and the Health of German Military Recrusts.

An interesting report on the bodily condition of the young men qualified to serve in the German army as so-called "volunteers" has been compiled for the Army Medical Department by two military medical officers, Dr. Nicolai and Dr. Schwienig. It may be stated by way of explanation that in the German army the word "volunteer" does not convey the same meaning as it formerly for many years had in connexion with the British forces. Conscription having been in force in Germany for nearly a century there is no opportunity for volunteer service in the strict sense of the term. A German volunteer is a man who has received his school education at a gymnasium, a real-gymnasium, a realschule, or other higher school, where he must have successfully passed in at least the third class—in a word, he is a man of better education than the average conscript. He enjoys the privilege of having to serve only one year instead of the two or three years of the ordinary conscript, and is eligible to become an officer of the reserve. He may also for the purpose of his service select both the regiment and the period of service which he prefers until he reaches his twenty-fifth year, whereas the average man must begin to serve in his twentieth year and must join any regiment to which the military authorities choose to send him. The above-mentioned report, quoted in the Berliner Klinische Wochenschrift, compares the bodily condition of the pupils of the various grades of schools with each other and partly with the average conscript. It gives the results of observations made on 52,650 young men who presented themselves for service as volunteers during the years 1904 and 1906. The report states that the percentage of men fit for military duty was greater among the volunteers than among the conscripts. Among the volunteers the greatest number of men unfit for service occurred in the pupils of the classical gymnasia; next in order came the pupils of the real-gymnasia (schools in which less classics but more modern languages and mathematics are taught); and after them came the pupils of the realschulen (schools in which there is no classical teaching, the principal subjects being mathematics and physics). Men with a comparatively short school attendance were on an average more fit than those whose school attendance was longer. Of the causes of unfitness the principal proved to be general debility, then came diseases of the heart and of the great vessels, anomalies of refraction, anomalies of the joints and extremities, and diseases of the lungs. The most marked forms of disease of the lungs leading to permanent unfitness for military service were observed in the pupils of the gymnasia. General debility was the most frequent cause of unfitness in Berlin, in Posen, in Silesia, and in the

Hanseatic cities, but it was less frequent in Alsace-Lorraine, Franconia, Pomerania, East Prussia, and Thuringia, whilst diseases of the heart were preponderant in Bavaria, Würtemberg, and Silesia. Of the former pupils of the gymnasium 47 per cent. had anomalies of refraction, especially myopia. The kingdom of Bavaria had the greatest number of men with anomalies of refraction. Dr. Nicolai and Dr. Schwienig state that the statistical tables show such an unsatisfactory condition of the eyes among the pupils of the higher schools that measures must be taken to counteract this failing.

Gonorrhæa in Female Children.

Dr. Bendig of Stuttgart, writing to the Münchener Medicinisohe Woohenschrift, gave an account of epidemics of gonorrhea among children in two institutions, one of which was a sanatorium for girls of the poorer classes. Of 40 girls who were between seven and ten years of age 15 contracted the disease, which was in the first instance introduced by a girl aged eight years. The infection was spread by means of the arrangements made for bathing, as it was the practice for two children to bathe together in the same water and they sometimes used the same towel indiscriminately. When the disease was discovered the children were conveyed to the Stuttgart Hospital. The external genitalia proved on examination to be in a swollen state, the vulva was occluded by the swollen labia, and a stream of pus appeared when the latter were separated. The children were feverish and complained of prickly sensations, of strangury, and sometimes of abdominal pain. The treatment consisted in the administration of santal oil and in covering the vagina with a layer of cotton-wool in order to keep the children from touching the parts and thereby incurring the risk of producing gonorrheal ophthalmia. Irrigation of the vagina by solutions of permanganate of potash and of protargol was also employed and the urethra was brushed with ichthyol. In some children although the agenta symptoms disappeared tolerably soon although the acute symptoms disappeared tolerably soon, the disease became chronic and was accompanied by a mucous discharge which contained gonococci. cases the treatment was interrupted for about a fortnight, the result being that the acute symptoms reappeared. Irrigations with protargol were accordingly recommenced, and plugs of wool moistened with protargol and glycerine were put into the urethra, where they were left until the next micturition. The treatment was successful, but in several cases relapses occurred, sometimes even ten weeks after the patients had been discharged from the hospital. In the result all the children recovered completely, although one of the girls required continuous treatment for 279 days. No complications occurred—neither endocarditis, ophthalmia, nor perimetritis. For the prevention of such disasters it was recommended that children previously to being sent to sanatoriums should be examined for the presence of gonorrhoea. They should also bring with them their own towels and no bath should be used for more than one child at a time.

An Epidemic of Milk-borne Enterio Fever.

An epidemic of enteric fever lately broke out at Cassel, in the province of Hesse, and within ten days not less than 170 cases occurred, of which only two have as yet proved fatal. The epidemic was spread over the whole town, as if by an explosion. On careful examination the point of origin was discovered in the municipal dairy, where the presence of enteric fever bacilli was recognised in a large tank containing 7000 litres of milk. It was then ascertained that two of the people employed in the dairy were the first to become ill, but it was not certain whether they had been the means of contaminating the milk or whether they were the first victims, the milk having been previously infected from other sources. The municipal authorities were naturally alarmed by the sudden spread of the disease; they have arranged for the reception of a considerable number of enteric fever patients by provisionally establishing some Döcker barracks. The water from the river Fulda and from the waterworks proved to be free from enteric fever bacilli, but the public bathing-places have nevertheless been closed.

Infantile Paralysis.

A form of infantile paralysis has become prevalent in several towns in the Rhenish province. From Gladbach ten cases were reported showing partly monoplegia, partly hemiplegia, partly paraplegia. All the cases happened within the same district of the town, but there has not been any

instance of two cases occurring in the same house, although it has twice happened that brothers and sisters showed premonitory symptoms, such as pyrexia, vomiting, and drowsiness. The children were all from one to two years of age. Also in Mülheim on the Rhine, in Styrum, Alstaden, and Oberhausen a total of 45 cases occurred, and the disease is on the increase in Hamburg. Bacteriological examination proved negative.

Sept. 27th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

The Italian Association for the Promotion of Science.

THE week now closing has witnessed the inauguration and subsequent sittings of this the third meeting of Italy's counterpart to the British Association. Its seat is Padua and its presiding spokesman, the professor of constitutional law in the University of Rome, Signor Luigi Luzzatti, member of the Chamber of Deputies, where on all questions of education and finance he maintains the best traditions of his predecessors of the Right, Quintino Sella and Marco Minghetti. Reference to the discussion in the various sections-those of biology in particular—may stand over for the present; but Signor Luzzatti's address, covering as it does the whole field of "science, philosophy, and the school," deserves more than a passing notice. It was indeed a brilliant performance, singularly opportune in Italy, whose urgent duty it is to combine and mobilise her forces, educational and financial, if she is to regain the post she once held in inductive research and academic exposition. magnitude of the task confronting her may be estimated from the leeway she has to make up, beginning at the very outset of scholastic training. On this Signor Luzzatti gave some details reflecting severely on the perfunctoriness with which the schools, primary and secondary, prepare for intelligent citizenship and a fortiori for professional life. "La scuola Italiana deve essere rifatta" (the school in Italy has to be remodelled and remade), as he amply showed, and then, having postulated such a consummation, he drew in bold, comprehensive outlines a plan of cam-paign by which the national genius might develop in the interests of science and of progress, intellectual and moral. One danger to be guarded against, particularly in a renascent state like that of Italy, was, he pointed out, a "premature specialism," issuing in a truncated or lop-sided mental growth and attitude, disastrous to the attainment of what a great English physician happily termed "the complete professional mind." The danger, indeed, is not one which menaces Italy only. Other nationalities, far ahead of her in education and expert development, are already becoming cognisant of it, and their misgivings could not find more eloquent or convincing expression than that given to it by Signor Luzzatti, whose address, if only for this consideration, merits attention far beyond the audience first privileged to hear it.

The New Pharmacopæia.

The Ministry of the Interior, by decree dated Sept. 15th, has approved the revised text of the official Pharmacopæia for national use in substitution of that approved by the same Ministry on March 1st, 1902. The new issue sets forth in tabular form: 1. The medicaments with which every pharmacist must, de riqueur, be provided. 2. The apparatus and utensils indispensable in each pharmacy. 3. The substances which must be kept under special designation in cabinets under lock and key. 4. The medicinal substances entered in the Pharmacopæia which ought to be kept by the pharmacist excluded from the light. 5. The substances entered in the Pharmacopæia, which may be sold by anyone (except, of course, poisonous substances), but never in quantity below the measure established for each. 6. Alimentary substances and those in domestic use entered in the Pharmacopæia, of which the sale is free (poisonous substances as before excepted). 7. The maximum doses for the adult, beyond which the pharmacist is forbidden to dispense, except in special cases under express sanction of the practitioner. To the above "tables" is added a list of the "specialità medicinalis" entered in the Pharmacopæia itself. The above regulations may seem to the outer world rather meticulous, but no one

familiar with the law press of Italy and the frequent (sometimes fatal) "sbagli" or mistakes it records can be other than thankful that the Home Office has been thus minute and precise in its surveillance of the pharmacist's métier.

Arrest of a Pseudo-Practitioner.

The police have laid hands on one Giovanni Pedrelli, hailing from Sasso, a township on the Milan-Bologna-Florence line, charged with "truffa, falsita, ed esercizio arbitrario della professione medica" (fraud, quackery, and unqualified practice of the profession). He had aroused suspicion, inter alia, by the eccentric prescriptions he put his name to, by his careful avoidance of anything like discussion with pharmacists or brother practitioners, and by his outrageous misuse of medical terminology in diagnosis. Asked by the prosyndic to produce his credentials he handed him a "certificate" of the University of Modena, adding that he had lost the original diploma on one of his many absences abroad, some of them in the capacity of surgeon on board an Italo-American liner. Shortly thereafter there came from Modena, as well as from the other qualifying schools throughout the kingdom, affirmations from the registrars that for 40 years no graduate or licentiate had issued from their halls under the name of Giovanni Pedrelli. Then followed the interrogation after his arrest, in the course of which he equivocated, and finally confessed that he was neither graduate nor licentiate, but had passed one session as a first year's student at Bologna. He is now awaiting sentence, and meanwhile the population of the district in which he "practised" is loud in its censure of the official supineness which placed them at the mercy of an adventurer whose rôle, however appropriate in the pages of "Gil Blas," is a scarcely creditable anachronism in the Italy of to-day. Sept. 25th.

CHINA.

(FROM OUR OWN CORRESPONDENT.)

Anthrax in China.

THE subject of anthrax and its prevention, as far as the export of infective hides from China is concerned, seems almost a hopeless one with regard to any practical amelioration. There seems little doubt that human anthrax is more prevalent in England than it is here. For the past halfdozen years, since my attention was first drawn to the absence of anthrax among Chinese, I have been on the lookout for cases and have never yet personally seen a case. I have only been able to find a sum total of three cases coming under foreign treatment, two of these being Europeans. One was a French veterinary surgeon who, on making a necropsy on a mule, scratched his finger, which, though treated by sublimate dressing at the time, caused his death in four days; another was a supervisor in a hide and bristle factory; and the third, a Chinese pedlar on a visit to Peking, had no history of contact with hides or wool, but came to the Peking Hospital with the malignant pustule, from which he died. In all three cases the bacillus anthracis was found. Some time ago a series of inquiries were made by the native staff of the British Charitable Hospital, Peking, among workers in the trade here; they described the disease and asked for instances of its occurrence, but their failure to get information in any way pointing to it leads one to infer that anthrax in China is by no means the danger it is among workers in England. This is all the more remarkable, as China heads the list of countries-of-origin of infective hides; in fact, her exports are regarded in the trade as particularly dangerous. The Home Office medical authorities have taken as active steps as possible by means of stringent factory legislation to deal with the question, but the incidence of anthrax does not seem, as far as one can gather from the returns, to diminish. It therefore appears that the only effective method would be to deal with the source and origin of infection. In China at present this is not possible, and so far as one can see there is little hope of its ever being different. The conditions here under which the animals live (the conditions of soil, temperature, decomposing vegetable matter, moisture) are all favourable to the bacillus and to outbreaks of cattle anthrax. An instance of this is now being furnished at Hsuchoufu- a district lying between Peking and Shanghai. I have received a letter from a medical friend there,

who reports as follows: "The disease, which has been destroying cattle throughout this Fu, continues its ravages, though with diminished virulence, probably because there is now a scarcity of susceptible cattle. The mortality is now a scarcity of susceptible cattle. The mortality has varied from 50 to 75 per cent. of the infected animals. To determine the extent of the disease I made inquiry as to the number of hides exported during the first three months of this year. They say that more than 260,000 left this city, and for the whole Fu half a million would not be too high an estimate. As no cattle are being slaughtered this represents, approximately, the loss of cattle from the plague. The particular form that the disease assumes in this locality tallies exactly with the description of the pneumonic form of anthrax. All recognise it as highly contagious and drovers avoid taking their cattle through infected villages. It is asserted that several deaths among men followed the eating of flesh killed by this disease. I am not able to vouch for the truth of this report but it does not sound unreasonable. In the mission hospital, however, there has been no case of The foreign firms that export hides, wool, local anthrax." bristles, and hair are in the hands of Chinese middlemen who roam about the interior buying here and there from the agricultural classes. I have been over some of the factories in Tientsin (the centre of a large trade in this material) and have observed the steps they take to clean the stuff before its export. Bristles and hair are thoroughly well boiled in soda solution, wool is rough carded and shaken as free of as much dust as possible by machinery, and hides are sorted out and packed with naphthaline. Chinese workers in these factories seem to escape the disease, though they freely handle the skins. The exporters maintain that any further disinfection than is now given would spoil their goods and increase their expenses to such an extent as to make them seek the markets of other countries. A member of one of the biggest firms in North China wrote me some time ago: "I find that from the years 1902-1906 our own particular business is as 5 (U.S.A.) to 1 (London) and has been going downhill as follows: London, 1902-3, took 43 per cent.; 1903-4, 30 per cent.; 1904-5, 24 per cent.; 1905-6, 15 per cent.; and this despite the fact that we have our London office and can out things down as fine as any one." Thus it would appear that our Home Office authorities must feel their limitations in demanding any efficient sterilisation at the port of export. The real difficulty does not lie with the bacillus anthracis but with its spores, whose natural resistance is increased by their being embedded in the grease and dirt of the material while it is being dealt with in wholesale bulk in China. can be little doubt that the passage home through the Indian Ocean and the Red Sea in the warm hold of a ship is all-conducive to their propagation and preservation, so that when the time comes for bristles and hair being carded and separated out by workers at home these spores are liberated in an active condition ready for human infection to a much greater extent than is the case in China. Such preventive remedies as inoculation of cattle with attenuated vaccines are obviously impossible in such a huge continent as this, with the beasts so widely scattered in the far-off interior, and if it has been found impossible to sterilise horsehair in bulk at 253° F. for 45 minutes or to effectually kill the spores by any known disinfectant in such quantity as to allow of its use commercially, and of such power as not to destroy the material, it simply means we have reached a point where we know that we must put up with the import. of actively infective bales and thus rely on the precautions that can be legally enforced in England. It has been suggested by Dr. T. M. Legge, H.M. Medical Inspector of Factories, that a central disinfecting station might be erected at the Port of London near the two warehouses where practically all the horsehair and bristles that come into the United Kingdom are delivered. This would require to be on a very large scale if all the material in bulk were to be so thoroughly separated out, cleaned, and disinfected that the virulent and numerous spores could be effectually sterilised. Exporters in China have told me they are fully alive to the dangers of the trade and are willing to meet in every reasonable way any suggestions they may receive which would enable their infective material to be disinfected locally and packed in a way less dangerous to home workers.

Famine and Flood.

In the absence of a census or any official returns one cannot tell the actual numbers of Chinese who meet their

deaths by such fortuitous circumstances as famine, flood, and epidemics which all recur annually throughout the empire. "Many thousands" have died from famine in the province of Kansu, where there has been no good rainfall for seven years, culminating in a prolonged drought this summer. streets of Peking are placarded with pictorial appeals to the charitable showing the emaciated farmers and their families eating weeds in the fields. One wood-cut depicts the old mother of the household being cut up for food, bits of her limbs being placed on a platter by the fireside ready for cooking—to such straits are the people said to be driven. Kansu is in the extreme north west of the empire. In Mid-China a loss of life estimated at "several thousands" has occurred among the riverine population on the Yangtze Kiang owing to the river rising 16 feet above its normal level and overflowing its banks. In South China the West River has likewise risen in flood and caused much disaster among the people in its neighbourhood.

Peking, August 9th.

Obitnary.

JOHN MILSOM RHODES, M.D. BRUX., L.R.C.P., L.R.C.S. EDIN., J.P.

WE much regret to announce the death of Dr. John Milsom Rhodes, which occurred at his residence at Didsbury, Manchester, on Saturday last, Sept. 25th, in very sad circumstances.

Dr. Rhodes, who was an alderman and a justice of the peace for Lancashire, was one of the best known practitioners in the district, and outside it his name is familiar to all medical men as an ardent supporter of Poor-law reform and chairman of the Central Committee of Poor-law Conferences. He was the author of pamphlets upon pauperism generally and upon pauper lunatics; he wrote a report upon the treatment of the feeble-minded, the insane, and the epileptic by colonies or in institutions founded upon the procedure in the United States; and in our own columns and those of several of our scientific and professional contemporaries he gave voice to clear views on many points in sociology and psychology where knowledge gained as a practitioner enabled him to speak with definiteness. His work on the Central Committee of Poor-law Conferences, as well as his vigorous speeches and writings, influenced legislation on more than one occasion. For example, his pamphlet dealing with workhouse dietaries stirred the Local Government Board to make a departmental inquiry and inspired the Board to remove many of the abuses to which he called attention; and similarly the Report of the Royal Commission on the Deaf and Blind adopted recommendations which he had formulated at a Poor-law con-The medical world has lost in him a vigorous supporter of professional rights.

Dr. Rhodes had suffered for some time from symptoms of heart disease, and it appears that having a hard day's work before him he gave himself a dose of strychnine which, though not unusually large, unfortunately proved fatal. We sympathise with his many friends in their grief at this terrible misadventure and at the abrupt closing of a strenuous and

useful career.

HUBERT ELWYN JONES BISS, M.A., M.D. CANTAB., L.R.C.P. LOND., M.R.C.S. ENG., D.P.H. EDIN. & GLASG.

Hubert Elwyn Jones Biss, the second son of Dr. Cecil Yates Biss, late physician to the Middlesex and Brompton Hospitals, was born in 1872 and received his professional education at King's College, Cambridge, and the Middlesex Hospital. He took his B.A. in the Natural Science Tripos in 1892; his M.A. and M.B., B.C., as well as his college diplomas, in 1896; and his doctorate in 1901. In 1897 he became a house physician at the Brompton Chest Hospital and, shortly after the expiration of his term of office, was chosen to be the immediate medical attendant of the late Mr. Gladstone. In this capacity he resided with his illustrious patient at Hawarden and elsewhere, for some six months, until the end. With what ability and tact he gave his services the continued appreciation and gratitude of the statesman's family well testified. After some time spent in travel Dr. Biss was appointed assistant

strongly attracted to the State relationships of medical science, and took the D.P.H. of Edinburgh and Glasgow. At this time, too, he contributed several papers to the current literature of epidemiology. One paper in particular, that on the Borderlands of Scarlet Fever and Diphtheria, originally published in THE LANCET, is of very considerable importance, and well exemplifies the author's broad and philosophic grasp of his subject.

On his marriage in 1903 Dr. Biss relinquished the service of the Metropolitan Asylums Board, and for a while settled in practice at Eastbourne, continuing, however, his literary work and, in particular as assistant editor of the Medical Press and Circular, contributing valuable articles of public as well as professional interest. But opportunities for other work drew him back to London, and during the last few years he had rapidly acquired both practice and reputation as an expert in assurance and medico-legal work. For this branch of practice Dr. Biss was peculiarly fitted; he had read and thought much on the subjects which he was bent on mastering, and in the courts his wide information and readiness of mind enabled him to hold his own with temper and confidence. He was elected to the council of the Medico-Legal Society, and he was to have read an important paper at the first meeting of the session now about to begin. But attacks of pain, borne bravely and almost silently, became more and more frequent, and were, without doubt aggravated by the rapidly increasing pressure of professional engagements. Early in September he was advised to enter a nursing home at Eastbourne for rest and dietetic treatment. His condition soon became increasingly grave : severe intestinal hæmorrhage occurred, probably from a duodenal ulcer, and despite the devoted care of Dr. A. Harper and other friends the end came, after days of unconsciousness, on Sept. 20th. He was laid to rest at Eastbourne four days later.

Hubert Biss was a man of unusual ability and great ersonal charm and distinction. He deserved success his friends, not least for the sake of the widow and little son, will feel it one of life's bitter ironies that death should have claimed him at this moment, happy as a husband and father, full of eagerness and plans for the future, absorbed in the work which delighted him, and apparently secure in the enjoyment and promise of those things he most desired.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.-The deaths of the following eminent foreign medical men are announced: -Dr. Louis Katz, titular professor of otology in Berlin, author of a microphotographic atlas of the normal and pathological anatomy of the ear and also of a stereoscopic atlas of the ear. He was 61 years of age.—Dr. Léon Hendrix of the Brussels Polyclinic, who was considered the chief authority on children's diseases in Belgium.-Dr. E. L. Marechal, formerly lecturer on hygiene and forensic medicine in the Alabama Medical College, Mobile.

Medical News.

Foreign University Intelligence .-Albany Medical College: Dr. James W. Wiltse has been appointed Lecturer on Dermatology and on Otology.—
Baltimore (University of Maryland): Dr. Irving J. Spear has been appointed Professor of Neurology and Psychiatry.—
Berlin: Dr. Hermann Steudel of Heidelberg has been appointed Extraordinary Professor of Physiology.— Benn. appointed Extraordinary Professor of Physiology.—Benn: Dr. Wilhelm Reis, privat-docent of Ophthalmology, has been granted the title of Professor. - Breslau: Dr. Karl Bruck has been recognised as privat-docent of Dermatology. - Chicago (Rush Medical College): Dr. Anton J. Carlson has been promoted to the chair of Physiology. - Erlangen: Dr. Karl Kleist has been recognised as privat-docent of Mental Diseases.—Florence: Dr. Ottorino Rossi of Pavia has been recognised as privat-docent of Neurology and Psychiatry.—
Innsbruck: Dr. O. Nebesky has been recognised as privat-docent of Midwifery and Gynecology.—Kiel: Dr. Goeppert has been appointed Extraordinary Professor of Children's Diseases in succession to Professor Salge, who is going to Freiburg.—Königsberg: Dr. Paul Stenger, medical officer at the Park and, later, at the Grove Fever privat-docent of Otology, has been promoted to an Extra-Hospitals. During the five years thus spent he became ordinary Professorship.—Naples: Dr. Egidio Maturi has been

recognised as privat-docent of Medical Hydrology.—Prague (German University): The title of Extraordinary Professor has been granted to Dr. Otmar Völker, privat-docent of Anatomy; Dr. Jaroslaw Bukovsky, privat-docent of Dermatology; and Dr. G. Chalupecky, privat-docent of Ophthalmology. Dr. A. Schelb has been recognised as privat-docent of Midwifery and Gynæcology, and Dr. L. Moll as privat-docent of Children's Diseases.—Rome: Dr. G. Mingazzini, Extraordinary Professor of Neurology, has been promoted to the Ordinary Professorship.—Vienna: Dr. Fredrich Dimmer of Gratz has been offered the chair of Ophthalmology together with the Directorship of the First Ophthalmic Clinic in succession to the late Professor Schnabel. Dr. Emil Glas has been recognised as privat-docent of Laryngology and Rhinology.—Yale: Dr. Wilbur Tileston has been appointed Assistant Professor of Medicine.

LITERARY INTELLIGENCE.—The Medical Directory for 1910 is now in preparation and will contain an interesting new feature—a descriptive list of British health resorts, which should prove to be of great value to medical men in giving advice to their patients as to suitable places for change of air. This list has been compiled by Mr. Norman Hay Forbes of Church Stretton. Messrs. J. and A. Churchill can still receive information for this volume. The same firm published last week the eleventh revised edition of Dr. Hale White's popular "Handbook of Materia Medica."—Messrs. W. B. Saunders Company announce that they have in the press and will publish shortly a new work on Malaria by Dr. William H. Deaderick, based on recent investigations. The book will be illustrated by a number of original pictures.

THE LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON).—The following entrance scholarships have been awarded: Price Entrance Scholarship in Science, value £120, Mr. J. Bostock; Entrance Science Scholarships, value £60, Mr. A. G. Winter, value £35, Mr. R. J. M. Love; Epsom Scholarship, value £126, Mr. H. G. Winter; Price Scholarship in Anatomy and Physiology (University Scholarship), value £60, Mr. J. R. Marrack (St. John's College, Cambridge).—The "Schorstein" lecture on Syphilis and Aneurysm will be delivered on Friday, Oct. 15th, at 4.30 P.M., by Dr. William Osler, Regius professor of medicine in the University of Oxford. At 4 o'clock the new laboratories for physiology, chemistry, and physics will be formally opened by Professor Osler. The whole of the hospital and college will be open for inspection during the afternoon. Members of the profession will be admitted on presentation of their cards.

CALEDONIAN MEDICAL SOCIETY.—The members of the Caledonian Medical Society, who held their annual meeting last year in Edinburgh, assembled at Lancaster on Sept. 17th for this year's gathering, spending the following day in excursions and sight-seeing. The members of the society are spread throughout the world and the annual reunion is the bond which draws them together. They are all University men and a condition of membership is that they shall have Highland blood in their veins. The reunions are held alternately in Scotland and England. Of the three medical students who founded the society 30 years ago two are still alive. One is Dr. S. R. Macphail, Rowditch, Derby, the secretary and treasurer; and the other is Dr. W. A. Macnaughton of Stonehaven. The first-named has the distinction of having attended every annual meeting. Amongst those present at the Lancaster meetings this year were Sir William Sinclair, Dr. Greenlees, five members from Scotland, two members from South Africa, and one from Nigeria. The annual meeting was held under the presidency of Dr. D. Blair, who explained that the society had definite aims, of which its devotion to Gaelic medical literature was a special feature. They had just received a translation of a valuable old Celtic medical manuscript. Most of the Gaelic manuscripts which he had read had been translated by members of the society or by scholars endowed by the society. During the meeting speeches were made in which reference was made to the work of the late Sir Richard Owen and Sir William Turner, both distinguished Lancastrians. Major Burke spoke of the Army Medical Corps as providing a fine field for young medical men, offering them unrivalled opportunities of seeing the world, of engaging in scientific research, and of attaining a status unattainable by most general practitioners.

THE WEST LONDON POST-GRADUATE COLLEGE.—
The title of Professor Theodor Schott's address, which is to be delivered at the West London Hospital on Oct. 11th at 5 P.M., will be "A Renewed Research on the Subject of Acute Overstraining of the Heart."

Insanitary Overcrowding.—A man was summoned at Mansfield last week by the Corporation for allowing seven people, between the ages of six and 20 years, to sleep in one room in his house. He was ordered to abate the nuisance and pay the costs of the summons.

DONATIONS AND BEQUESTS. — Mr. Francis Tagart has given £1000 to the Royal Infirmary, Bristol, towards defraying a debt of £3500.—Mr. J. Bland-Sutton has given £1000 towards the fund which is being raised for the purchase of an athletic ground for the Middlesex Hospital Medical School.

UNIVERSITY COLLEGE, LONDON.—In connexion with the opening of the session of the Faculty of Science and the Faculty of Medical Sciences at University College, London, Professor Sir William Ramsay will give a public introductory lecture on "Radium Emanation; One of the Argon Lines of Gases," on Monday, Oct. 4th, at 9 A.M.; and Professor H. R. Kenwood will give a similar lecture on "What Hygiene demands of School Teachers," on Wednesday, Oct. 6th, at 7 P.M.

CHARING CROSS HOSPITAL MEDICAL SCHOOL.—The following entrance scholarships have been awarded at this school:—The Epsom scholarship (60 guineas) to Mr. Duncan W. Pailthorpe, the Livingstone scholarship (75 guineas) to Mr. Francis J. Hallinan, and the Huxley scholarship (50 guineas) to Mr. David B. S. Jones. An entrance scholarship has also been awarded to Mr. Harold W. Williamson (30 guineas); a universities scholarship of 50 guineas to Mr. I. Milton Davies, and a universities exhibition of 20 guineas to Mr. Abel Evans, both of the London University.

St. George's Hospital Medical School.—A course of six lectures on Public Health will be given in the Medical School of St. George's Hospital by Mr. F. E. Fremantle, Edward Jenner lecturer, on Tuesdays, Nov. 2nd, 9th, 16th, 23rd, and 30th, and Dec. 7th, at 4 o'clock. The following subjects will be discussed: (1) The Declining Birth-rate; (2) Vital Statistics; (3) Infant Health; (4) School Health; (5) Isolation Hospitals; and (6) Housing and Town Planning. These lectures are open to those interested in public health, a fee of half a guinea being charged for the course. Application for tickets of admission should be made to Mr. S. A. Williamson, clerk to the Dear, St. George's Hospital Medical School, S.W.

PRESENTATION TO A MEDICAL MAYOR.—At Leicester on Tuesday evening last presentations were made to Mr. Charles Lakin, L.R.C.P. Edin., L.S.A., mayor of Leicester this year, and to Dr. Robert Wallace Wesley Henry. The presentations were from the blind people of the town and the council of the Wycliffe Society for Helping the Blind, and were in recognition of many years of service by Mr. Lakin as honorary physician and Dr. Henry as honorary ophthalmic surgeon to that institution. At Tuesday's meeting of the Leicester town council a special committee was appointed to make the necessary arrangements for a banquet to the retiring mayor on the conclusion of his year of office on Nov. 1st.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of the Medical Sickness, Annuity, and Life Assurance Society was held on Sept. 24th. There was present: Mr. J. Brindley James (chairman), Dr. M. G. Biggs, Dr. H. A. Sansom, Dr. J. W. Hunt, Dr. F. J. Allan, Mr. W. Thomas (Birmingham), Dr. F. C. Martley, Dr. Frederick S. Palmer, Dr. W. G. Dickinson, Dr. W. A. Dingle, Mr. F. S. Edwards, Dr. W. Knowsley Sibley, Mr. Edward Bartlett, and Dr. J. B. Ball. The records show that the business of the society is still growing in a satisfactory manner. Every year shows an increase in the number of members and the amount of the invested reserve, while the amount paid away in sickness claims does not exceed what is expected and provided for in the tables of contributions. The society has no agents and pays no commission, while the funds earn a considerable amount more interest than is assumed in the valuation of the

business. The substantial surplus thus produced allows of the payment of a handsome bonus to those members who reach the age of 65 years. Prospectuses and all further particulars can be obtained on application to Mr. F. Addiscott, secretary, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION.—The autumn meeting of the South-Eastern division of this association will be held, by the courtesy of Dr. J. O. Adams and Mr. G. H. Johnston, at Brooke House, Upper Clapton, N.E., on Wednesday next, Oct. 6th. The proceedings will commence at noon, when members will inspect the house and grounds. After luncheon the general meeting will be held and the following communications read: By Dr. F. W. Edridge-Green, the Theory of Vision and Colour Perception (this paper will be illustrated with coloured lantern slides); and by Dr. T. Duncan Greenlees, Lunacy Matters in Cape Colony. The members will dine together after the meeting at the Café Monico, Piccadilly-circus, W., at 6.45 P.M.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Housing and Town Planning Bill.

THE Housing and Town Planning Bill has undergone drastic altera tion in committee of the House of Lords. The amendments introduced into the Housing part are numerous, but the Town Planning part has been completely transformed. In fact, so great is the deviation from the text of the Bill as it left the House of Commons that it is understood that the Government is taking into its consideration the advisability of dropping the part relating to Town Planning. In the Bill as it reached the Lords very extensive powers in regard to town planning schemes were vested in the Local Government Board. The attitude of the majority of peers was that those powers were quite beyond what it was desirable to confer on an executive department. Accordingly a scheme of procedure by provisional order in Parliament was substituted in cases where objection was taken to a scheme. The view of the Government is that this procedure is so costly that it will defeat the objects of the Bill. In the clause relating to the appointment of county medical officers of health, the peers, against the deliberate advice of the Government, insisted on two amendments. They struck out the provision that the Local Government Board might by order prescribe the duties of medical officers of health appointed by a county council. They also removed the subsection which made a county medical officer removeable only with the consent of the Local Government Board. Both the Earl of CREWE, who leads the Government in the Rouse of Lords, and Earl BEAUCHAMP, who has had charge of the Bill, protested against thes amendments.

Local Education Authorities (Medical Treatment) Bill.

The Local Education Authorities (Medical Treatment) Bill has been read a third time and passed by the House of Lords. Its object is to provide for the recovery by local education authorities of costs for medical treatment of children attending public elementary schools in England and Wales.

The Motor-cars of Medical Men.

The clauses of the Finance Bill dealing with the taxation of motorcars and motor spirit have been passed by the House of Commons. Clause 65 lays down certain conditions which are to accompany exemptions and allowances in respect of the duty on motor spirit, but the concession which the Chancellor of the Exchequer promised to medical men will be embodied in one of the schedules which have still to be considered. Clause 66, which imposes a duty on licences for motor-cars, contains a subsection relieving medical men of half its amount. It runs thus: "It a duly qualified medical practitioner proves to the satisfaction of the Commissioners or council by whom the licence is granted that any motor-car kept by him is kept for the purpose of his profession, he shall be entitled to an allowance in respect of the duty payable under this section on the car equal to half the amount of duty so payable."

Metropolitan Ambulances Bi'l.

The Metropolitan Ambulances Bill has been read a third time and passed by the House of Lords.

HOUSE OF LORDS.

THURSDAY, SEPT. 23RD.

County Medical Officers of Health.

During the discussions on the Housing, Town Planning, &c., Bill in committee the House considered Part III. which relates to county medical officers, county public health and housing committees, &c. Clause 68 runs as follows:—

(1) Every county council shall appoint a medical officer of health under section seventeen of the Local Government Act, 1888.

(2) The Local Government Board may by order prescribe the duties of medical officers of health appointed by a county council under section seventeen of the Local Government Act, 1888, whether before or after the passing of this Act.

(3) The power of county councils and district councils under the said section to make arrangements with respect to medical officers of health shall cease, without prejudice to any arrangement made previously to the date of the passing of this Act.

(4) The medical officer of health of a county shall, for the purposes of his duties have the same powers of entry on premises as are

of his duties, have the same powers of entry on premises as are conferred on a medical officer of health of a district by or under any enactment.

(5) A medical officer of health of a county shall be removeable by the county council with the consent of the Local Government Board and not otherwise.

(6) A medical officer of health of a county shall not be appointed for a

(6) A medical officer of health of a county shall not be appointed for a limited period only. Provided that the county council may, with the sanction of the Local Government Board, make any temporary arrangement for the performance of all or any of the duties of the medical officer of health of the county, and any person appointed by virtue of any such arrangement to perform those duties or any of them shall, subject to the terms of his appointment, have all the powers, duties, and liabilities of the medical officer of health of the county.
(7) A medical officer of health appointed under the said section as amended by this section shall not engage in private practice, and shall

amended by this section shall not engage in private practice, and shall not hold any other public appointment without the express written consent of the Local Government Board.

(?) A medical officer of health appointed under the said section as amended by this section shall not engage in private practice, and shall not hold any other public appointment without the express written consent of the Local Government Board.

Lord Beller, as an amendment, moved to omit Subsection (2) which gives the Local Government Board power to prescribe the duties of county medical officers of health. Speaking for the County Councils' Association, he said that the proposal in the Bill would interfere to a large extent with the county councils carrying out their duties in an efficient manner. He did not think there was any case for direct interference of this sort by a Government department, and it was entirely contrary to the whole system of local government that the duties of medical officers of health should be laid down and prescribed by the Local Government Board. He thought that the medical officers of health of counties were in a sufficiently independent position to be able to withstand any improper pressure. If their duties were to be prescribed by the Local Government Board the medical officer would feel that he was more under the authority of the department than of the county council. That, he considered, night have unfortunate results.

Lord CLIFFORD of CHUDLEIGH considered that the subsection was in the nature of an insult to county councils. Surely they could be trusted without the Local Government Board taking upon itself the power to give direct orders to its servants.

Karl Beauchamy (who was in charge of the Bill) replied that His Majeety's Government attached a very real importance to this subsection, which the two noble lords were anxious to omit from the Bill. There was no intention on the part of the Local Government Board to do anything to interfere with the dignity of county councils. All the county boroughs had their medical officers of health of counties should be defined. Uniformity was of importance in such matters as the goth of the case of county councils not so progressive as

Lord Belper said, with regard to the remark of Earl Beauchamp about the medical officers of county boroughs, that the boroughs were sanitary authorities. The county councils were merely supervising

sanitary authorities. The county councils were merely supervising bodies.

The Earl of Crews said that he was sorry that the county councils had taken up a hostile attitude to the subsection. There could be no intention of offering any insult to them. The object of the Government's proposal was to secure a minimum standard of efficiency in the medical officer. Even the most devoted admirer of the county councils would admit that the councils themselves were not equally independent and efficient, and those whom they appointed possessed varying degrees of efficiency. Noble lords opposite, after taking the view which they had exhibited throughout all the discussion of the Bill with regard to the policy of the Local Government Board, were not likely to be convinced by anything which he could say on this subject. The suggestion made by Viscount St. Aldwyn would narrow the operations of the clause and would apply only to the Bill. He regretted that the Government was not able to give way on this point and he did not know whether it was any use to discuss the matter further. The amendment was then carried without a division and Subsection (2) omitted.

section (2) omitted.

section (2) omitted.

Lord Belfer moved as an amendment to leave out Subsection (5), which provided that the consent of the Local Government Board should be necessary for the removal from office of a county medical officer of health. He expressed surprise at the language used by the noble lord in charge of the Bill. In those counties where medical officers of health had been appointed they were men of high integrity

and it would be an insult to suggest that their action would be influenced by unworthy considerations. So far as he knew of the atmosphere of county councils it was entirely out of the question to suggest that a medical officer would be pensilsed for his actions. It was almost unthinkable that if pressure were attempted to be brought to bear upon a medical officer of health by a member, it would be tolerated. There might have been such a case, but he had never known of it.

to bear upon a medical officer of health by a member, it would be tolerated. There might have been such a case, but he had never known of it.

Earl Beaughamp said that it was with the same acute sense of helplessness that he now mentioned that His Majesty's Government did attach great importance to this subsection. One of the main objects of His Majesty's Government was to do its utmost to raise the status of the medical officers of health throughout the country. Surely everyone was anxious that the country medical officer of health should be the best man that could be got. This and similar proposals to raise their position had been the desire of social reformers for many years. He did not think that the subsection went too far, and he made an appeal to their lordships to allow it to remain.

The Marquis of Landowne thought that their lordships should do nothing to belittle the authority of the county councils. Until lately it had been the policy to strengthen those great bodies, and he regretted to see a different tendency now. It was essential that the rolations of a medical officer and his council should be most cordial, but these relations were not likely to be improved if the council knew that his allegiance was not due to it but to a public department in London. He desired to do nothing which might impair the authority of the county council in a matter of this sort.

The Earl of Kimberrey remarked that he was not afraid of the Local Government Board in this matter. His experience was that the duties of a county medical officer were very slight. He would like to see more power given to him and to have it defined in a definite way. Eventually he must become a great officer, dealing with the water-supply and other matters. Whilst he did not think that it would be a good thing for the county medical officer of health to undertake the medical inspection of shool children, yet he might supervise, the work, and he might also be over the district medical officer, dealing with the ware, and he might also be over t

Lord MonkBartron proposed the first of a series of amendments to Subsection (7) so as to make it read "a medical officer of health appointed under the said section as amended by this section shall not appointed under the said section as amended by this section shall not engage in general medical practice without the express written consent of the Local Government Board, without prejudice to any arrangement made previously to the date of the passing of this Act in the case of a medical officer already appointed under Section 17 of the Local Government Act of 1883." The noble lord, in explaining the purpose of his amendments, said that he took it that these medical officers should not be excluded from lectureships in hospitals and from examining in amiversities, and from doing those things which the Local Government Board allowed its own officers to do.

Rarl BEAUCHAMP said that the Government did not see its way to accept the amendment. It would allow the county medical officer to engage in general consulting practice. That might take up a great deal of his time and take him away from the work of the county. He further pointed out to the noble lord that by the subsection the Local Government Board was empowered to give its consent to a county medical officer holding other public appointments.

Lord Monk Bertton did not press his amendments.

The clause as amended by the omission of Subsections (2) and (5) was agreed to.

agreed to.

HOUSE OF COMMONS.

THURSDAY, SEPT. 23nd.

Soldiers' Teeth.

Soldiers' Tecth.

Mr. John Ward asked the Secretary of State for War whether, in view of the fact that many recruits for the regulararmy, otherwise qualified, were rejected because of defective teeth, means would be devised to rectify this falling, and so make considerable reduction in the proportion of rejections.—Mr. Haldden amered: Whenever in the opinion of a recruiting medical officer dental treatment will render a recruit efficient, the necessary treatment is now given, provided its cost does not exceed £1.

not exceed £1.

Mr. J. WARD: Is that really the estimate of the value of a recruit-

a sovereign?

Mr. HALDANE: No, it is not; but we do not supply false teeth for 50,000 troops.

Mr. A. LYNOH: Will provision be made for the proper care of soldiers teeth as part of their regular daily routine?

Mr. HALDANE: That is not a question which arises out of the one which I answered. The right honourable gentleman added in reply to further supplementary questions: For the last two years there has been a very considerable improvement in the teeth.

Army Recruits.

In reply to Mr. SUMMERBEIL, Mr. HALDANE said that in the period from July 1st, 1908, to June 30th, 1909, the total number of men who presented themselves for enlistment in the army was 59,686 and the total number found lit to serve was 43,134.

Hospitals and the Spirit Duties.

In the discussion on clause 61 of the Finance Bill, which imposes additional customs and excise duties on spirits, reference was made to the effect it was likely to have on the price of medicines and on the

maintenance cost of hospitals.

Sir William Bull, as an amendment, moved to omit the subsection which increased the duties proportionately on certain articles in which spirits were contained or in the manufacture of which they were used. This, he said, raised the question of taxing medical spirits. This was not a question of luxury but of necessity. When people were

ill spirits of this kind were ordered and they were bound to take them. This was a very heavy tax on people who were ill able to afford it. A large number of hospitals were struggling under great difficulties and the increase of the cost involved by this taxation was estimated for some of them to amount to £2900 or £3000 a year. He had been in communication with several large chemists throughout the country, and he had just had a letter from one who stated that he did not trouble about the tax because he simply intended to put it on to the consumer. He had had a letter from another who said that his bill in connexion with these spirits would be over £3500 a year. Taking the London hospitals alone, he understood the tax would amount to over £30,000. It was bound to be extremely unpopular amongst the poorer classes. Even a poor man who had to have a tooth extracted under gas would probably have to pay more fees on account of the tax.

Mr. HODHOUSE: (Secretary to the Treasury) said that as he understood it the proposal was to leave unaltered duty on certain articles to which the amendment related. That would be a very difficult thing to do. The late Lord Ritchie when Chancellor of the Exchequer brought in a Bill in 1903 to try to do something of the sort. That Bill failed. The time held by the honourable gentlemen opposite were for some little time held by the Pharmaceutical Society, which sent a deputation to the Chancellor of the Exchequer. They heard what was to be said by the Board of Customs and Excise on the question, and they went away satisfied that the proposals embodied in this amendment were impracticable for this reason. If the Treasury gave spirits duty free to chemists and hospitals, they could not subsequently control the disposal of the spirits by the person who was cutified to obtain them duty free. He could distill the spirits out of the particular articles mentioned in the schedule, and it could not be said whether they were used in a hospital or elsewhere. It would be impossible to asy whether

The Government could not accept the amendment.

Mr. AUSTEN CHAMBERIAIN remarked that without access to official information be could not say whether it would be possible for the excise to take sufficient security in the case of chemists. He only hoped that the Government had seriously considered the question before they decided that it was impossible to make the distinction. However, he would say that it was one more reason against adding to the very heavy spirit duties. The tax was working out as a very heavy spirit duties. The tax was working out as a very heavy great extent. It would fall very heavily upon hospitals, dispensaries, and other institutions of that kind.

Mr. LYULPH STANLEY and Mr. FELL also supported the appeal for exceptional treatment for medicinal spirits. The amendment was rejected by 159 votes to 84.

The Ailments of Female Telegraph Operators.

The Allments of Female Telegraph Operators.

Mr. J. P. FARRELL asked the Postmaster-General whether he was aware that muscular paralysis of the arm had become prevalent in the female branch of the telegraph service by reason of the long hours of duty imposed, especially in big offices; whether he was aware that hysteria, nervous breakdown, and other symptoms followed, and whether an alternation of duties would be devised whereby these maladies could be obviated and greatly prevented. Mr. Buxnox wrote in reply: I should be glad if the honourable Member would furnish me with particulars of any case of paralysis of which he has cognisance, and I will at once inquire into it. I am not aware of any prevalence of the allments referred to in the question.

MONDAY, SEPT. 27TH.

Medical Services in India.

Mr. HAZLETON asked the Under Secretary of State for India whether Mr. Hazleton asked the Under Secretary of State for India whether the positions of military assistant surgeons in India were open to Indians; whether the salaries of these positions were higher than those of civil assistant surgeons who were mainly Indians; and whether it was proposed to remove the disqualification in the way of competent Indians entering all ranks of the medical service of their country.—The MASTER OF ELHBANK replied (by written answer): The answer to the first question is in the negative, military assistant surgeons being regarded primarily for service in European military hospitals. The answer to the second question is in the affirmative, but the difference in rates of pay is not very considerable, being confined to the highest graded. The Secretary of State will consult the Government of India as to the advisability of some revision to the constitution of this branch of their medical service. medical service.

TUESDAY, SEPT. 28TH.

Tubercle of the Lung in the Army.

Mr. Summerbell miked the Secretary of State for War whether be Mr. Summerbell saked the Secretary of State for War whether be could state the number of soldiers that have been discharged from the army during the ten years ending 1903 suffering from tubercle of the lung, and the precautions taken by his department to prevent the spreading of the disease.—Mr. Haldane replied: The number of men so discharged was as follows:—1899, 224; 1900, 328; 1901, 350; 1902, 334; 1903, 301; 1904, 440; 1905, 333; 1906, 400; 1907, 304; and 1908, 272. While in hospital patients suffering from tubercle of the lung are generally kept apart from other patients and treated generally as case of infectious disease. On discharge, a notification is sent to the medical officer of health in the town or district where the man proposes to reside. The treatment in military hospitals (the right honourable gentleman continued in answer to further questions) is confined to temporary retention of a few men as free patients owing to unfitness to travel. The cost of maintenance in these cases in homes is not provided from army funds. No special money grant is made to soldiers discharged from the army suffering from tubercle of the lung.

The Vaccination Act, 1907.

The Vaccination Act, 1867.

The Vaccination Act, 1807.

Mr. Pointer asked the President of the Local Government Board whether he would cause inquiry to be made into the practice of vaccination to ascertain whether the lymph now used had its origin in, or was in any way connected with, variolous matter; and whether, should his inquiries go to show that variolous matter was the origin of the present-day lymph, he would institute proceedings under Section 32 of the Vaccination Act of 1867 against persons using such lymph.—BURNS answered: Section 32 of the Vaccination Act, 1867, renders it an offence to produce, or attempt to produce, small-pox in any person by inoculation with variolous matter or by any other means. Most of the lymph used in cases of primary vaccination is that supplied from the

Government lymph establishment. That lymph does not produce, and is not used to produce, small-pox, and persons using it do not come within the section referred to. There is no reason to doubt that the same observations apply with regard to other lymph in use in this country. There does not appear to me to be any need for inquiry on country. T

Medical Relief and Old-Age Pensioners.

Answering Mr. CECIL HARMSWORTH, Mr. BURNS said: If an old-age pensioner applies to the guardians for medical relief it is their duty to consider whether any such relief should be given to him, and, if so, in what form. The receipt of any medical or surgical assistance by or on the recommendation of a medical officer would not disquality the pensioner from the receipt of his pension.

The Medical Treatment of Suffragist Prisoners.

The Medical Treatment of Suffragist Prisoners.

Mr. KERHARDE asked the Secretary of State for the Home Department whether he had any official information concerning the state of health of the nine women suffrage prisoners in Winson Green Gaol, Birmingham; how many of them were being subjected to hospital treatment; and whether he could say under what prison rule or regulation one of the prisoners had had food pumped down her throat against her will.—Mr. MASTERMAN (who replied for Mr. Gladstone) said: Yes, Sir, the Secretary of State has received a report this morning from the Governor of Birmingham prison to the effect that six of the suffragist prisoners are still under special medical treatment for self-starvation, and that in consequence of this treatment the condition of health of these prisoners shows progressive improvement. No prison rule or regulation deals specifically with this subject. It is the duty of the prison authorities to take such steps as are necessary to prevent prisoners from committing suicide or doing themselves personal migury. If they allowed any of their prisoners to cause their own death by starvation they would incur the greatest censure, if, indeed, they did not lay themselves open to criminal proceedings. In previous similar cases of this kind the prison authorities have always recognised this duty.

Mr. Weight Hanney of the the feet that else of these women are still. this duty.

Mr. Keir Hardie: Is it the fact that six of these women are still being fed by means of the stomach pump?—Mr. Masterman: The information which I have received shows that there are various means of persuading these women to take nourishment, and only in the last resort is the ordinary hospital instrument used. I believe it has been used only in three cases.

BOOKS, ETC., RECEIVED.

BATLEIBRE, TINDALL, AND COX, London.

The Open-Air or Sanatorium Treatment of Pulmonary Tuberculosis. By F. Rufenacht Walters, M.D., B.S. Lond., M.R.O.P.,
F.R.C.S. Price 5s. net.

Practical Microscopy. An Introduction to Microscopical Methods.
By F. Shillington Scales, M.A., B.C. Cantab. Second edition.
Price 5s. net.

BRITISH MEDICAL ASSOCIATION, London.

Secret Remedies. What they Cost and What they Contain. Based on Analyses made for the British Medical Association. Price on Ana ls. net.

FISCHER, GUSTAV, Jena.

Die Gowächse der Nebennieren. Von Prof. Dr. med. Carl Winkler. (Aus dem Königlich Pathologischen Institut zu Breslau. Direktor Geh. Med. Rat Prof. Dr. Ponfick.) Price M.9.

FROWDE, HENRY, and HODDER AND STOUGHTON, London.

Text-book of Anatomy. Edited by D. J. Cunningham, F.R.S., M.D. Edin. et Dubl., D.Sc., LL.D. Glasg, et St. And., D.C.L. Oxon. Third edition. Price 31s. 6d. net.

GALE AND POLDEN, LIMITED, London and Portsmouth.

Cale and Polden's Military Series. Guide to Promotion for Non-Commissioned Officers (Corporal to Staff-Sergeant) and Men of the Royal Army Medical Corps. With Appendix on Hints for Young N.C.O.'s on Clerical and Other Duties in a Military Hospital. Compiled by Captain S. T. Beggs, M.B., Royal Army Medical Corps (Heserve of Officers). Second edition. Price 3s 6d nat. 3e. 6d. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Langer Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for graduations publication.

Brown, G. A., M.B., C.M. Glasg., has been appointed Principal Medical Officer for the Inspection of Children to the Govan Parish School

Officer for the Inspection of Children to the Govan Parish School Board.

BRYCE, T. H., M.D., C.M. Glasg., F.F.P.S. Glasg., has been appointed Reglus Professor of Anatomy in the University of Glasgow.

CARSON, J. T., M.B., Ch.B. Edin., has been appointed Junior House Surgeon at the Bolton Infirmary.

HMMERSON, HERBERT, M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Ophthalmic Surgeon to the Chesterfield and North Derbyshire Hospital.

GORDON, A. BRUCE, M.B., Ch.B. Edin., has been appointed Resident Medical Officer at the London Temperance Hospital.

HOARE, E. F., M.D., Ch.B. Liverp., L.S.A., has been appointed Deputy Medical Officer and Vaccinator to Dalsybrook Schools by the West Derby Board of Guardians.

MARNOCH, J., M.B., C.M. Aberd., has been appointed Professor of

MARNOCH, J., M.B., C.M. Aberd., has been appointed Professor of Surgery in the University of Aberdeen. ROBERTS, ERNEST T., M.D., C.M. Edin., has been appointed Principal Medical Officer for the Inspection of Children to the Glasgow

SHEPHERD, H. F., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the works of the South Shields Gas Company, at South Shields, in the county of Durham.

THYNE, W., M.D. Edin., has been appointed Medical Officer for the Workhouse and the First District, and Public Vaccinator for the First District, of the Barnet Union.

WHITTLE, E. DENNIS, M.R.C.S., L.R.C.P. Lond., has been appointed Assistant Medical Officer of the Lambeth Board of Guardians.

Pacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BANBURY, HORTON INFIRMARY.-House Surgeon. Salary 280 per

BANBURY, HORTON INFIRMARY.—House Surgeon. Salary £80 per annum, with board and residence.

BIRMINGHAM GERRAL DISPENSARY.—Resident Surgeon, unmarried.

Salary £200 per annum.

BIRMINGHAM. QUEEN'S HOSPITAL.—Honorary Physician.

BOLINGEROKE HOSPITAL, Wandsworth Common, S.W.—Two Rouse Surgeons, for six months. Salary at rate of £75 per annum, with board and residence.

BRIGHTON, HOVE, AND PRESTON DISPENSARY (Northern Branch).—
Resident Medical Officer, unmarried. Salary £160, with rooms, &s.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—House Surgeon, unmarried.

Salary £120 per annum, with board and residence. Also Third House Surgeon, unmarried. Salary £50 per annum, with spacements, board, and laundry. Also Honorary Assistant Surgeon.

BRISTOL GERERAL HOSPITAL.—House Surgeon, Casualty House Surgeon, with board, residence, &c.

BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

months. Shirty at law of and washing.

BURY ST. EDMUNDS, WEST SUPFOLK GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and lodging.

CANTERBURY, KENT AND CANTERBURY HospITAL.—House Physician, unmarried. Salary £70 per annum, with board, lodging, and

washing.
CENTRAL LONDON THROAT AND BAR HOSPITAL, Gray'S Inn-road, W.C.

UENTRAL LONDON THROAT AND HAR HOSPITAL, Gray's Inn-road, W.C.

—Honorary Registrar.

CHESTER, CITY OF.—Assistant Medical Officer of Health. Salary £250
per annum.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Physician, also House
Surgeon. Salarles £30 per annum, with board, residence, and
washing.

DERBY. COUNTY ROBOURY

DERBY, COUNTY BOROUGH.—Assistant Medical Officer of Health.

DERBY, COUNTY BOROUGH.—Assistant Medical Officer of Health.

Salary £120 per annum, with board and lodging.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon. Salary £75 per annum, with residence, board, and washin g.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Surgeon, also Assistant Surgeon. Also Second Medical Officer to the Casualty Department for six months. Salary strate of £40 per annum, with luncheon and tea.

EDINBURGH SCHOOL BOARD.—Two Assistant Medical Officers (one male, one female). Salaries £250 and £200 per annum.

FARRINGDON GENERAL DISPENSARY AND LYING-IN CHARITY, 17, Bartlett's Buildings, Holborn-circus, E.C.—Resident Medical Officer. Salary £100 per annum, with momes. &c.

Bartlett & Billionings, noncorn-circus, r. C.—Resident mesical Omeer.
Salary £100 per annum, with rooms, &c.
Greenock Infirmary.—Assistant House Surgeon. Salary £40 per
annum, with board and residence.
Halifax Union Poor-Law Hospital, Salterhebble.—Resident Medical
Officer. Salary £130 per annum, with spartments, rations, and

Washing.

Hampstead General Hospital.—House Physician, also House Surgeon, both for six months. Salaries at rate of £70 per annum, with board and residence.

HERTFORD COUNTY HOSPITAL.—Resident House Surgeon, unmarried.
Salary at rate of £100 per annum, with board, washing, and apartments.

Hospital for Sick Children, Great Ormond-street, London, W.C.—
House Surgeon, unmarried, for six months. Salary £30, with
board and residence. Also Honorary Anasthetist.

Ipswich, East Suffolk and Ipswich Hospital.—Third House
Surgeon. Salary £55 per annum, with board, lodging, and washing.

Kettering and District General. Hospital.—Resident Medical Salary £100 per annum, with board, resi-Officer, undence, &c.

dence, ac.
King Edward VII. Sanatorium, Midhurst, Sussex.—Junior Assistant
Medical Officer. Salary £100 per annum, with board, lodging, and attendance.

LEEDS. HOSPITAL FOR WOMEN AND CHILDREN.-Two House Surgeons.

LEEDS, HOSPITAL FOR WOMEN AND CHILDREN.—I wo frouse Surgeons. Salary at rate of 250 per annum, with board.

Lincoln Mental Hospital, The Lawn, Lincoln.—Assistant Medical Officer, unmarried. Salary £150 per annum, board, &c.

LONDON HOSPITAL, Whitechapel, E.—Surgeon, Assistant Surgeon, Medical Officer in charge of the Radiographic Department, and two

Medical Officer in charge of the Radiographic Department, and two Assistant Anaschetists

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.—Senior and Junior Resident Medical Officers. Salary of former £100, and of latter £50 per annum, with board and residence. Also Assistant Physician.

NewPort AND Monmouthshire Hospital.—House Physician. Salary £80 per annum, with board, residence, and laundry.

Norwich, Norfolk and Norwich Hospital.—House Physician, unmarried. Salary £20 per annum, with board, lodging, and

washing.

NOTTINGHAM GENERAL DISPENSARY.—Two Assistant Resident Surgeons, unmarried. Salary £160 each, with apartments, attendance, light, and fuel.

ORKNEY, PARISH COUNCIL, PAPA WESTRAY.—Medical Officer and Public Vaccinator. Salary £100 per annum and fees.

PAISLEY, GOVAN DISTRICT ASYLUM, Hawkhead.—Second Assistant Medical Officer. Salary £150 per annum, with rooms, board,

Medical Officer. Salary £150 per annum, with rooms, board, laundry, and attendance.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenbam, N.—House Surgeon, House Physician, Junior House Surgeon, and Junior House Physician. Salarics of two former £75 per annum, and of two latter £40 per annum, with residence, board, and laundry.

QUEER'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Surgeon for six months. Salary at rate of £50 per annum, with board, residence, and laundry. Also Assistant Resident Medical Officer. Salary £75 per annum, with board, residence, and washing.

washing.
ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surger

Salary £80 per annum, with rooms, board, and washing.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, London,

E.C.—Resident Medical Officer for six months. Salary at rate of £120 per annum, with board, lodging, and washing. Also Assistant Physician.

Physician.

ROYAL NATIONAL ORTHOP EDIC HOSPITAL. 234, Great Portland-street,
W.—Resident House Surgeon. Salary £100 per annum, with board,
residence, and washing.

St. GLIES', CAMBERWELL, INFIRMARY AND WORKHOUSE, S.E.—Assistant
Medical Officer for Infirmary and Workhouse, and Assistant Medical
Officer for Infirmary. Salaries £140 and £120 per annum, with
apartments, board, and washing.

apartments, board, and washing.

St. Panoras Infirmary and Workhouse, Panoras-road, N.—Assistant Medical Superintendent and Medical Officer. Salary £135 per annum, with residential allowances.

SHEFFIELD ROYAL INFIRMARY.—Assistant House Physician. Salary £50 per annum, with board and residence.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Senior House Surgeon. Salary £100 per annum, with residence, board, and washing.

SOUTH WALES AND MONMOUTHSHIRE UNIVERSITY COLLEGE.—Assistant Lecturer and Demonstrator in Anatomy.

STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House Surgeon. Salary £82 per annum, with board, residence, and laundry

SURBEY DISPENSARY, Southwark, S.E.—Physician. Salary 50 guineas

BURREY DISPENSARY, SOULDWARK, S.E.—FINSHEIGH. SCHOOL GRAND BOTTAL, TAUNTON AND SOMERSET HOSPITAL, Taunton.—Resident Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and laundry.

TUNERIDGE WELLS GENERAL HOSPITAL.—Junior Resident Medical Officer. Salary £30 per annum.

WANDSWORTH UNION INFIRMARY, St. John's-hill, near Clapham Junction.—Junior Assistant Medical Officer, unmarried, for six months. Salary at rate of £120 per annum, with board, lodging, and washing. and washing.
Weston-super-Mare Hospital.—House Surgeon, unmarried. Salary

£100 per annum, with board and residence.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Keighley, in the county of York.

Births, Marriages, and Deaths.

Cole,—On Sept. 28th, at 25. Upper Berkeley-street, Portman-square W., the wife of Robert Henry Cole, M.D., of a son.

Corfield.—On Sept. 21st, at Heechwood, Upper Tooting, the wife of Carruthers Corneld, M.R.C.S. Eng., L.R.C.P., L.S.A. Lond., of a

Carruthers Corfield, M.K.C.S. Eng., L.K.C.P., L.S.A. Lond., of a daughter.

LUND.—On Sept. 25th, at Collingham-road, S.W., the wife of Kenneth F. Lund, M.B. Lond., of a daughter.

MANSELL.—On Sept. 25th, at "Crofton," West Hill, Hastings, the wife of H. R. Mansell, M.R.C.S.. of a daughter.

MARTIN.—On Sept. 20th, at Court, Cullompton, Devonshire, the wife of Captain J. F. Martin, R.A.M.C., of a daughter.

MARRIAGES.

ALEXANDEB—ORME.—On Sept. 7th, at Angmering, Sussex, Frederick Hugh Alexander, M.B. Lond., M.R.C.S., L.R.C.P., of Little-hampton, Sussex. to Agnes, youngest daughter of the Rev. J. B. Orme, Rector of Angmering.

CHIDELL—WESTALL—On Sept. 21st, at St. Matthias's Church, Richmond, Surrey, Claude Churchill Chidell, M.B., B.S. Lond., to Ethel Alicia Isabel, youngest daughter of the late William Westall, of Rydal, Worthing.

Bthel Alicia Isabel, youngest daughter of the late William Westall, of Rydal, Worthing.

DINGLE-WHITELIAW.—On August 16th, at St. Michael's, Sandakan, B.N. Borneo, Percival A. Dingle, M.R.C.S., L.R.C.P. Lond., to Norah, widow of Dr. T. Buchanan Whitelaw.

DOUTY—WILLS.—On Sept. 21st, at St. Paul's, Knightsbridge, Edward Henry Douty, M.A., M.D., to Kathleen Mary Hamilton Wills, youngest daughter of the late Sir Frederick Wills, Bart., and Lady Wills.

GEOGHEGAN—PICETHORN.—On Sept. 23rd, at St. Mary's, Hammersmith, Staff-Surgeon Herbert Lyne Geoghegan, M.D., R.N., to Ella, only daughter of the late Inspector-General T. Russell Pickthorn, R.N.

DEATHS.

DEATHS.

ALLEM.—On Sept. 28th, at Scarborough, suddenly, John Edward Allen, M.D., F.R.C.S., B.Sc., of S. Nicholas House, York, aged 58.

BULLEID.—On Sept. 27th, at Connaught-street, Hyde Park, George Bulleid, M.R.C.S., in his 39th year.

COBBIN.—On Sept. 21st, suddenly, at Merivale, Beckenham, Kent, E.R. St. Clair Corbin, M.B. Lond., M.R.C.S. Eng., aged 51 years.

PHILLIPS.—On Sept. 25th, in London, George Richard Turner Phillips, J.P., M.R.C.S., M.S.A.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Rotes, Short Comments, and Answers to Correspondents.

A RELIC OF DIOSCORIDES.

Some 60 years ago a rectangular stone receptacle, apparently for containing manuscripts, was discovered at Alexandria, bearing an inscription reading ΔΙΟΣΚΟΥΡΙΔΗΣ Γ ΤΟΜΟΙ. This coffer has now disappeared, but its correct dimensions were preserved among the papers of the late Mr. C. Harris, British Consul at Alexandria, who noted that it was a "block of granite dug up in 1847 17½ inches long, 15½ wide and deep, whilst the hole carved out of the top for the books was 10 inches by 8, with a depth of 3 inches. This relic is interesting for two reasons—firstly, because it was almost certainly made to preserve one or more works of the famous botanist and medical author, Dioscorides of Anazarba; and secondly, because if this is correct, and if it was made for the great library at Alexandria. it was intended for the new collections of books founded to replace the library destroyed by Cæsar's soldiers. There were some eight or nine authors who were named Dioscorides, one of whom, a writer of epigrams, is said to have lived at Alexandria, but none of them were so celebrated as the Dioscorides of "Materia Medica" fame, and it is more than probable that he is the person whose works are alluded to in the text. The size of the receptacle is just ample to have provided for three rolls of papyrus, which are doubtless indicated by the three "tomol." The "De Materia Medica," however, consisted of five books, but there is no reason why the scribes should not have so engrossed the work that it occupied three codices. Perhaps, however, each papyrus roll bore one complete work of Dioscorides. Many have been attributed to him, and two of these appear to really have been his production. the Περί δηλτηήριων φάριακων and the Περί Ιοδόλων. There is a fourth treatise, a "De Venenis," attributed to Dioscorides. but its contents appear to have been in many cases compiled from Oribasius, as was so much of the work of Paul of Ægina. Plagiarism was an almost universal practice amongst classic medical encyclopædists and the "De Materia Medica" itself of Dioscorides is believed to be mainly derived from the work of the same title by Sextius Niger, of the time of Augustus. In the same way Oribasius is now known to have drawn largely for part of his book upon the "De Venenatis Animalibus" of Philoumenos. Necessarily if some of the contents of the "De Venenis," ascribed to Dioscorides, are derived from Oribasius, who flourished later, the treatise cannot be by the famous author of that name who wrote the "De Materia Madica.

The Dioscorides whose three books were to be protected in the stone receptacle must have been a celebrated writer to have a special coffer to protect particularly valued works, for the coffer was placed at the base of a statue of the author at the entrance to the library or of some medical school. The object of providing this costly and indestructible stone capsa was to prevent any damage to the precious book it guarded. Pliny speaks of "armsria" inserted in the walls of libraries, and a bas-relief found in Germany, probably dating from the second century, shows manuscript rolls lying in square compartments apparently of stone. Moreover, it was a practice in Egypt to keep papyri in stone receptacles. The "Rules" of the early Christian monk Pachomius refer to these, and in the ruins of an old Coptic convent the most ancient copy of the "Coptic Psalter" known was found in a stone coffer. The form of the letters on the coffer gives a clue to the date when they were inscribed, which erudite epigraphists say is before A.D. 148. This would put back the works of Dioscorides of Anazarba to the first century, supposing the coffer was to contain them, but this is in accord with modern views as to his era, because no one doubts now but that the three books of the περί φάρμακων σχευασίας composed by Nero's medical attendant Andromachos, the younger, make great use of Dioscorides' work. Also an author named Erotian who dedicated to Andromachos his "Lexicon to Hippocrates" cites Dioscorides. So also does Asklepiades, the younger, who refers to both Andromachos and Dioscorides. Some of these allusions may be to a medical author Dioscorides, "Phakas" or "Alexandrius," who served Ptolemy Auletes and Cleopatra, and it may be suggested that his works were those intended for custody in the coffer, but their length militates against the idea because his medical treatise occupied 24 books and his commentary upon Hippocrates seven.

Presupposing now that the coffer was probably made for a work of the best-known Dioscorides, Was the receptacle the correct size to contain the "De Materia Medica" in three rolls? This can be answered in the affirmative ecause the space would accommodate three papyri of from 40 to 50 feet each, which in very fine Greek writing would be ample for the five books. which in Sprengel's edition, including introduction and com-mentary, occupy two octavo volumes. The papyri of éditions de luce varied from 20 to 40 feet in length. The world has been almost provided with a papyrus of Dioscorides that would have perhaps decided these questions, for in the "Classical Quarterly" for

1908 a fragment of papyrus bearing his treatise has been published.
Finally, there remains the question as to whether the stone clat was intended merely to act as a storehouse for the papyri in the library, or whether it stood at the base of a statue of the author. For ourselves we are inclined to favour the second hypothesis, for not only have many statues of orators and authors been found holding bookrolls in their hands, but several are extant showing these volumes standing in boxes, or coffers called capse, upon the base or plinth upon which rest the feet of the statue. Three specimens of such may be seen in M. Reinach's "Répertoire de la Statuaire," vol. ii., and more may be found in Herr Birt's "Die Buchrolle in der Antiken Kunst."

THE GOOD SAMARITAN ABOVE THE SNOW-LINE.

THE unveiling of a monument has recently taken place to one who had 'scorned delights and lived laborious days" in the region of perpetual snow. St. Simeon Stylites, indeed, led a blameless life perched on the summit of a column. But Pietro Chanoux has a better title to canonisation, having lived not only "without sin," but in the service of man and in the cause of science, at a height compared with which the column of his ascetic counterpart was as the Tower of Siloam beside the snow-peak of Mount Carmel. It was in 1859 that the Hospice of the Little St. Bernard, as the last phase of a history that dates from Roman times, received from its patrons the Knights of St. Maurice, a new superintendent in the Abbé Chanoux. A proficient scholar in the theological sense, the young nominee was an ardent nature-student ssionately fond of mountain solitude in which the companionship of books and the flora and fauna of the region were indeed the "society" of his choice. Add to this a philanthropic spirit which found its special gratification in rescuing the strayed "alpinista" and in ministering to the wants of the poor families maintaining a struggle for existence under the sternest of conditions, and you have an ensemble of qualities that made the appointment to the custody of the Hospice nothing less than an "inspiration." For 50 years the good Abbé remained at his post, often anowed up for weeks on end, and only venturing abroad when his faithful scouts, the St. Bernard dogs, apprised him of the approach of some belated wayfarer whose strength had failed him under the bitter sky or in the assault of the tempest. But even indoors he was never idle, devoted as he was to Biblical study, or within the precincts of the Hospice to the tendance of the flowers which soon made his garden a "point of pilgrimage" for the botanist from every clime. Zoology, too, had a special charm for him, shown in the confidence he could inspire in the steinbock or the chamois which would, in stress of weather, come and take bread out of his hand, or in the birds which would fly to the Hospice from the pursuing storm or the predatory eagle. In midsummer, when for a brief space the access to him was comparatively easy, he was sought out by relays of visitors, from the Queen of Italy to the Italian or Swiss professor; from the nature-student, whether hailing from the British Isles or the British colonies, to the poet or the missionary eager to listen to his narrative of life and adventure above the snowline. His experiences as a pastor and as a rescuer of the imperilled wayfarer, taken down from his lips, will doubtis see the light some day; but the few publications of his own authorship with which he enriched his library of 4000 volumes are but the foretaste of what his writings, left in manuscript, will ere long reveal. For one thing, he was an accomplished meteorologist, so much so, that the Padre Denza of the Vatican Observatory, in acknowledgment of his contributions to the science, called the attention of the Order of St. Maurice to his observations, and an opportune enrichment of his "armamentarium meteorologicum" the result. He had just completed his half century of life at the Hospice when a brief illness carried him off on Feb. 9th last. Still active in mind, he had begun to fail in body-his evesight in particular having been injured by the constant glare of the snow—and amid the sorrowing demonstrations of the poor families to whom he had been a "refuge and a strength," he "entered into rest," felix opportunitate mortis. Proud of their compatriot and custodian, the Order of St. Maurice at once took steps to do honour to his memory, and commissioned the sculptor Signor Tancredi Pozzi with the design and work. This was completed within six months and a brilliant auditory, composed of the "light and leading" of Italy and Switzerland, listened to the orator of the occasion, Signor Paolo Boselli, secretary of the Maurician Order, on its solemn inauguration. The Abbé, his long robes fluttered by the mountain breeze and his white beard waving in sympathy, is represented, piccozza (spud) in one hand and an Alpine flower in the other-a felicitous work of art. On the pedestal runs the inscription :-

"Qui | perdieci lustri | l'Abate Pietro Chanoux | Rettore dell'Ospizio Mauriziano | adorò Dio | nella poesia dei cieli, delle nevi, dei fiori | Pensò ed operò | con anima ardente, gentile | per la Scienza e per la Carità | Lo spirito di Lui | veglia inseparabile | dal Piccolo San Bernardo."

[Here for 50 years the Abbé Pietro Chanoux, rector of the Maurician Hospice, worshipped God in the poetry of sky, of snow, and of flower; meditated and laboured with ardent amiable soul for Science and for Charity. His spirit keeps watch inseparable from the Little St.

Signor Boselli's discourse, a noble effort of Italian oratory, kept the audience for more than an hour in rapt attention as he dwelt on the "poetry of the mountain," on the chequered history of the Hospice, on the character, intellectual and moral, of its rector as a man, a priest, a nature-student, and a patriot, bringing vividly before the listeners (among whom were many of the poor mountaineers the

"grandi dolori" of the Abbé's sympathetic soul and the noble response they evoked from it in ceaseless thought and exertion for his fellow-man. Incidentally he reviewed his contributions to science, awakening the interest of the numerous nature-atudents present by indicating how much valuable observation and reasoning lies inscribed in the manuscripts one day to see the light. And so the touching ceremony (carried out with admirable success by the Order of St. Maurice) came to a close with the echo of the last automobile taking back the last relay of visitors, and with the return of its characteristic silence to the mountain left alone with its favourite son.

PTOMAINE POISONING.

To the Editor of THE LANCET.

SIR,—The frequency of death by ptomaines induces me to offer an instance of personal experience of ptomaine poisoning.

I am not aware if any of the numerous victims were enabled to describe their symptoms or of the treatment adopted in such cases; having attained my ninety-first year, it seems a remarkable escape. On Tuesday evening, the 24th inst., having swallowed some milk, I became aware of its impurity and immediately took three grains of permang. potass. and went to bed, continuing the dose at intervals during the night in aerated water. About 5 A.M. I was awakened by sharp twitching pains all over the abdomen, with retching I brought off only mucus. At 8 A.M. I took a teaspoonful of p. carb. liq. At 9 A.M. diarrhœa supervened, I felt dizzy, and fell. In half an hour I fell again and was helped to an easy chair from which I slipped off, being quite incapable (although conscious) owing to extreme debility. I was troubled with musca volitantes and lay on a couch dozing for an hour; took small doses of liq. strychning and dilute phosphoric acid. This relieved me, but the attack left me with my mouth extremely sore, so that I was unable to take any but spoon food for a week. I recovered gradually and am now convalescent.

I am, Sir, yours faithfully,
Deal, August 30th, 1909.

R. GOODWIN MUMBRAY.

DEODORISING BY ELECTRICALLY GENERATED OZONE.

THE Scientific American of Sept. 11th states that remarkable results have been obtained by an electrical ozone-generating apparatus recently installed at the public library on Michigan-avenue and Washington-street, Chicago. In spite of an excellent system of ventilation, complaints were made of the unpleasant odour from accumulated human emanations, and a new method was tried with a view to counteract it. Direct current at 110 volts was converted to alternating at 120 by a rotary converter, and the latter was stepped up to 8000 volts by a transformer. This high-tension secondary current was allowed to discharge between the plates of the ozoniser, through which the air led to the ventilating apparatus was drawn. Oxygen was thereby converted into ozone in sufficient quantity t neutralise any odour of animal origin.

THE PRODUCTION OF RADIUM.

To the Editor of THE LANCET.

SIR,—In your issue of Sept. 25th you say, "Reuter states that the Austrian Ministry of Public Works has received from the mines at Sankt Joachimsthal 10 grammes of radium which represent the entire production of 18 months." I venture to think you must have misread Reuter's telegram, which I think stated that 10 grammes of radium chloride, equivalent to 1 gramme of pure radium, had been produced. As this company is deeply interested in the production of radium from its own mine in Cornwall and being contractors to the Radium Institute I do not wish such a misapprehension to pass to the public as tha 10 grammes have been produced from Joachimsthal, under the cover your high authority. Pure radium means pure radium bromide, which radium chloride is equivalent to about 10 per cent.

I am, Sir, yours faithfully, F. H. NORTH.

The British Metalliferous Mines, Limited, Church-court, E.C., Sept. 27th, 1909.

THE ANTIQUITY OF NOISE.

A FREQUENT correspondent writes: "Noise and the habit of being noisy are manifestly very ancient. Indeed, just as the chop and steak are probably primeval forms of food, known to the worshippers of Odin and Thor, so loudness of voice and heaviness of foot were doubtless leading attributes of our early Saxon ancestors. Chops, steaks, and noise are peculiar to country inns, from the hedge-side ale-house to the family and commercial hotel of some pretensions in county towns, for these fine old institutions are of great antiquity and have been centres of social life, and in some sort of civilisation, almost as long as parish churches. It is the custom to praise the inn, and an old poet is cited who always found his kindliest welcome there, but the very fact that writers approve the hostelries of England shows them to be men of iron nerves, or more probably persons who never sleep away from their quiet suburban homes.

The writer of these brief remarks, as a devotee of Dickens and also of pedestrianism and the cycle, is constantly benighted in country inns, and it is with the greatest unwillingness that he testifies against their noisy side, for he loves their immemorial associations. Still at times one must be just and outspoken. The diary of a recent night of almost complete insomnia at Winchester should be of some little interest to persons interested in social history in the year 1909

10.50 p.m.—To bed after a long cycle ride in the teeth of an obstinate north-easter.

11 p.m.—Settle down to sleep after reading a dull political novel.

12 p.m.—An infinitude of bells, clocks, and domestic carillons, enough to awake the Seven Sleepers, pervades the air for 15 minutes. The performance is charming, but unsuited to the midnight hour. Old Tom Paine, the bad, bold unbeliever of the French Revolutionary epoch, cursed bells in a curious pamphlet, and really in this matter he deserved well of nervous people with brains, who and the attainment of sleep no easy matter at any time.

12.30 p.m.—Enormously loud walk-round through all the passages of the honourable old hotel by 'Boots,' a young man whose feet are large and whose boot-soles are certainly more than an inch thick.

18.40.—The writer relights his candle and continues reading dull

12.60.—Ebullient good-byes at a back-door. 'Good-night' is yelled by a voice, 'See yer termorrer: Don't forgit,' &c., &c.

1.—A motor roars itself into action and there is general conversation by shrill voices.

1.30.—A fiend with boot-soles at least three inches thick proceeds slowly all over the hotel, slamming doors with vigour. The putting out of his boots is a cataclysm in the way of sound. If we had good light, a cup of tea, some biscuits, papers, pens, and a writing-desk, we would resume our versified translation of Propertius.

1.30.—Seven, yes, seven motors roar by, screaming like banshees

or playing half tunes.

2.—The "workers" come forth. They march by in boots of thickness indescribable. They may be hop-pickers. Immediately under the writer's window they roar greetings. "Ullo, Arree," a beast that must be quite familiar to all of them, is repeated again and again.

5.—Clocks, bells, and two howling dogs. We resume our novel and

begin to think of all the unpleasant things that in daylight we are able to disregard. Query: Does one 'look before and after' as clearly as one might in daylight?

3.15.—Creaking in all the passages.

4.- Early sparrow begins to thunder, for sparrows do thunder in the early morning.

4.30.—Passage of a motor-drawn caravan.

5.—General walk-out of gardeners, milkmen, and others, with loud bangs and clinks.

6.—Loud choruses from industrious people, who do not sympathise with stay-a-beds. Afterwards a short period of insensibility, broken by pungent nightmares.

8 o'clock.—Thundering knock at door. 'Will you 'ave fish for breakfast? We only 'ave kippers!' (We are only twenty miles from the sea and a fishing fleet. God have mercy upon us!)

But the above is no exaggeration. It is a twentieth experience at least. As a recent writer in a lay paper has pointed out, there is reason to believe that inns are living on their reputation, and that their standard of comfort is ancient. It is almost archaic; it is coeval with the days of the Vikings.

Whether noise is wholly evil in itself is another question. Gould of Philadelphia has suggested in a work upon the 'History of the House,' vermin must have had a selective influence in the Middle Ages, for the bites of fleas and pediculi must have tended to weed out the nervous and the delicate, who were driven thereby to madness and sometimes self-destruction. And thus the race was strengthened. A fortiori noise must have played an immense rôle in the Dark Ages in ridding society of weaklings, who fell victims to insomnia just as others did to the irritation of

"COLDS" AND CLOTHING.

"D.Sc., M.D.," writes that he is aged about 40 years and has always been very sensitive to changes of temperature. Living in the south of England he spends a considerable amount of time in the open air, particularly sailing, and finds in winter always, and often in summer when the day turns cold or wet, that on his return home he feels very cold, chilled throughout, has some huskiness of the voice or dry condition of the throat, and is very tired and languid. His temperature is then usually subnormal. After sitting over the fire and getting thoroughly warm he feels more comfortable, but nearly always has a restless night and feels cold all the next day. This sensation may pass off without any unpleasant sequel, but is sometimes followed by a temperature of 1078 Exerct threat, headaghe achieve in light and general. perature of 103° F., sore-throat, headache, aching in limbs, and general prostration lasting three or four days, very like an attack of so-called influenza. A night call is nearly always followed by the same languor, chilly feeling, and general malaise the next day. Walking, cycling, or other exercise in the open air when the weather is cold or damp is followed by similar symptoms, and he has taken to sailing in order to get fresh air without exertion. He would like to have suggestions as regards cause, prevention, treatment, and clothing. As there has been a tendency recently to decry woollen and to praise linen and cotton underwear he would be glad to have opinions on this subject.

Pharmacy.-We are in accord with much which our correspondent writes, and, indeed, more than one of his sentiments have been at different times freely expressed in our columns. It is the educational course of the student which is largely to blame. Very few students are taught the art of prescribing in any systematic manner. consequently experience very real convenience from the use of such ooks.

Medical Diary for the ensuing **Week.**

ROYAL SOCIETY OF MEDICINE, 20, Hansver-square, W.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION (Hon. Secretaries—J. Gray Duncanson, H. Charles Cameron): at 4.30 p.m.

On the Teaching of Therapeutics in the Hospital Wards.
The Discussion will be opened by Sir Clifford Allbutt.
Prof. W. Osler, Dr. Harrington Sainsbury, Dr. J. Calvert,
Dr. Robert Hutchison, and Prof. W. B. Dixon will take part in

Any Fellows or Members desiring to speak will kindly send their names to Dr. Gray Duncanson, Wingfield House, Shooter's Hill, S.E.

CLINICAL SECTION (Hon. Secretaries: H. D. Rolleston, M.D., Albert Carless, M.S.): at 8 P.M.

Dr. Rolleston: Pigmentation of the Mouth in a Case of Grave

Anemia.
Mr. Albert Carless: Excision of both Superior Maxilles.
Mr. James Sherren: Meckel's Diverticulum with Contained
Calculus.

Dr. Finsi and Dr. Ernest Shaw: Carcinoma Mamme treated by Radium (further report).
(And other Cases not yet notified.)

Demonstration:

Bayley: Demonstration of the Treponema Palikium in Syphilitic Lesions; of the Spirocheta Dentium in Caricas Dentine; and of the Spirocheta Refringens in Balanitis.

Papers:
Sir Dyce Duckworth: (1) A Case of Gout with Tophaceous
Deposits in Mahommedan, with photographs; (2) A Case of
Gout with Uratic Tophi in a boy, aged 14.
Dr. Herringham: Two Cases of Pneumonia with considerable
Displacement of the Heart simulating Pleural Effusion.

N.B.—Fellows of the Society are entitled to attend and to speak at all Meetings.

lectures, addresses, demonstrations, &c. MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22,

INDICAL GRADUATES
Chemice-street, W.C.
Monday.—4 p.M., Dr. C. Fox: Clinique (Shin). 5.15 p.m.
Lecture:—Prof. J. H. Nicoll (Glasgow): The Treatment of Senile Enlargement of the Protate.

Dr. J. E. Squire: Clinique (Medical). 5.15 p.m.

Tuesday.—4 p.m., Dr. J. E. Squire: Clinique (Medical). 5.15 p.m., Lecture:—Dr. J. Donelan: Suppuration in the Accessory Cavities of the Nose.

Wednesday.—4 P.M., Mr. M. White: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. M. Yearsley; The Nose and Rar in School Medical Inspection.

THURSDAY.—4 P.M., Sir Jonathan Hutchinson: Clinique (Surgical).
515 P.M., Lecture:—Mr. J. Clarke: A Series of Abdeminal

FRIDAY.-4 P.M., Mr. S. Stephenson: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-

Monday.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards.
 2 P.M., Medical and Surgical Clinics.
 X Rays.
 Mr. Dunn: Diseases of the Eyes.
 2.30 P.M., Operations.
 TUESDAY.—10 A.M., Dr. Moullin: Gynecological Operations.
 12.15 P.M., Lecture:—Dr. Pritohard: Practical Medicine.
 2 P.M., Medical and Surgical Clinics.
 X Rays.
 Dr. Davis: Diseases of the Throat, Nose, and Ear.
 2.30 P.M., Operations.
 Dr. Abraham: Diseases of the Skin.
 5 P.M., Lecture:—Dr. Saunders: Clinical Examination of Severe Cases of Gastric Disorder.

Disorder.

Wednesday.—10 a.m., Dr. Saunders: Diseases of Children.
Dr. Davis: Diseases of the Throat, Nose, and Har. 12.15 p.m.,
Lecture:—Dr. G. Stewart: Practical Medicine. 2 p.m., Medical
and Surgical Clinics. X Rays. Mr. B. Harman: Diseases of
the Eyes. 2.30 p.m., Operations. Dr. D. Robinson: Diseases of
Women. 5 p.m., Lecture:—Dr. Beddard: Medicine.

Thursday.—10 a.m., Lecture:—Surgical Registrar: Demonstration
of Cases in Wards. 12 noon, Pathological Demonstration:—
Dr. Bernstein. 2 p.m., Medical and Surgical Clinics. X Rays.
Mr. Dunn: Diseases of the Eyes. 2.30 p.m., Operations.

Friday.—10 a.m., Dr. Moullin: Gynæcological Operations. 2 p.m.,
Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of
the Throat, Nose, and Kar. 2.30 p.m., Operations. Dr. Abraham:
Diseases of the Skin.

Saturday.—10 a.m., Dr. Saunders: Diseases of Children. Mr. B.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Mr. B. Harman: Diseases of the Eyes. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinica. X Rays. 2.30 P.M., Operations. Dr. D. Robinson: Diseases of Women.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

Inspiral, Greenwich.
 MONDAY.-2 P.M., Operations.
 2.15 P.M., Mr. Turner: Surgery.
 4 P.M., Mr. R. Lake: Bar and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical.
 12 noon. Bar and Throat.
 TUESDAY.-2 P.M., Operations.
 2.15 P.M., Dr. R. Wells: Medictine.
 3.15 P.M., Mr. Carless: Surgery.
 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical.
 12 noon, Skin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor:
Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient
Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.
THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. SaleBarker: Radiography. Out-patient Demonstrations:—10 A.M.,
Surgical and Medical. 12 noon. Bar and Throat.

KRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford:
Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient
Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—
10 A.M., Surgical and Medical. 11 A.M., Eye.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

THURSDAY.—4 P.M., Mr. J. Bland Sutton: Hernia of the Uterus in Men and Women. (Opening Lecture.)

OPERATIONS.

METROPOLITAN HOSPITALS.

MMTROPOLITAN HOSPITALS.

**Thomas's (3.30 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynseological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopsedic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Ohlidren, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.).

R. P.M.), Guy's (1.30 P.M.), Ohldren, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), West-minster (2 P.M.), West-London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), University College 2 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M.), Annaritan (9.30 A.M.), Samaritan (9.30 A.M.), Cancer (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Bar (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Har (Minor, 9 A.M., Major, 2 P.M.), Central London Throat and Har (Minor, 9 A.M., Major, 2 P.M.), Central London Throat and Har (Minor, 9 A.M., Major, 2 P.M.), Central Condon Throat and Har (Minor, 9 A.M., Major, 2 P.M.), NEDNESDAY (8th).—St. Bartholomew's (1.30 P.M.), Linaring Cross (3 P.M.), St. Thomas's (2 P.M.), Middlesex (1.30 P.M.), Linaring Cross (3 P.M.), St. George's (0phthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopsedic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Cormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), Mest London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), St. Thomas's (2 P.M.), St. Mary and St. Mary and St. Major, 2 P.M.), St. Thomas's (2 P.M.), St. Mary and St. Major, 2 P.M.), St. Major, 2 P.M

Throat and Sar (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (7th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.39 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middleest (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), Motth-West London (2 P.M.), Gt. Northern Central (Gynscological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopsedic (9 A.M.), Royal Bar (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynscological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

(Minor, (9 A.M., Major, 2 P.M.).

PRIDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopadic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor 9 A.M., Major, 2 P.M.).

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THE LANCET Office, Sept. 30th, 1909.

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An Address

SOME THOUGHTS ON CAUSATION IN HEALTH AND DISEASE.

Delivered at the Opening Coremony of the Family of Medicine in the University of Leeds on Oct. 1st, 1909,

By THE RIGHT HON. LORD JUSTICE FLETCHER MOULTON, P.C., F.R.S.

LADIES AND GENTLEMEN,—I am fully sensible of the honour which your faculty has done to me in asking me to give the address to you at the commencement of your university session. But the honour has its difficulties. I know well the value of special study in any branch of science and how presumptuous it is for those who have not trodden that toilsome path to venture to speak before those who have. But this must have been equally well known to those who chose me for the task, and they must have believed that nevertheless a layman like myself might find some subject bearing on your studies upon which he might with propriety ask your attention for a short time, and I am bound to accept their view.

There is one characteristic of curative science which justifies the expectation that all who are capable of understanding scientific reasoning will have given some attention to it. It is that we are interested in its results as deeply as you are. It is true that we are not qualified to rank ourselves among the combatants, but the prize that is being fought for is our own health and our own lives as much as yours, and it is no wonder, therefore, that the movements on the field are scanned with the closest attention by us though we are only spectators. And it is less difficult for me to find some common ground on which I can speak to you because the period of my thinking life has been nearly co-extensive with the remarkable enlargement of our field of knowledge which followed the discoveries of Pasteur-discoveries which revolutionised our conceptions as to the causation of disease. The aid of experiment has been called in to an unprecedented extent to solve riddles which formerly would have been thought to belong solely to the domain of clinical observation and its attendant empiricism. The work that experimental science has thus done is of such a nature that it can to some extent be appreciated even by those whose training in science has been of a general rather than of a special character.

I can claim for myself to have been a close observer of these advances in science from the time when at college I first read the lectures of Lord Lister on the then novel application of antiseptics to surgery. In following these discoveries I have striven to realise to myself the world of minute life which they reveal, the working of the laws which govern it and its influence on health and disease, and I have thought that I can best occupy your time if I put before you the picture which has thus been formed in my own mind of the interaction between ourselves and this other world by which we now know ourselves to be surrounded. By so doing I am freed from the danger of appearing to try to teach those who know so much more than I or to ape an authority which I do not possess. I shall only aim at showing you how these great discoveries, which will always make our age famous, shape themselves to the mind of a humble looker-on, and if I had to put a descriptive heading to this address I should plagiarise from Robert Browning and entitle it, "How it strikes a Contemporary."

In reviewing the forty or fifty years that have elapsed

In reviewing the forty or fifty years that have elapsed since the birth of the new conception of the nature and causation of infective disease I mentally divide it into two epochs, in the first of which scientific thought concerned itself mainly with the attack of these our unseen enemies, and in the second with the defence. This division is necessarily a rough one and much overlapping must be admitted. The new knowledge early showed that it brought with it new power, and some of its most brilliant practical applications belong to the first period. On the other hand, our knowledge of the organisms that attack us is still being added to, and much yet remains to be done in this field. Nevertheless, the No. 4493.

division into the two periods is not unscientific, and it is useful in clearing our ideas. The ascertainment and the comprehension of nature's defence against micro-organisms came long subsequently to the discovery that to their action were due the numerous infective diseases to which men and animals are subject.

I do not propose to dwell at any length on the events of the first period, which must be well known to you all. It began when the classical experiments upon anthrax demonstrated that this fatal disease was due solely to the presence of a definite micro-organism. A like demonstration rapidly followed in the case of chicken cholera. But these and other subsequent demonstrations had consequences extending far beyond the instances to which they particularly related. The scientific world recognised that for the first time infective diseases had been traced to their true causes. Up to that time the causation of such diseases had been the subject of conjecture and hypothesis only. Doctors and chemists had talked learnedly of such and such a disease being due to a particular virus, the existence of which was assumed, not proved. But now one infective disease after another had been tracked experimentally to its cause, and in each case that cause had been found to be the invasion of a specific micro-organism. In the presence of such demonstrations conjectural hypotheses could no longer stand. The onus probandi was rightly held to be changed, and in the absence of proof to the contrary infective diseases were taken to be due to the presence of such organisms. All reflection as to the characteristic phenomena of infectious diseases confirmed this view. The circumstances under which infection ordinarily takes place are such that they preclude the idea of anything but a microscopically small quantity of matter being transferred—an amount so small that any physical or chemical effect of the transferred matter must be negligible -and yet in the resulting disease not only are the disturbances of the whole organism most formidable but the actual amount of infective matter generated must to all appearance be illimitably greater than that which originally caused it. All this is so strikingly in harmony with the almost infinite powers of self-multiplication of microorganisms that when the mind has become familiarised with the idea that micro-organisms and infectious diseases may stand in the relation of cause and effect, it becomes difficult to imagine that the cause of such diseases can be of any other nature. One instinctively thinks of living germs as the cause of all infective disease. And this instinct has not proved misleading. Gradually the list of infectious diseases. that can actually be traced to specific micro-organisms has swelled and in it are now found many of the most serious that afflict mankind, and no one doubts that it is only due to our imperfect methods of investigation that the list does not include all.

A curious extension of our knowledge has resulted. Although, no doubt, the original impulse to the study of the causation of disease by micro-organisms was given by the case of infectious diseases, it has turned out that such diseases by no means furnish the sole or even the most remarkable instances of such causation. No one would have called scrofula an infectious disease, and few would even have applied the term to its companion phthisis, yet they are now known to be due to micro-organisms, and probably the same may be said of other diseases of the respiratory system. realise now that although infectiousness implies that the disease is due to living germs the converse is by no means necessarily the case. In truth, infectiousness is an accidental consequence, due to the infected organism giving off contaminated matter in some form in which it is likely to be transferred to other organisms. In many cases, such as small-pox and influenza, we are wholly ignorant of the way in which this transference is effected, but no one doubts that it occurs. But if the infected organism has no tendency to give off infected matter, or only gives it off in some form not leading to such transference (as, for instance, in furunculosis or localised tuberculosis), there is no reason why the disease should be infectious. Hence it is impossible as yet to tell how widely the microbic origin of disease extends. It may well be that some constitutional diseases as yet unsuspected may ultimately prove to be due to micro-organisms that have established themselves in the system and give evidence of their existence only by the mischief which they work. Nor does this exhaust the evil wrought by our minute foes.

Many kinds of micro-organisms become permanent residents with us—kept under in normal health but ready to multiply and become dangerous as the sequelæ of disturbances such as those produced by a serious illness of almost any type. In short, such organisms may claim to be wholly or partially the cause of most morbid conditions of the system, and it is no exaggeration to say that the discovery of means of successfully combating them merits to be regarded as the greatest problem of curative science and one of unrivalled importance to the world at large. I shall now consider what the new knowledge has taught us as to our defence against these ever-active enemies.

To understand and appreciate this aright one must first get a clear idea of what is to be defended and how it is situate. The human organism, like to that of all the higher animals, must be regarded as being composed of cells of varied structure, arranged no doubt in groupings essential to their functional activity, but nevertheless possessing each its individual life with all its necessities. Each cell must receive due nourishment and must be protected from influences injurious to its individual vitality if it is to continue its effective life. This is, of course, true of all living cells, however independent their existence may be. But a cell in a complicated organism differs in two main characteristics from those that live a wholly independent life and who represent doubtless its remote ancestors. In the first place by changes both in structure and function it has lost the power of "fending for itself." It has not only lost the power of locomotion, but it has lost in most cases entirely, in all cases to a great degree, the powers of seeking and capturing its prey which exist even in the most primitive forms of life. On the other hand, it has acquired in a high degree certain capacities of a kind that would be useless to the independent cell in its struggle for existence, but which are essential to the captive cell if it is to perform its special function in the organism of which it is a constituent. In a word, the cell has become highly specialised at the cost of word, the cent has become nightly specialised at the cost of its general capabilities. It presents an example of the last stage of the process which Haeckel termed "the Division of Labour in Nature." Like to the members of a civilised com-munity each cell does some special work and becomes adapted to do that work and only that work well.

But if Nature in building up sentient beings endowed with their wonderful capacities is to have the advantage of these highly specialised cells, she must be content to take the responsibilities they bring with them. Those that she uses for her purposes are, indeed, far removed from the simple ancestral forms that seem to find means of existence everywhere. It is not to be wondered at if for the mechanism of the sense-organs, and still more of the brain, of a vertebrate, cells must be so highly specialised that all their vitality seems concentrated in the power to respond to some one particular stimulus or to manifest some one particular reaction. But in proportion to this concentration on their special work comes the need that all their wants should be catered for by the organisms as a whole. This implies not only the provision of the precise nourishment which they require, but the protection from all that would be hurtful. With the high specialisation has come increased delicacy. You have made your flowers more splendid by making them hot-house plants. You must now shelter them from every breath of the cold wind outside.

To maintain unchanged the environment of these delicate cells is Nature's task and she performs it wondrously. The body as we see it is like to a fortified city: it shows only the outer ramparts which nature uses to protect the community within from disturbance coming from withoutthe first line of her defensive works. If we look within we find further provision for excluding interference with the life of the individual cell. Each cell is in a world of its own cut off from the external world. Penned up amongst its fellows its real environment is represented by the bloodstream which circulates all around. This is to it the external world in which it lives and works and from which must be satisfied all its needs. The blood brings to it its food and the oxygen necessary for its work, and removes directly the main combustion products and indirectly all the products which result from its activity. The blood is therefore the environment which Nature must keep constant that the existence of these highly specialised cells may be preserved. Consequently we find in the body manifold adjustments to maintain the blood uniform in quantity,

temperature, pressure, gaseous contents and fluidity, and though its composition is such that it defies rigorous analysis we can see enough to know that within certain limits it alsois uniform. Indeed, so limited are the specialised powers of the cell that it is more than probable that it would be incapable of feeding itself from any other medium than one just so composed.

But these delicate cells are not all specialised in the same way. They differ widely in structure and function, and thisvariety of specialisation necessitates a corresponding variety of provision for their individual needs. Daily the complexity of composition of the blood stream is becoming more manifest. Everyone remembers the astonishment and delight with which the discovery of the cure for myxcedema was hailed. What did it tell us? It showed that for some groups of cells necessary for the proper working of the organism as a whole a special food of definite chemical composition must be provided; that if this food was not presentthe body became diseased; that in the healthy body thisfood was elaborated in the thyroid gland, but that if that gland was incapable of performing its work the food might be brought from without and the cells that needed it would be equally satisfied with the provision so made. How many other such special foods for special types of cells there may be in the blood we cannot guess, but already the morbid developments which follow on injury to apparently useless organs warn us against viewing the thyroid gland as an exceptional case. And after all such marked and discrete essentials are only simple features of the blood stream. The modern discoveries to which I shall presently refer testify to. and give us glimpses of, an almost infinite complexity far beyond the mere presence of such well-defined components.

It is in this the true environment of the cells of which the body is composed that we must study both the attack and the defence in the war with micro-organisms if we would understand them aright. For not only is the blood the very life of the organism by reason of the all-important services that it must perform, but it supplies the means of complete intercommunication. Once get access to the blood stream and the way is open to every cell. To recur to the metaphor of the fortified city, the blood channels are the streets which lead to each house. And the metaphor is still more apt in this case because, as in the case of a city, these channels must be kept free and open by reason of the necessities of the citizens themselves—that is to say, of the cells. Their own nourishment and life depend on the existence of a free circulation, and, whether there be enemies within the streets or not, they cannot close them except at the cost of the death of the secluded part. In this the blood circulation differs from the secondary and more sluggish lymph circulation where nature seems able to set up barricades in the form of glands to arrest and partially cut off intercommunication. The blood stream must be kept free both to friends and to such foes as have passed the outer defences and gained access to it. And it would seem that a micro-organism that has won its way to the blood stream must find surroundings almost ideally fitted for its growth. Experience has taught us how numerous are the types of microbes that actually thrive on the blood fluids, and the well-known adaptiveness of micro-organisms in general makes us feel that but for some hidden cause the rich nourishment that is on its way to feed the specialised cells of the body would be an admirable nidus for them and suffice for almost infinite multiplication. What can be found to check such invasions?
Those who study Nature as did our great poet,

"considering everywhere Her secret meaning in her deeds,"

and who would measure the probable consequences of such an invasion by the precautions that nature takes to prevent it, must find abundant evidence that she regards it as a grave danger. The skin, her first line of defence, is soelaborately constructed and so efficient that though microbes swarm around and even upon us they rarely effect an entrance while the skin is healthy. How successful is this defence is shown by the difference it used to make in surgery whether in an accident the skin was broken or not, and the gratitude that we rightly feel for the triumphs of the antiseptic and aseptic methods is a confession of the importance of the defence of the skin for which these methods provide valuable though imperfect substitutes. If by a wound this defence is broken down the blood pours out to form a clot and thus, if possible, to protect the exposed surfaces. Should microbes

succeed in passing through the skin Nature is active in her efforts to minimise the evil and restrict its area. She seeks by inflammatory processes to prevent communication with the general circulation—building a rough but efficient wall which she can defend more or less well and through which she can and does pour her defending forces. In all this she acts as does the commander of a beleaguered fortress when a practicable breach is made in his walls. He builds a rough barricade behind the breach so as to keep the foe from penetrating into the town even at the cost of abandoning for a time a part of his territory and leaving it more or less completely in the enemies' hands. Thus we see colonies of microbes which are capable of producing a general infection, such as anthrax or streptococcus, successfully localised and kept outside the general circulation by such means.

But there are, and must be, weak spots in these defences. Like every beleaguered fortress, the body must be provisioned from time to time, and in this case it must also be constantly provided with oxygen. It is the portals at which air and food are taken in which are so difficult to defend, and it is through them that lodgments are generally made. But whether they be effected thus or otherwise, it is inevitable that from time to time invasions must take place which achieve either partial or complete access to the blood stream, and in dealing with disease it is these that we have to consider. In other words, the body must be looked upon as a fortress whose external defences against micro-organisms cannot be trusted and are not in themselves sufficient to protect the environment of the cells of the body.

Let me now turn for a moment to an apparently different class of case. You see a ship that has come safely through a stormy voyage. You know that the waves must have buffeted her, that she must have been rolled from side to side and yet she has emerged safely. You say that this is due to her stability. Yet she is not stable if stability means that she can defy the forces that bear on her to move her from her normal upright position, for you know that the alightest roll of the sea or even the slightest puff of wind will make her heel over. She is stable because when made to lean over there is thereby generated a system of forces tending to return her to her place—called, I believe, by naval architects the "righting couple"—which grows greater the greater is the displacement and thus ultimately becomes sufficient to overpower the disturbing forces. Unless this be present the ship must inevitably capsize when made to lean over, and as you are sure that in the storms with which she has met she must again and again have been rolled about by wind or waves, and as you see that she has arrived safely you know that her construction must be such that disturbances tend to right themselves. A like conclusion forces itself upon us when we think of a living organism which throughout its whole life has been exposed to attacks from the micro-organisms that surround it, some of which attacks must inevitably have led to successful lodgments of the enemy within the organism. Could it have survived-Nay, in this case, remembering that the organism is itself the offspring of a long line of development through individuals who have lived their lives and continued their race, we may ask the question of ourselves in the still more striking form-Could the organism ever have existed had not these attacks in some way or other operated to bring into existence the necessary forces of defence?

To bring the metaphor home, let me take a severe but not fatal case of an infectious disease, such, for instance, as The original infection is minute, and the typhoid fever. body into which it is conveyed is healthy, yet the microbe increases beyond all power of calculation and assailing the vital functions of the body brings the patient to the verge of the grave. At that moment when his strength is at its lowest, when his vital powers are well-nigh exhausted, when probably each microbe of the original infective matter is represented by countless millions of equally virulent microbes as capable of infecting a healthy man as were the original invaders—at the moment, in short, when the invaders' strength is so high and that of the organism is so low the tide of battle turns and the enfeebled body repels an enemy immeasurably more strong than that which the healthy body failed to keep in check. Some righting force, some powerful influence tending to bring back the organism to its normal state must have been developed during and by the sickness which makes the sick man triumph where the healthy man could not resist. Like to the ship in the storm the "righting couple" which draws it back, springs from the danger itself and proves itself to be strongest when the storm apparently is doing its worst.

While the phenomenon of recovery from a disease caused by an invasion of microbes capable of limitless multiplication points with certainty to the generation of some such righting force there is another phenomenon equally familiar to us which ought to have taught us an equally valuable lesson. Take the case of a man who has just recovered from an infectious disease. He may be in the company of convalescents like himself who would probably be dangerous centres of infection to a man who had not had the disease. But no one expects him to take it. Experience has taught us that for a time there is no fresh susceptibility. The extent of this so-called immunity varies within the widest limits from a long and often life-long protection in the case of small-pox to a short and uncertain one in influenza. sometimes fails, as in the case of relapses, but on the whole it is the ordinary accompaniment of recovery from such diseases. It shows that the effects of the righting force last after it has done its primary work of restoring the organism to its normal condition.

It was in the direction of this immunity that the first practical application of the new knowledge was made. Pasteur, anxious to protect sheep from the deadly anthrax, and having found out a method of producing an attenuated strain of the microbe, hit on the idea of inoculating sheep with this weaker form of anthrax microbe. It gave the sheep a mild attack from which they recovered naturally. This left a state which, though they could not wholly resist a virulent inoculation, enabled them to bear such an inoculation without serious disturbance, and thereafter they were found to be immune for a considerable time. They might be put among an infected flock or even inoculated with virulent anthrax

without taking the disease.

Although the novelty and wide practical outlook of this discovery excited universal interest, it led to little speculation as to the modus operandi of the process. regarded, I think, both by Pasteur and the world at large, as being merely a case of putting the animal in the position of having had the disease, and the brilliancy of the discovery was considered to consist in that it taught us to do this without endangering the life of the animal. Few asked them-selves how it was that an animal was less likely to get the disease because it had recently had it. This was so wellknown a phenomenon that it was accepted as natural without further inquiry. The explanations that passed current among those that happened to think about it were either that the microbes exhausted the nourishment to be derived from the blood or that they fouled their habitat by their own products. In either case it would follow that the blood would be left in a condition in which it could not support that form of life, and the period of immunity was supposed to measure the time which the blood required to return to its normal state. Neither of these conjectures was supported by experiment, and both had soon to disappear in the presence of further knowledge.

The insufficiency of such explanations is made manifest when we consider the remarkable discoveries relating to diphtheria, which, to my mind, inaugurate the next stage in the advance of our knowledge. It was found that inoculation of the serum of the blood of an animal that had recovered from diphtheria would enable an animal to support an inoculation of diphtheria itself that would otherwise have proved fatal. If we had to choose between the two hypotheses that I have mentioned such a result must make us reject the suggestion that immunity is due to the exhaustion of the nutriment in the blood, but it might be held to support the rival theory. But it was established that the diphtheria microbe works not by spreading throughout the organism but by producing from comparatively localised colonies an intensely powerful poison (or toxin, as this class of poisons is now termed), and the disease we know as diphtheria is the result of this chemical substance, and can be produced by injections of it without the intermediation or presence in the body of any microbes. It was also shown that the protective serum of which I have spoken is produced when this poison is injected into animals in non-fatal doses and is now universally obtained in this way. It is not necessary that they should have been infected with diphtheria microbes. The injection of the poison is equally followed by the production of the protective serum.

I need not tell you of the practical importance of this discovery. But its theoretical importance is equally remarkable. The serum so produced protects animals against the consequences of injections of the toxin which originally caused it to be produced. In other words, it contains some substance which is an antidote to that toxin. So absolutely is this the case that it is found that when the toxin and the serum are mixed in proper proportions the mixture is a harmless neutral fluid that can be injected without producing any toxic effects. And remember that this antidote was generated upon the injection of the poison. It did not exist previously in the blood. It was Nature's response to the attack. The attack consisted in introducing into the animal from which the serum was obtained a dose of a certain poison—a poison no doubt of a complex proteid type, but none the less a definite chemical poison—and to this the organism responded by generating its antidote. We have here no intermediate and undetermined action of living microbes. No doubt in past ages such an attack must have been made by diphtheria microbes which would have generated their poison and set it free to work its mischief. But in the production of serum the action of the microbes is eliminated altogether, and it is found that the mere presence of the poison leads to the generation of an antidote which, if generated quickly enough and copiously enough, nullifies the poison entirely. The immunity that he enjoys shows that this is the case in the horse. In man the large mortality in diphtheritic cases shows that if the attack is a bad one the response may not be adequate in amount, or-which is more probable-that it comes so slowly that the poison has had time to do fatal damage before the antidote arrives. By the serum treatment supplies of the antidote are brought from without which protect the system until the attack is over or until the organism is in a position adequately to defend itself.

I shall never forget the impression made upon me when years ago I first realised the meaning of this mode of generation of diphtheritic antitoxin. It seemed to open up a new world of vital activities to find that on the injection of a poison a chemical substance capable of neutralising the injected poison and that alone should thus be naturally produced. For that which is generated is not of the nature of general protection. It is specific. It is an antidote to that particular toxin and to no other. I was used to such vague phrases as "rousing the resisting powers of the system" and the like, and it would not, I think, have astonished me had it been shown that such poisons stimulated elimination or some other defensive action of the organism. But I was not prepared to find that Nature, like a skilled boxer, hit straight back at its assailant and at him alone. This lesson has often been repeated since. I do not allude merely to the case of tetanus, in which are repeated the phenomena which I have described in relation to diphtheria, but to the investigations which show that when a foreign proteid substance is introduced into the blood an antibody is normally formed therein which has a special effect on it and it alone, usually in the direction of neutralising it. Thus by repeated small injections of snake poison you can get a serum that has the properties of an antidote to that particular venom. The instances of this strange phenomenon are so varied that they point to the existence of a general law in the case at all events of the higher animals, although, of course, we do not as yet know the conditions and limitations of its action so as to be able to formulate it with exactness. That it has become a general law seems to be supported by our finding that it is followed in cases in which we can see no possibility of its having ever been serviceable in the struggle for existence. Thus the blood of one kind of animal has generally no dissolving powers on the red blood corpuscles of another kind. But if the former animal be subjected to inoculations of blood from the latter its blood gradually acquires a power of dissolving those corpuscles. Its behaviour will not be changed towards red blood corpuscles in general, but only towards those coming from the kind of animal from which the inoculations were taken or some animal closely related to it.

Let me pause here a moment to consider how far we have got in our subject. We have found that in the cases of which I have spoken there is a true righting force. The poison that is introduced starts the manufacture of its antidote. The organ is protected by that which springs into existence on the attack. And the most characteristic feature of these

phenomena is that the remedy is specific—it avails against the poison which creates the need for it and against no other.

It would seem as though we had wandered somewhat from the subject of micro-organisms in dwelling thus upon the action of the organism towards proteid poisons. But the digression is in appearance only. Not only are microbes the chief means by which such poisons are introduced into the system, but, conversely, there are few microbes which when they have gained an entrance into the system do not generate toxins to the direct action of which much, if not all, of the mischief must be ascribed. In some cases, as, for instance, in diphtheria, the microbes do not seem to be too numerous or too widely distributed in the body to be dealt with by natural processes to which I shall presently refer and the danger wholly consists in the quantity and virulence of the poison which they generate before they can be overmastered. I liken such microbes in my own mind to invaders who promptly start conflagrations. They may be a mere handful in number, incapable of effective resistance to the forces that will be brought against them, but the conflagrations they have started must be put out or there will be no city to save. This is the sole service which the antitoxin renders. I can see no ground for thinking that it affects the microbes themselves; indeed, they can readily be cultivated in it. If they are got rid of it must be by other agencies. It is to these agencies that I wish now to direct your attention—the agencies that get rid of the invaders themselves. In other words, What is the nature of the righting force which gives the necessary stability to the organism in the face of an invasion of living microbes and restores it to its normal condition?

I have already referred to the experiments of Pasteur by which he gave to sheep protection from anthrax by inoculating them with cultures of living anthrax of graduated Our knowledge of the nature and origin of this "righting force" starts with the discovery that in certain cases—such, for example, as typhoid fever—an analogous protection can be obtained by inoculations of dead cultures of the corresponding bacilli. The change seems at first sight to be but small, yet in reality it is of vast importance both practically and theoretically. In practice it makes it possible to give substantial immunity to the individual without requiring him to undergo an actual attack of typhoid fever with all its attendant risks to himself and others. But it also teaches us much as to the nature and causes of immunity in that it shows that the introduction of dead microbes into the body is sufficient of itself to bring about changes which for a longer or shorter time prevent the living microbe from making good its footing there. This cannot be due to any exhaustion of nutritive material, because the inoculated microbes are dead, nor to pollution by microbic products to such an extent as to render the body incapable of supporting that form of microbic life, because the total amount of the inoculations represents but a small fraction of the quantity of microbes that must be present in an actual attack of the disease. No such simple application of the laws that limit the multiplication of microbic life suffices to explain the phenomenon. It forces us to realise that we are here in the presence of some reaction of the organism which results in rendering it in the future an unsuitable habitat for that particular microbe.

We turn to the blood-stream as the natural, and perhaps only possible, seat of such a defensive action. The determination of the changes effected in it is facilitated by the fact that with proper precautions a sample of the fluid portion of the blood can be drawn off and kept for a time without substantially affecting its properties. To this can be added living microbes in any desired numbers, and thus the effect of the blood of an immunised animal can be directly observed and compared with that of a nonimmunised animal. It is thus found that the blood may become hostile to the microbe in more than one way. In the first place it may become directly poisonous to it. This property may be present to some extent in normal blood as in the case of the typhoid bacillus, but even in that case it is largely increased in the immunised person. It is obviously due to the production in the blood of some substances which combine with the body of the bacterium because the destructive action can be removed by adding to the fluid a sufficient quantity of bacteris-living or deadwhen it becomes capable of supporting living bacteria in the

ordinary way. Let me call your attention to the lesson this teaches us. The direct effect of the introduction of bacteria into blood is therefore to lessen any bactericidal power it possesses by using up pro tanto the bactericidal substance. On the other hand, introducing them into the blood while within the organism causes a generation of this substance, and a large increase of the bactericidal power of the whole of its blood. You see how this points to our having here to deal with a true righting force—one called into existence by the disturbance, yet contrary in its effect and acting to undo that which caused it.

A second way in which the blood becomes inhospitable to bacteria is that without directly killing them off it renders them helpless and inactive by agglutinating them together This also must be due to the generation of some in clumps. substances in the blood which appear to obey much the same laws as the bactericidal substances of which I have just spoken, and I should not have expressly referred to it were it not that it furnishes us with a striking proof that these substances are present and take a real part in the defence of the organism in actual disease. Everyone knows how insidious is an attack of typhoid fever-how it is characterised by the absence of all marked symptoms if we except variations of temperature. A sure method of diagnosing it in its early stages was sorely needed and one has been found.

A small quantity of the fluid part of the patient's blood is drawn off in a suitable tube and some living typhoid bacilli are added to it. If they agglutinate, the patient is suffering from typhoid fever. Nature has begun to generate the defensive substances against that bacillus which she would not have done had she not been first invaded by it. You learn of the attack by finding that the defence has begun, just as the inhabitants of a beleaguered fortress might first learn of an assault by hearing the sound of their own guns opening fire on the assailants.

I see no reason for doubting that both these types of defence have in the past been useful and perhaps indispensable in protecting the organism throughout its evolution. But it is almost impossible to estimate the extent of the service they render. They act automatically and get used up in so doing. No doubt they kill or incapacitate vast numbers of microbes and any progress the disease makes is due only to those that escape them. But the extent of the service they render remains unascertainable because there are no means of determining what would have been the condition of things if they had not been at work. But there is a third type of defence to which this does not apply and which—so far as I can judge from the evidence—has a far higher claim on our attention not only by reason of its universality and efficiency as used by Nature but because it is such that we can avail ourselves of its remedial power in the practical treatment of disease. To deal with it adequately I must say a few words more as to the constitution of the blood stream. We all know that the blood is not merely a fluid. It contains organisms in enormous numbers—viz., the red and white corpuscles. With the former we have nothing to do to-day. The latter, which number in man about 8000 in a cubic millimetre, are many times the size of any micro-organism with which we are dealing, but nevertheless by their power of altering their shape by elongating themselves they are able to pass freely about among the tissues of the body in every direction, not only in the blood stream but after leaving it. These corpuscles, though produced and living in the body and essential to its existence, enjoy in a sense independent life, and doubtless obey laws such as govern other life of the same amœboid character. We may expect them also to possess inherited tendencies derived from and suited to the habitat in which they live and in which their precursors must have lived throughout the ages that have elapsed since the organism first came into existence. Long-continued observation distributed over a very wide range of different forms of life has during the last 30 years established the fact that these white corpuscles form a sort of police of the body whose business it is to arrest foreign bodies that make their entrance, and either to prevent their gaining access into the blood or to remove them from it. On the introduction of foreign bodies-say, bacteria-into the body of an animal there usually ensues a flow of lymph to the spot which is quickly followed by an incursion of large numbers of these white blood corpuscles which seize upon and ingest the bacteria, and ultimately digest them, though slowly. If the number or avidity of these corpuscles is normally support the testimony of the opsonic index-

sufficient the infection is suppressed, but if from the number of the bacteria inoculated or the rapidity of their multiplication they are too much for the white blood corpuscles they establish their footing, and an infection ensues which may remain local or may become general according to the circumstances of the case and the nature of the bacteria. I need not, I think, apologise for thus briefly referring to these facts which must be familiar to most of you because I wish them to be before your minds while we deal with this part of the subject. They obviously explain how it is that we and other animals are immune to attacks of many kinds of bacteria which in themselves are fully capable of producing disease. It is not that the blood is unsuited to nourish them, for some of them will multiply rapidly when its serum is used as the cultivating medium. But if the white blood corpuscles are more than a match for them they can gain no footing in the body. Let me give an example. The frog succumbs rapidly to even small doses of the toxin generated by the cholera microbe. Yet it is immune to inoculations of those microbes because the zest and vigour with which its blood corpuscles attack them is such that they are devoured before they have time to generate the fatal toxin.

But the problem with which we have to deal is microbic disease, and the word disease implies that the microbes have been at the outset too strong for the defence and have secured a lodgment. What effect has this on the action of the white blood corpuscles? Countless experiments have established that its normal consequence is to increase the avidity with which each corpuscle attacks and devours that particular microbe while it produces no change in its behaviour to other microbes. But the strangest part of the story is that this is due to no change in the corpuscles themselves. Transferred to the serum of a normal man they show no such predilection for these special micro-organisms. change is in the fluid part of the blood in which they move and live and if white blood corpuscles be brought from a normal man into that same fluid they will show the same greed. It is the flavouring that effects it—their appetite for the microbes is increased because of the presence of the changed serum, just as the appetite of a small child for bread and butter is vastly greater than his appetite for dry bread.

Let me now turn to that which specially distinguishes this third mode of defence, and which has led alike to the recognition of its supreme importance in nature and to its use in actual practice. It is that we can measure rapidly and with substantial accuracy the effect it produces. Equal quantities of the bacteria are exposed to the action of equal numbers of white blood corpuscles for the same length of time in the one case in the presence of normal blood serum and in the other case in the presence of the blood serum of the patient. Slides are made of the results and stained, and under the microscope they show clearly the bacteria within the corpuscles which have ingested them, so that an average can be obtained of the number per corpuscle so ingested in each case. The ratio of these numbers (now known as the opsonic index) shows to what extent the patient's blood is more active in attacking the bacteria than is normal blood that is to say, to what extent it has been roused to the defence of the organism. In the case of the microbes that we recognise as sources of disease it is found that this ratio is normally raised by inoculations of the dead microbe, and this is the case whether the body of the patient is infected or not. We are justified, therefore, in thinking that, in the absence of exceptional circumstances, this is a form of defence of which Nature universally avails herself when such a microbe gains entrance into the body.

But how does this show the importance of the part it plays? To appreciate the proof of this you must study the history of its use in practical therapeutics. We all of us bow to the authority of experimental science. But when experiment has resulted in actual use in practical life the authority of the experience so acquired is yet higher. And for years past, primarily in England (which holds a proud position as pioneer in the use of this method) and subsequently in many parts of the world, patients suffering from microbic diseases have been treated by it and according to its indications. The all-important questions of the magnitude and frequency of the inoculations have been determined by the effect on the opsonic index, and often it is only by that index that the nature of the hidden foe has become known. Throughout this long trial it has been found that the clinical symptoms that when it is high the disease loses power and that when it sinks too low the disease makes progress. Such an accumulation of observations renders highly probable, though it does not absolutely demonstrate, that this is the main operative defence in the case of bacterial diseases. But it at all events demonstrates that for practical purposes we may take it to be so. The correspondence between the variations of the opsonic index and the clinical symptoms which can be obtained when experience has taught the proper dosage shows that even if we assume that other defensive forces of importance are present they must keep step with it, must vary as it varies, so that if we fix our eyes on its indications and act as though it alone existed we shall be following the right course, however many secret allies it has in its work.

But the success of this treatment of actual disease can

hardly be understood without the consideration of one difficulty which must, I am sure, have occurred to many of you in thinking over the theoretical explanation of its If the presence of bacteria thus increases the ferocity of attack of the white blood corpuscles, why is it necessary to introduce additional ones in the case of actual disease? In such a case the infection already exists; the microbes are already present in the system. Why do not those microbes operate to produce the desired effect? The use of the method to produce immunity against future attacks presents no such difficulty, because you there introduce the microbes into an organism that is free from them in order artificially to stimulate it to take up a position of active defence. But this explanation seems not to apply where similar microbes are already present. The true explanation of this apparent parodox is, I think, to be found in the mode of existence of the microbes when they have effected an entry into the body. Comparatively rarely do they succeed in maintaining themselves in the full blood stream. In the cases in which they do so (which are known as generalised infections) the battle is almost always short, sharp, and decisive. It would seem that the body cannot long tolerate such an intrusion by microbes, though the same cannot be said as to organisms of a somewhat higher type. In microbic diseases the microbes generally locate themselves in more or less clearly defined positions or foci of infection, and maintain themselves there with a certain degree of permanence. Such localised infections are so much more common than the general distribution of the bacteria throughout the system which is found in generalised infections that they may claim to be the normal

type.

Let us consider what goes on at such a focus. For the sake of clearness take the ordinary case of an infection by staphylococcus such as a boil. In it and along its borders the microbes abound so that they reign supreme. Nature for her own purposes has been desirous of cutting the part off from the general circulation, and has, for better or worse, succeeded to a great extent in so doing though perpetual frontier fights are still carried on. The effect of this is twofold. Nature reaps the benefit of isolating the invaders in their territory but it is at the cost of leaving it unswept by the blood stream so that the blood but little affects or is affected by what lies therein. The focus of infection constitutes a sort of Alsatia which the police leave unraided so long as its inhabitants keep within its borders. Such conditions contrast strikingly with those which are present when an inoculation is made. The microbes are there introduced into healthy tissue and in moderate numbers. They are not living microbes and so cannot possibly resist the attacks of the white blood corpuscles. If the actual generation of the protective substances takes place in the tissues they are surrounded by tissues in their normal and healthy state; if it takes place in the blood they are in free contact with it. That they should produce effects which the microbes in a focus of infection fail to produce ceases to be difficult to understand. It is an undoubted fact that they do so, inasmuch as otherwise it would be impossible to effect anything by inoculations. We should have to rest content with the results of the automatic action of Nature. We could neither strengthen nor assist it. Perhaps at first sight the fact that the microbes in the inoculations are dead would seem to make a difficulty in understanding their being so effective. But this only means that Nature recognises her minute foes by the taste of their flesh. These defensive reactions have been slowly evolved throughout long ages when the presence of microbes—alive or dead—

could only be due to an invasion, and it is no wonder, therefore, that the sudden appearance of a considerable quantity of them-whatever be their state of vitality-should be considered by the organism as a sufficient warning that it is time to call forth the forces of defence. When the inoculation has succeeded in midtion has succeeded in raising the avidity of the white blood corpuscles it is easy to see what happens at the focus of infection. The sulky and ill-kept truce is no longer observed. The corpuscles are able successfully to penetrate farther across the boundary because they can dispose of so many more of its defenders. Gradually the ground is cleared and the focus diminishes in size, and if the reaction to the inoculation be adequate and sufficiently long sustained the infection wholly disappears. Such a result is a matter of daily experience with staphylococcus in boils and carbuncles, with streptococcus in erysipelas and abscesses, with tubercle in glands, joints, and the other localised forms which used to be known as scrofula and in many other cases. The list of successes is a long one-far too long to be given here-and I am convinced that to make it many times as long only needs more workers in the field.

In thus giving my interpretation of the successes of inoculation in localised infections it must not be thought that I limit it to cases where definite foci exist. Analogous protection is doubtless found by microbes that affect special membranes or special organs and the structural changes which they cause may assist in sheltering them from the blood stream. Nor do I wish to imply that the treatment may not ultimately be made serviceable in generalised infections. But up to now its most marked and most uniform success has been in cases where the microbes have become more or less permanent inmates of the body.

It is the discovery that inoculations of dead microbes will increase the avidity with which white blood corpuscles attack microbes already present in the system which has lifted up therapeutic inoculation and has assigned to it a far more important and useful sphere of action than that which the earlier work indicated. That earlier work only aimed at rendering organisms immune to special bacteria and the memory of those early days has caused the term immunisation to cling to the whole subject of treatment by this type of inoculations. I regret it because it gives a false idea of what is now its true aim. It seeks to defend you against actual present enemies and not against possible future ones. You remember the legend that has been handed down to us about Mithridates, that he had so soaked himself in antidotes of all kinds that no poison could affect him. It would be no very exalted aim to seek to make a world of modern Mithridates, even if it were possible. Moreover, it would be a formidable task because we have learnt that these defences are strictly specific—each protects against the one microbe and no other-so that general immunity could only be obtained by countless inoculations even if the poor tormented body could bear them. It is a much more worthy task to defeat and drive out an enemy that is actually in the field. In such a case we fight only the evils which actually exist and not all possible forms that may or may not exist in the future. In such work the fact that the defence is specific helps rather than hinders us. The cultures can if necessary be made from the invading microbe itself, so that there can be no error in identification, and the importance of certainty in this respect is crucial. How absolutely indifferent microbes are to anything not directed specifically against them is well illustrated by a case of which I learnt a short while ago, where the patient was suffering from tuberculous glands. Treatment with tubercle inoculations healed them completely with the exception of one which continued unaffected until at last it commenced to suppurate. It was then found that the mischief in that gland was due to the presence of a streptococcus. Cultures were made from it, and in its turn that gland also healed up under treatment with inoculations of those cultures. It yielded when the treatment was specifically adapted to it, though it had been utterly unaffected by the previous inoculations.

This subject should therefore, in my opinion, be studied as a curative and not as an immunisating treatment. If I may use such a word it is phylactic and not pro-phylactic inoculation that we need. When we know that immunity of a high order against an ordinary disease can be obtained with little trouble, or when we know that an individual will shortly be exposed to special danger of a known kind, as, for instance, where troops are to be sent into districts infected

with plague or typhoid fever, it is doubtless wise to take precautionary measures. But these may be looked upon as special cases, while the domain of inoculation as a curative agent is well-nigh as wide as disease itself. It thus offers an almost boundless field for study. The fundamental laws on which it rests have been established and rules guiding its practical use have been laid down. But the conditions under which it works best in each case and the most desirable accessory treatment are to a large extent unstudied. that some of those whom I am now addressing will help in these respects to advance our knowledge and enable mankind still better to conjure with Nature's own spells.

Let me now shortly sum up the record of the last forty years as I have presented it. Science began by teaching us that we live as it were immersed in a sea of minute life; that micro-organisms are all around and upon and within us; that they are to be found not only in air and in water but upon almost everything that we touch; that while some are harmless and possibly beneficial to us, some are our deadly **en**emies. It has since convinced us that all infectious diseases as well as many that are non-infectious are due to these microbes; indeed, that there are few diseases which are not either originally caused or at some later period in their course aggravated by their presence. Life is one ceaseless war against these enemies, and the periods of our too transient successes are known as health. This condition of constant and deadly strife not only obtains during our own short lives but must have equally obtained throughout the long line of development of which we are the result. Yet the victory has not rested wholly with our foes. Our very existence is proof that Nature has at all events learnt how to conquer so far as she needs—i.e., she has not let the individual succumb too early for the continuance of the race.

We have seen how formidable her task is. She cannot effect it by isolation, for we derive our sustenance from without. The need of breath and nourishment compels free intercommunication with the external world, and we must accept its attendant microbic dangers. The choice within is equally fettered. In the life of nations the arts of peace on which the existence of the people depends must be paramount. War is only accessory to them-to assure the possibility of their continuance. Just so in the organism the task of nourishing the cells of the body stands first. It must be performed at all costs and at all risks. She must defend the organism under the conditions of an uninterrupted flow everywhere of a fluid of the highest nutritious value capable of satisfying all the wants of varied and highly specialised cells. And if nutritious to the cells it must be liable to become food to microbes who have had to maintain their existence amid all sorts of environments unpampered by such delicate nursing.

Our examination has shown to us three main characteristics of Nature's solution of the problem. In the first place, we find that she chooses the blood stream as the seat of the defence. Nothing less than this universal environment suffices because the mischief is equally wide. In the second place, we find that the defence is specific—it is directed in each case against the particular assailant and no other. In the third place, we find that in the intervals of the attacks the defence lies in capacities, not, if I may use such a term, in actualities. In other words, it is the presence of the enemy that calls into existence the changes in the blood stream that repel him, and those changes are antagonistic only to that special enemy. We have also seen that her task is twofold. The microbes generate toxins which will poison the organism if not neutralised and the microbes themselves will multiply to a fatal extent if they be not exterminated or at least kept down. Her defence against the first of these dangers is the generation in the blood of a specific antidote to the specific poison. Her answer to the second is manifold but it again is in the form of the generation of defensive substances in the blood. Sometimes the defensive substances are poisonous to the specific microbe, sometimes they cripple though they do not kill. But the defence upon which she seems above all to rely is the generation in the blood stream of substances which make the watchful white blood corpuscles devour that particular microbe with a greater zest until not even its tremendous powers of multiplication can save it from destruction.

In all this we see the action of righting forces-forces that come into operation when the organism is disturbed and for you will have learnt to follow her tactics.

tend to restore it to its normal position of equilibrium. In the case of the ship to which I have made reference engineers will demonstrate to you that the stability is given by the action of gravity on the supporting water. But what can be the mechanism here by which it is brought about that the poison generates instead of exhausting its antidote, and that the presence of the microbe leads to the production of a suitable condiment, and thus stimulates instead of satiating the appetite to devour it? To that I can unhesitatingly give the answer-I do not know. And for myself, I might put it in the yet stronger form—I have not the slightest idea. To me the mechanism that underlies these paradoxical manifestations of life is an absolute enigma. I accept them as fundamental laws because experiment has demonstrated their existence. But it has not lessened their mystery. I am aware of the brilliant scientific hypotheses which have been devised to ease somewhat the burden of belief, and I recognise the service they have rendered to investigators while groping their way in the present half light of early dawn. But I would utter a note of warning in their regard. Do not confuse the facts which are learnt by experiment with the hypotheses which are designed to explain them. The former cannot pass away, the latter may have to be abandoned in the fuller light of future knowledge. So long as a suggested mechanism accounts only for the phenomena which gave rise to it, it can only claim to be regarded as a possible solution of the riddle. It is when such a mechanism is found to account also for other phenomena widely different from those that suggested it that it first becomes entitled to claim to be regarded as the actual solution. I reconcile myself to the belief in these mysterious responses of Nature, not by speculations which would lessen their apparent strangeness, but by the reflection that life itself is so mysterious, so inexplicable, that one ought not to wonder that it can only exist by reason of reactions themselves inexplicable. I do not doubt that the part played by micro-organisms in the early days of the existence of life was as important and as universal as it is to-day, and the need of an adequate defence against them must have been a primal difficulty in the path of evolution. In experimentally isolating these laws we are bringing ourselves face to face with the special features of the solution that was found, and, strange though they may be, I do not feel impelled on that account to reject them when I realise that the incorporation into vital structure of some mechanism which would thus provide an automatic system of defence against microbic life must from the first have been a condition precedent of further advance.

Finally, I have called attention to the curative power that the new knowledge places in man's hand. In cases such as diphtheria and tetanus, where the poison is so powerful and so rapidly generated that it constitutes the main danger, we can gain for Nature the time necessary for calling her defensive forces into play by introducing from without supplies of the antidote which she herself has generated abundantly under more favourable circumstances. specific danger threatens in the near future we can by sterile inoculations into the organism while as yet unattacked rouse into actual operation its latent capacities for defence, so that if the attack should come it will find them in full play. But above all in that type of microbic disease from which humanity most frequently suffers, where the micro-organisms have located themselves so as to be more or less sheltered from the operation of the blood stream, and thus to avoid rousing its powers of antagonism, we can by like means stimulate the white blood corpuscles of the whole organism to fiercer attack, and as long clinical experience has already shown can little by little drive out the enemy from the position in which it had entrenched itself. In all this we are adopting Nature's means in order to outdo her work. For you who in the future will exercise the high calling of a doctor must never forget that you have set youself a harder task than that with which Nature contents herself. sacredness of human life in our eyes compels us to keep alive those that Nature would let die—to produce health where she would accept disease—to make life possible under circumstances where she would abandon the attempt. She is satisfied if the efficacy of her defence would save enough. We seek to save all. But though you seek thus to outdo Nature you cannot effect that object better than by wisely supplementing according to individual need that which is done automatically by Nature in racial self-defence. In so doing you will be a useful ally to Nature and fit to fight by her side,

Abstracts

OF

INTRODUCTORY ADDRESSES, ETC.,

DELIVERED AT THE

MEDICAL SCHOOLS

AT THE

Opening of the Session 1909-10.

ST. MARY'S HOSPITAL MEDICAL SCHOOL.

INTRODUCTORY ADDRESS BY H. A. MIERS, D.SC., F.R.S., PRINCIPAL OF THE UNIVERSITY OF LONDON.

Dr. Miers took for his subject "Theories." After a few introductory words he said: Those who possess the rare gift of originality belong to the genus of poets or makers of thought; they can be safely trusted to make something new however often they may be called upon. But it has sometimes seemed to me that though there are comparatively so few who possess this great faculty, it is at the same time true that there is for all people a certain period of life at which they are ready and anxious to invent and to produce something original, something of their own making, and that at this period they generally try to do so, however ineffectual may be the result. It is in the period including the close of school life and the beginning of university life, or whatever comes after school, that most people have been guilty of attempts to write poetry, or have endeavoured to construct a tale, or have believed themselves to be on the brink of a discovery or invention, or have taken up some new idea or theory of life which is, for them at least, a new thing of their own making and a piece of their own philosophy. I do not forget that many of those whom I am addressing are living in this happy and fruitful period. It has been too much the fashion to decry youthful efforts and to endeavour to persuade ourselves that knowledge and experience are required before anything good comes out of a man unless he be a heaven-born genius. For my part, I believe this to be really the productive period of an ordinary man's life, and that he who takes the trouble to search the history of his own mental development will find that anything which is the unaided product of his own intellect dates from this period; that the germ of any original thought which finds its expression in his more mature life is to be traced to late boyhood or early manhood. It is surprising how many authors have delivered their message and have said what they really have to say in their first, or at any rate in an early, book, perhaps so crudely and ineffectively that it has failed to catch the popular attention; it may be only with improved style and knowledge and experience that they have secured an effective hearing. Yet for all that, the later writings have been only developments of the original idea or variations upon the same theme.

Mentally as well as physically the child is father of the man, and it is generally possible to trace any person's original ideas to that early productive period, just as it is possible to find the features of the man in those of the child. The powers of expression may develop, new impressions are received, new ideas are acquired, but the original ideas of that period persist and are a part of one's nature, in a sense quite different from that of anything that comes later; they can never be completely shed, their imprint is permanent. It is something like the effect of the books which are read in childhood: their impression is never effaced, throughout life we regard them with feelings different from those which are stirred by the books that came later, and our childish regard for them persists in spite of our better judgment. But there is this difference between the impressions of childhood and those of manhood: the intellectual events of childhood came from without, and were most deeply impressed because that was the most impressionable period of our life. but the intellectual events of the later epoch of which I am speaking came from within and belong to the creative period. People, of course, change their views, give up the old and take on new ideas, but I believe that you will find that the new ideas which come in later life are generally adopted from others, often consciously adopted, and that the struggle adoption are due to the fact that they come from without and that a great battle must ensue before they can dislodge that which is really part of ourselves and not consciously derived elsewhere. Left to itself the mind revisits the early haunts, and continual effort is necessary to prevent a return to the thought which originated in that brief creative period.

There are two reasons why I venture to make these apparently inappropriate remarks. The first is, that after a certain age it is not profitable to try to be original; one has no new message to deliver; one must borrow a message from some wiser person or say something that one either said or might have said 20 or 30 years ago. And the other reason is, that in addressing students one is addressing those who are at the most original, inventive, and creative stage of their existence, and it is much better that they should develop their own ideas and foster the offspring of their own brains than adopt the thoughts of others. There is also, perhaps, another reason why I propose to dwell for a while on this subject. At the present time, when education is becoming more and more highly organised, there is a tendency to insist more and more upon the necessity of preparation. Before you can begin one subject you are told that you must master another, and a great part of our life is occupied in preparation for something else; indeed, there are people who, not only in their student days but through their whole life, are so much overwhelmed by the necessity of preparation that they spend it in preparing for things that are never done, endeavouring to master the ideas of others before daring to have ideas of their own, and pass an existence of promise without ever attaining to performance. It is quite clear that if you never undertake anything until you are fully and completely prepared you will not get very far. Considering that all school life is devoted to preparation, one would think that after school days the time had arrived to do some of the things for which one has been qualifying oneself and to develop one's own ideas.

There are some theories of education which are rarely stated as such by their adherents, but which none the less dominate their methods of teaching. For example, the view that it is a sound policy to teach things which are distasteful to the pupil because it requires a greater mental effort on his part to acquire them and is therefore a better training. Or the view that early or even university education is better devoted to teaching things that are never likely to be any direct use to the student than those which will be required by him in his life's work, because the latter are certain to be acquired later in the exercise of his profession or calling; and to teach them savours of technical training and is not education. In the last generation such views were openly expressed, and at the present day they are often at the back of a teacher's mind. They entirely ignore the incalculable value of enthusiasm in one's work, and forget that effort exercised upon something that awakens the interest of the pupil is far more profitable than the forced effort which is unaccompanied by interest. This was the fault of the old-fashioned classical training, or rather of the old-fashioned methods of classical training. It was all very well for the boy with literary instincts and tastes, but for the ordinary boy it was a study which had no point of contact with real life, and was only a task. The very language into which the classics were translated was not English, but the uncouth and hybrid tongue of the "crib." The literary methods of modern teachers, the living discoveries of archæology and philology have changed all this, and a boy or girl who reads. Professor Gilbert Murray's translation of or girl who reads Professor Gilbert Murray's translation of Euripides cannot any longer regard the Greek language and literature as a lifeless or barbaric thing. Another educational theory similar to these is the view that you ought to be always amassing a knowledge of facts not for present but for future use. Persons brought up in this spirit, or who of themselves prefer to work in this spirit, not only lose all the present interest in the vitality of their work, but live for the rest of their lives in a continual state of expectation or preparation, and are again investing their intellectual resources in promise instead of in performance. Let us rather be up and begin the work of life.

> Dimidium facti qui coepit habet : sapere aude : Incipe. Qui recte vivendi prorogat horam Rusticus exspectat dum defluat amnis : at ille Labitur et labetur in omne volubilis aevum."

from others, often consciously adopted, and that the struggle Or let me recall the words in which Carlyle speaks his heart and intellectual turmoil which so often accompany their in the book which contains his message to mankind, the

words that close the wonderful chapter in which that message is really contained:—

I too could now say to myself: Be no longer a Chaos, but a World or even Worldkin. Produce! Produce! Were it but the pitifullest infinitestimal fraction of a Product, produce it, in God's name! The the utmost thou hast in thee: out with it then. Up! Up! Whatsover thy hand findeth to do, do it with thy whole might. Work while it is called to-day: for the night cometh, wherein no man can work.

If there is a time of life at which these words may be taken to heart it is surely that which I have called the creative or productive period, and it will be sad if any of our educational methods or practices tend to stifle the creative or

productive power at this critical period.

I must not forget, however, that I am addressing those who are about to devote their lives to the profession of medicine, and that if I have anything to say it must be applicable to the medical student, or I shall not be able to justify my acceptance of your invitation to-day. Well, I think there are two reasons why the line of thought that I am suggesting should be of some profit to medical students. The first is, that, taken as a whole, there are, I believe, no students who are more keen upon their work or take more pleasure in it than medical students, so that they are not likely to be deterred from original thought by lack of interest. There are not many of them to whom their work is merely an educational task: a man rarely becomes a doctor or surgeon unless he feels some call to the profession, and he is generally working, not against his inclination, but in accordance with it. I do not think there is any other professional training of which this is equally true. And the other reason is, that in no profession is preparation more necessary or more arduous than in yours; no other man has to master so many preliminary subjects or spend so much time in fitting himself for his profession by scientific preparation. If the one circumstance is all in favour of intellectual activity and interest, the other seems to be all against it. wish, if I can, to show how they are to be reconciled.

There is a fable of Æsop quoted by Francis Bacon in his "Advancement of Learning" in connexion with alchemy. Let me tell it to you in his own charming words:—

Surely to Alchemy this right is due, that it may be compared to the husbandman whereof Æsop makes the fable; that when he died told his sons that he had left unto them gold buried underground in his vineyard; and they digged all over the ground, and gold they found none; but by reason of their stirring and digging the mould about the roots of their vines they had a great vintage the year following. So assuredly the search and stir to make gold hath brought to light a great number of good and fruitful inventions and experiments as well for the disclosing of nature as for the use of man's life.

I desire to bring home to you the lesson of this fable, that an idea, a theory, may give the necessary impulse and may inspire the enthusiasm that leads to good work, even though it be itself an insufficient or even an incorrect theory; for, after all, we have generally to be content with a working hypothesis, and the best of our scientific theories is liable to be overturned and will have to give place to a better. But that is no reason why we should not believe in it and be led by its inspiration. To the greater part of mankind such impulse is necessary, and the work of life without faith in some principle loses its inspiration and its pleasure. wish to believe that our labours lead to some result and that our knowledge is dominated by some principle, and we like to persuade ourselves that we know what it is. There are, it is true, rare spirits, like Browning's grammarian, "decided not to live but know," scholars and students of sincere and simple character, who are content to labour in the wide faith that earnest toil is bound to lead to useful results, and are content with the life of preparation.

"This in him was the peculiar grace— That before living he'd learn how to live— No end to learning."

But not many of us are scholars of this mediæval and cloistered type—

"Only to ourselves proposing problems proper to be solved By ourselves alone—who working ne'er shall know if work bear fruit Others reap and garner, heedless how produced by stalk and root;"

and least of all are they to be found in such an active profession as yours; great scholars, sometimes great teachers, may be made of such material, but not, I think, great doctors.

You in your more active life need the inspiration of a theory, the illumination of an idea, which can glorify the drudgery of preliminary studies, and the details of ordinary practice. That is the spirit of modern scientific work: the

restless desire to prove or to demolish the theory on which we are working for the moment and to discover the principles which underlie all that we can observe or do. It is this faith in a principle, this hope that we shall discover it, this certainty that our theory is leading us on the way to its discovery, that gives to even the drudgery of scientific routine work such a fascination for those who have once tasted the delight of scientific research. Work illuminated by a theory, or carried on with a general principle in view, cannot fail to be interesting, even though it be only work required for preliminary examinations. The moral that I wish to draw from the fable of Æsop for my present purpose is this: In all your work have a theory and believe in it, let it be your own if possible now in the creative and inventive period of your life; test it, not by the opinions of others or by their knowledge, but by your own observation and your own experience. No matter if you have later to reject it. Work uninspired by an idea is as aimless as a life uninspired by principles. The idea, especially if it is one's own idea, lends an interest and an excitement to scientific work, and, indeed, to all work, and, like the wishing cap of Fortunatus, transports its owner to a new world.

To Charles Darwin every little event, every trifling observation viewed by his thoughtful mind and in the light of his far-reaching theory must have been invested with an equal and an overwhelming interest; to his eyes every little detail must have had a significance which it possessed for no other. Let me remark in passing that Francis Darwin, in his introduction to the recently discovered sketch of the "Origin of Species" written in 1842, shows good reason to believe that the theory was budding in his father's mind when he was only 23 years old. Newton was only 24 when his conception of universal gravitation first found expression. Pasteur was about the same age when his mind was occupied with the theory of the relation between the disymmetry of crystals and the processes of life. Young had developed his theory of the interference of light at the age of 27. Galileo made his great discovery when he was 19. By many other examples I could justify my suggestion that the original idea or its germ in scientific thought, as in other subjects, is to be found in this productive period of early manhood. This is why I urge you to make and test your theories now and to turn a deaf ear to those who say that you should not begin to theorise until you have acquired knowledge and experience. Surely knowledge and experience are of use for the testing of theories and not for the making of them.

Let it be understood that I find no fault with the industrious accumulation of facts, with the patient study of details, at any or every period of a career. Did not Darwin himself supply the best possible illustration of this feature of the best scientific work? I would only ask you to remember that it was the theory which made those facts and details the most interesting things in the world to him, and it was because his course was illuminated by the guiding light of a theory that it led to such remarkable results. this it was by no means necessary that the theory should be a right one. In his autobiography, after saying that from early youth he always had the strongest desire to group facts under some general laws, he says: "I have steadily endeavoured to keep my mind free to give up any hypothesis, however much beloved (and I cannot resist forming one on every subject), as soon as facts are shown to be opposed to it. With the exception of the Coral Reefs, I cannot remember a single first-formed hypothesis which had not, after a time, to be given up or greatly modified." There is to many, if not to most, minds a peculiar pleasure in the mere amassing of facts or the mere acquisition of knowledge, but this is not the pleasure of higher scientific work; it may lead to a species of intellectual miserhood, and corresponds to the acquisitive instinct of a man who is a mere collector and whose pleasure is only in the possession of rare things and not in their use. It is sad to think that, whereas the collector of art or other treasures may perform a very useful function in the world by bringing together objects that would otherwise have been scattered or lost, the knowledge which the intellectual miser has collected dies with him and cannot even be bequeathed.

Again, there is a certain pleasure in the making of observation—in the mere exercise of the faculties involved in the process. It is delightful to contemplate lazily the

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breakers rolling in upon a sea beach; but let yourself begin to wonder whether the belief of the Greeks that the TRIKUMIa or every third wave is the largest, or that of the Romans that they recur at the fluctus decumanus or tenth, is the more true, and you will find yourself looking at them with closer attention and a new interest. Even so is there an added interest and an increased pleasure in any observation which is made not aimlessly but in the light of a theory. If you analyse the feeling I think you will find that it is due to the expectation; it is part of our sporting instinct, and is the same spirit which makes it interesting to watch the movements of the bird or beast or fish that we are hunting or to follow the varying fortunes of a game. The expectation is aroused and the attention is arrested. This sort of excitement is quite different from that of a very young child whose interest in everything is intense, but is aroused by one thing after another and not by the expectation of what is to come; his mind is not yet capable of that imaginative and intellectual effort. It is curious to watch a very small boy even learning to play cricket or football; he cannot keep up his interest, but gets distracted by other things that catch his eye; "atque animum nunc huc celerem nunc dividit illuc." It is a mistake to expect children of this age to find much interest in a theory or in first principles, as some educational authorities would wish. But it is just as much a mistake to expect university students to devote their thought and their energies to the provident but blind acquisition of knowledge for some unknown future use as the ant stores its provender for the winter. The real but aimless delight which is excited by the mere exercise of our faculties, whether in learning or in observation, is a sort of sensual pleasure, and I would contend that it is a very different thing from the intellectual pleasure of scientific discovery; and when the child's power of acquisition, which is due to the pleasing exercise of the marvellous memory that all children possess, is beginning to fail it is time that the higher intellectual powers should be developed.

You will understand, I hope, what I am driving at: it is, that after school days are over all the preparatory and educational work that we have to do should be taught and learnt in a new spirit, no longer as an exercise or a preparation, but as real active, living research guided by the light of theory and inspired with the hope of discovery. A great fault of the unsatisfactory, though necessary, examination system is that it tests the quality of memory unduly and can never do full justice to the other mental faculties, and so it inevitably encourages an uninteresting and uninspiring style of study. Surely to no one is the encouragement of the research spirit more necessary than to the medical student, who has to learn so many subjects and to pass so many examinations before he can get to the work of his life.

There are two ways of carrying on work in the spirit of research—one of them is to work in the constant and lively expectation of something new turning up without knowing what it will be, or rather in the confident knowledge that if we keep our eyes open we shall most certainly see something new in the most ordinary and oft-repeated laboratory exercises. And the other is to be always working in the light of a theory—in other words, to know what we expect and to test this expectation. The first method cultivates alertness of interest and observation. The second method is best suited for special and more advanced studies: it cultivates intelligent thought. And that is why I counsel medical students in all their work to adopt a theory and stick to it as long as they are able, and then, if necessary, to invent a new one, to work in the spirit of investigation in the light of their theories.

If you say that it is not so easy to invent a theory until you have mastered a subject, I would reply that every time you try to understand an experiment, an observation, indeed anything before it has been explained to you, so often are you obliged to invent an explanation or theory of your own: and that is all that I ask, neither leave the facts without an explanation of your own nor accept the explanation of another without thinking what it means. Perhaps if I were to counsel the other method and beg you to be always trying new things on the chance of a discovery and without understanding them I should lay myself open to the charge of advising medical students to experiment on their patients. a charge which is already made by the suspicious minds of too many ignorant persons. Let me, however, guard myself by reminding you that I am speaking, not of clinical practice, of which I know nothing, but of the learning and

teaching of science, of which I have some general knowledge.

Often must the medical student ask himself with a groan why he is expected to devote so much time to chemistry and physics and mathematics, which will apparently be useless to him in the future. If he really has this feeling I think it is due, not only to the narrowness of his own view, but partly, perhaps, to the very zeal and excellence of the teachers of these preliminary subjects. A mathematician teaches his subject as though all his pupils wished to become mathematicians, a chemist as though they wished to become chemists, and so on; and the text-books are written in the same spirit. So that the medical student runs, perhaps, a greater risk than any other of having his interest deadened by these preliminary subjects at the very time when his mind is most on the alert for new ideas. And yet, of course, these preparatory subjects are absolutely necessary; whether they are also interesting is, I think, entirely a question of how they are regarded. If properly taught and properly studied they ought to be not chemistry or physics or mathematics, but the chemical or physical or mathematical aspects of his own well-loved medical science; illustrations of the principles of that science, the materials and the tools by which its theories can be tested. Every student is most keen upon some special subject. Well, so far is science from being separated into water-tight compartments that I believe there is no branch of science which cannot be taught to him and made interesting to him through his special subject.

It would, no doubt, be very satisfactory if every medical man could have been first a mathematician, then a physicist, then a chemist, and so on through the different stages until he finally became a doctor. But life is not long enough for this process, and the minds of ordinary men are not able to contain so much knowledge. Helmholtz, who almost alone among men possessed the necessary mental powers, curiously pursued the opposite course, and, having begun as a military surgeon and then teacher of anatomy, became successively professor of pathology, anatomy, physiology, and physics. But his career really illustrates what I have been saying, for through his early interest in physiology he was led to make himself the first physicist in Europe, because you cannot be a first-rate physiologist without being a physicist; and on the way he made himself one of the first mathematicians in Europe, because you cannot be a first-rate physicist without being a mathematician. When he was asked to take up the Chair of Physics and Mathematics in Bonn he replied: "In lectures on mathematical physics I should treat mathematics as the means and not as the end. Wherever possible I should include the physiology of the eye and ear." Later in life he said: "I have always been aware, and have often said expressly, that I owe much to the study of medicine even in regard to my later career as a physicist. It gave me a much wider knowledge of Nature than I could otherwise have obtained from studies limited to inorganic nature and to mathematics: and the grave responsibilities that devolve upon the physician to ensure the success of his professional treatment accustomed me at an earlier period to strive after an exact knowledge of the actual facts and their consequence." Although we are not likely in the course of many generations to encounter another Helmholtz, we may at any rate remember from his example that there is no need to cut up the sciences into isolated compartments. Indeed, when you begin to reflect upon any theory, or law of Nature, or general principle, you at once cross the boundaries between the sciences.

If you read the history of the great discoverers, or of those who have made any successful advance in science, you will find that this is the spirit by which they were animated in their student days—the determination to understand what they learnt by getting a grasp of general principles, to put an idea of their own into it, and so to get something new out of it. Herein is the great charm of scientific work: in every observation or experiment, timeworn exercise though it may be, there is something new to be seen, some discovery to be made by those who have eyes to see it, and an idea to guide them. To such a person they can never be mere exercises, they are a field of unknown possibilities. I suppose there is no science in which these possibilities are more abundant than in yours; so, in spite of my ignorance of the principles of medicine, I have no hesitation in asserting again that the student who can work, however humbly, in the spirit which animated Darwin in

his young days, is certain to find an intellectual interest that cannot otherwise be acquired, and is certain to be rewarded by some advance or discovery, some new fact, or some new thought, that will be a full compensation for any labour that he may have incurred.

CHARING CROSS HOSPITAL MEDICAL SCHOOL.

INAUGURAL ADDRESS BY SIR T. CLIFFORD ALLBUTT, K.C.B., M.D., F.R.C.P. LOND., ETC., REGIUS PROFESSOR OF PHYSIC IN THE UNIVERSITY OF CAMBRIDGE.

AFTER presenting the scholarships, medals, prizes, and certificates to the successful students Sir Clifford Allbutt addressed the students. He discussed two topics-the importance of athletic games in the formation of character and the advantages of anatomy as a disciplinary study. He said it always gave him great pleasure to be present at a prize-giving ceremony. As regarded students who had won prizes he did not consider that their success would do them much harm, while those who had lost would get great benefit, though this benefit might be an indirect one. In life we all lost many prizes which we much desired, and it was well that no man should enter the battlefield of life without a little experience of disappointments. Men were very frequently apt to think that they had been overlooked when they failed to obtain some coveted appointment, and were sometimes inclined to believe that they could fulfil that appointment better than the man to whom it had fallen. We should understand that throughout the whole of life we must be prepared to receive set-backs, and by learning that lesson those who failed to get a prize in their student days might reap a greater benefit than those who won the prizes. On such occasions as the present, although there must be a great many men who were disappointed, there was one very striking feature in all British schools-namely, the entire absence of the very slightest shade of jealousy. It was very interesting to notice the cordial way in which those who were unsuccessful gladly and even enthusiastically welcomed the success of their comrades, and it was a pleasant fact that the enthusiasm even increased when the same student received more than one distinction. If the disappointment which resulted from the unsuccessful effort to win a prize was the best possible preparation for entry into life, yet the disappointment must be taken in a buoyant way and without the smallest touch of jealousy. This characteristic was the result very largely of our British games. He was not one of those who joined in the outcry against athletic games, for they engendered the virtues for which he was contending. By such games we learned the proper spirit in which to take little rebuffs and pains, and to subordinate our own opinions to the ruling of a captain, and to obey orders without hesitation and without recrimination. All these "drills" were exceedingly valuable, and it would be a very great misfortune if games fell out of fashion, or if, on the other hand, we paid other people to play our games for us. By means of games the education of character should go hand in hand with other studies. He noticed that the men who won prizes in school were very often the leaders in the playing fields. By the practice of games in a way which no gymnastics could supply we learnt to take the ups and downs and the chastisements of daily life. For life was a game, and it was in his student days that a man learned to play that game also properly. Even in games there was a great deal of drudgery, and we must not suppose that in the higher game of life or in school drudgery would have no place. Some teachers thought that it was possible for students to learn without drudgery. In modern education there was a tendency to represent education too pleasantly. Although it was possible to make the learning of some branches of science easy and even amusing, there were stages of learning which required much drudgery and a considerable amount of self-control. Many students came up to the universities who, although clever in many directions, had not learned to drudge, and were consequently without the capacity for precise study which the acquisition of true knowledge required. Recently the subject of anatomy had been much discussed as part of that great question of the curriculum of the medical student. The question of the curriculum was, indeed, a most difficult one to adjust. Almost every term he had complaints from specialists that a man had passed through the university who was unable, for example, to observe satis-

factorily the interior of a patient's nose. Yet, important as were all branches of medicine, he did not think that more could be got into the curriculum than it contained at present. Indeed, it astonished him that students were able to acquire the pile of knowledge which they seemed to possess in the five years of their study. And many who realised this heavy pressure on the curriculum wished to soften down the anatomy. What was the use, they said, of learning minute topographical details which would afterwards be of no practical service? His answer was that anatomy was, for its own sake, a disciplinary study of the utmost possible value. He knew of no study which forced upon the student the habit of close observation and the accurate representation of his subject as did anatomy. Even of graduates too many did not know what absolute precision meant. It was only after one or two subjects had been learnt profoundly that for breadth of view some other subjects might be learned more cursorily. Anatomy should be one of those subjects. The education of the physician was unique. No other came up to its standard of excellence. The physician was educated on a scientific basis, but his vocation afterwards involved large and wide moral issues as important to the patient as to the physician himself. All the new social problems were medical questions. He need not speak of them in detail, but did the House of Commons know what it was doing when it passed the law about the inspection of school children? Not in the least. But it had made one of the greatest steps towards social amelioration that had been made of recent years. The naval and military services of the country and the law were now organised on a great scale. The medical profession had to begin its public organisation. From being a private service it had now to become the great organ of growth in the State. Before very long the medical profession must be endowed with a ministry; it must have a hierarchy; it must have a means of expression and a defined responsibility before the public. "Make use of your time," Sir Clifford Allbutt concluded, "to take up the task before you."

UNIVERSITY OF BRISTOL.

INTRODUCTORY ADDRESS BY SIR ISAMBARD OWEN, M.A., M.D. CANTAB., F.R.C.P. LOND., VICE-CHANCELLOR OF THE UNIVERSITY.

THE first session of the University opened on Thursday. Sept. 30th, when the inaugural address was delivered by the newly appointed Vice-Chancellor, Sir Isambard Owen. large hall of the University was packed, many persons being obliged to stand. The chair was taken by Mr. P. J. Wasley. and there were also on the platform the Lord Mayor, the Sheriff, the Bishop of Bristol, Professor Lloyd Morgan (the ex-Vice-Chancellor), the Deans of Faculty, the Senate and Boards of Faculty, and certain members of the Council. Sir Isambard Owen, who was greeted with loud cheering on rising to give his address, congratulated Bristol on its accession to the ranks of the University cities. All honour, he said, to those who had toiled for this end, to those wealthy citizens who had made it possible, and to the corporation of Bristol whose foresight showed them what must eventually make for the welfare of the city. The nineteenth century was marked by a world-wide movement forward in higher education, which had brought the universities of both continents to a much fuller development than a hundred years ago. What was the significance of the modern university? The speaker answered his question by referring to the history and evolution of the university movement. It originated in the latter part of the twelfth century, in Paris particularly, where teachers and scholars of all nationalities resorted for the study of all branches of knowledge, and bound themselves together by mutual oath into a corporation comparable to the craftsmen's guilds of the same period. This compact corporation was not formed immediately, but by the aggregation of smaller corporations representing the various faculties; the Faculty of Arts contained several separate bodies or "nationalities" within itself which at first maintained an independent existence. The very word "university" was mediæval Latin for a corporation, and was equally applied in its earliest meaning to a barbers' guild. The teachers who constituted the corporation reserved the right of admitting others to the privileges of membership; those who were admitted were known in some universities as masters, in others as doctors, in others, again, as professors. These titles, each of which now has its

particular meaning, were once interchangeable and expressed the same idea with a variation of local colouring. The bachelor of the ancient university was not a full member but a kind of pupil-teacher. The object of such a corporation was not primarily the advancement of learning but the protection of the privilege of teaching. It came to pass, however, that those who were so imbued with the love of knowledge as to desire to teach it were impelled by their enthusiasm to labour for its advancement; and this, said the speaker, was an early proof of the fact that as a general rule the university was the centre of research as well as of teaching. Those who are keen enough to make good teachers are sure to be investigators. The same principle is to be seen to-day in the universities of America, where success is measured by the number of students who remain to continue their studies after graduation. Knowledge gained under such a system is living and not dead; too great an insistence on the examination system was apt to lead to a mere aggregation of dead knowledge. The speaker next attended to the matter of public control. Even in the University of Paris public control was provided for by giving the Chancellor, an ecclesiastical authority, the right to license teachers, a right exercised in conjunction with the University itself. This outside authority has been constitutionalised in modern universities, such as Bristol. The Chancellor's supreme power acts through the medium of court and council. Alluding to the matter of degrees, Sir Isambard Owen inveighed against the notion that the granting of degrees was the sole end and aim of a University, remarking that in Germany only a minority of students proceed to degrees, a remark the significance of which was appreciated by the audience with applause. On the other hand, the type of education which fits a student to become a wageearner was a necessary part of the university and must not be despised. "I cannot close my address," said the speaker, "without saying something about the democratic character of all mediæval universities." In such class distinctions were absolutely non-existent, owing to the predominance of the ecclesiastical over the feudal influence. The church sought for the best brains and sought for them in all classes. He saw with delight that the corporation of Bristol had devoted a large share of its university contributions to such ends by means of scholarships. Among all the types of fight which formed the sport of the mediæval universities he had never read of one between rich and poor. "All seemed to recognise the solidarity of their interests and the common brotherhood of the students."

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.
INTRODUCTORY ADDRESS BY SIR JOHN TWEEDY, LL.D.,
F.R.C.S. ENG., EMERITUS PROFESSOR OF OPHTHALMIC
MEDICINE AND SURGERY IN UNIVERSITY COLLEGE,
LONDON.

AFTER a sympathetic reference to the loss sustained by the school in the recent death of Dr. H. Radoliffe Crocker, Sir JOHN TWEEDY congratulated the prize-winners, reminding them that character as well as cleverness, and wisdom as well as knowledge, were necessary elements of success. The modern medical curriculum was such that conspicuous inaptitude for practical art was scarcely possible to the qualified practitioner. This was not always the case, as was instanced by Arnald of Villanova, one of the chief medical luminaries of the thirteenth century, who related that he knew an excellent professor of natural science learned in medical theory who could not treat the simplest ailment. This was an extreme type which was now extinct. As the antithesis of the learned but inexpert man there was in all professions the so-called "practical man," whose merits were generally overrated in popular estimation and whose lack of theoretical knowledge was often imputed to him for righteousness. Nor could it be denied that not infrequently he did attain a certain level of success, but he had narrow limitations. He dealt in particulars, was often quick to observe similarities, and in the treatment of disease concerned himself with symptoms without troubling to investigate the physical conditions upon which those symptoms might depend. Science arose from the discovery of identity or unity amid diversity of manifestation, and it was precisely here that the practical man so often failed. He appreciated agreements and similarities, but failed to discriminate differences. Such men were not altogether without illumination. Sir

John Tweedy proceeded to welcome the newcomers to the study of medicine and to congratulate them on their choice of a career. He maintained that there was no secular calling so philanthropic in its aim, so refining in its influence, and so beneficent in its operation as the practice of medicine. Like mercy, it was twice blessed: it blessed both patient and practitioner. Medicine was only worthily served when it was practised as a cult, in the devout spirit of worship. It must be served loyally and for itself. Sir John Tweedy continued: "Those who are now beginning medical study may, at the outset, be perplexed and discouraged by the new method of study and by the new order of ideas to which they are introduced. Heretofore the education of the student has been chiefly literary, based upon pedagogic authority and the dictatorship of books. Henceforth both the character and method of study will be altered. The influence of authority will still obtain; much knowledge must be taken on trust, but it is a critical trust. Whatever is taught here is based upon a knowledge which may have been the accumulation of centuries, or it may be knowledge recently acquired, but it is knowledge which in due time and place is capable of verification and demonstration. While this knowledge is based upon authority, it is the authority of persons who have examined it with care and attention and who have been competent to form a sound opinion upon it. In later life most of us, as Cornewall Denis upon it. In later life most of its, as consequently that remarked in his Essay on Authority, must accept much of our knowledge on the trust of our own authority. We have gone through a process of thought and investigation and have arrived at a given conclusion, but the reasons of that conclusion have passed out of memory. We hold these opinions rather upon the recollection of having once ascertained them to be well-grounded than from a clear present perception of these grounds. If this were not so we should, as Locke observes, be perpetually floating about in doubt and be at the mercy of those who have a readier or more retentive memory, or who have happened to master the arguments on one side of the question only. The growth of medical knowledge has been slow and subject to cyclical variations, sometimes to retrogression, sometimes almost to eclipse. But it has grown, 'creeping on from point to point.' The history of medicine furnishes many illustrations of this. In human anatomy, for example, it would at first sight seem to be easy, with due diligence, to ascertain and correctly describe the structure of the human frame, but it took many centuries of practical observation to reach even an approximate degree of accuracy. Aristotle, Hippocrates, Praxagorus, and other physicians of the Hellenic and the Alexandrian schools, studied anatomy, and yet the records of their observations contain many errors both of observation and of reasoning. Even Galen, who was considered the infallible oracle for fourteen centuries and who was the first to seriously study the science of anatomy and made many discoveries therein, also promulgated many errors. notwithstanding the impulse which Thaddeus and Mundinus gave to the study of anatomy at the school of Bologna in the thirteenth century the authority of Galen was so firmly established that when Vesalius in the middle of the sixteenth century published his famous work on Human Anatomy in which he corrected many of Galen's errors, there were not wanting anatomists who impeached the accuracy of Vesalius, or when this was no longer possible affirmed that the human organisation had undergone structural change since Galen's time. Now there is not a first year's student who will not be able daily to verify every statement made by his teacher or contained in his textbook. The progress of physiology has been even slower than that of anatomy. Indeed, scientific physiology is almost entirely the work of our own time. 40 years ago physiology was taught in University College by the greatest exponent of the day, I mean the illustrious Sharpey, but the physiology which he taught was almost entirely didactic and expository. There was practically no experimentation and scarcely any attempt at practical demonstration. Now physiology is eminently experimental, and the splendid position which it has attained amongst the natural sciences is the result of the employment of the experimental method. The course of medical education is progressive in complexity. In the earlier studies the method is authoritative and demonstrative, but in the final studies of medicine and surgery the method is more conjectural and

ratiocinative. Here exact observation, well-trained senses, and correct reasoning are the critical apparatus required. The problems to be solved are more complex and more obscure than those of anatomy and physiology. The difficulties of investigation are greater; the phenomena to be observed more difficult of interpretation, and the means of verification are fewer. In clinical medicine it is rarely possible to conduct an exact experimental inquiry, for we can seldom isolate the phenomenon under observation by an artificial arrangement of circumstances. As Mill has pointed out, there is this essential difference between Observation and Experiment: in observation we find our instance in Nature; in experiment we make it by an artificial arrangement of circumstances. Hence the growth of medical knowledge has been slow and halting. Centuries of observation by experienced workers have been needed to raise practical medicine to its present high level. But these observations have for the most part only improved the art of medicine and have done comparatively little for the advancement of its science. The science of medicine has been advanced mainly by the researches of those who have not been directly engaged in the treatment of disease. When new knowledge has been discovered by these means it has been received by competent judges, and by the influence of their authority it has been accredited and diffused. Failure to appreciate the difference between the dissemination of knowledge and the advance of knowledge has given rise to much confusion of thought and not a little waste of endeavour. Perhaps the crudest manifestation of this confusion is the belief, real or feigned, by some persons that inquisitorial experiments are performed in hospitals on men, or on animals, or both. Less crude—nay, even creditable in a sense—is the notion that by establishing sanatoria or endowing special hospitals for the treatment of particular classes of general diseases, it is possible to solve the problem of the nature and origin of these diseases and to hasten the discovery of the means of prevention and cure. Logically, this assumption is false; economically, it is wasteful. The great desideratum of our day is adequate endowment of biological and pathological research as the surest and most humane way of discovering the nature and cause of disease and the means of its prevention. Clinical observation only deals with disease when and as it manifests itself in man and animals; it throws but little light upon the causes of disease or upon the intimate processes which constitute the pathological state. Supremely useful as hospitals are for the purpose of treating the sick by the help of the best skill and knowledge of the time, and as schools for the training of successive generations of medical practitioners for the service of the community, it is nevertheless true that most of the capital discoveries of scientific medicine have been made outside hospitals and very often apart from clinical observation altogether. Among the most remarkable of these discoveries I may mention those relating to malaria, Malta fever, yellow fever, and I might add other diseases, which have baffled the best clinicians for centuries. In surgery, too, it may be said that the scientific basis of the modern aseptic method has been established not by clinical observation but by experimental research.'

Sir John Tweedy proceeded to illustrate this thesis by recounting the history of the use of the ligature for wounded arteries, and in this connexion he made an interesting quotation from the Apologia of Dr. J. F. D. Jones defending the experiments which he had made upon horses, and which resulted in the adoption of the modern method. The future practitioners of medicine would have to form an opinion on the justifiability of experiments upon living animals for the purposes of scientific research, and if they were satisfied that these experiments were justifiable with proper safe-guards they would be called upon to defend the practice and to justify their opinion. To do this intelligently it was necessary not only that they should be acquainted with the arguments for the defence but that they should also make themselves masters of the arguments on the other side. It was not enough to ascribe the opposition of the public to ignorance or fanaticism. There might be either or both, but objection could be only overcome and acquiescence gained by enlightening and educating the public mind. It should be remembered that the mass of a nation must be convinced of the value of a general principle which is being carried out, else nexion Dr. Goodall said "that if all teachers of physiology what we might judge the most salutary change would be in London hospitals would constantly bear in mind that they ineffectual. Ritchie, in discussing the Rights of Minorities, are teaching physiology to men who are going to be doctors,

had remarked that on matters of public health only the scientific expert could, in the first instance, form a sound judgment. In democratic societies there was often a distrust of scientific opinion. The remedy was not despotism but public enlightenment, and the scientific specialist was bound therefore by patriotism, as well as in the interests of his own science, to lend what aid he could to the popularisation of science from which he was too apt to recoil. It was the sole antidote to ignorance or pseudo-science. Those whom science neglected, fanaticism and quackery would claim for their own.

MIDDLESEX HOSPITAL.

INTRODUCTORY ADDRESS ON "WALKING THE HOSPITAL," DELIVERED BY J. STRICKLAND GOODALL, M.B. LOND., LECTURER ON PHYSIOLOGY AT, AND SUB-DEAN OF, THE HOSPITAL

AFTER remarking that an opening address at least had an educational value for its giver, and welcoming Lieutenant Shackleton as the prize-giver, Dr. Goodall welcomed the new students in terms of congratulation on their choice of the most interesting and least monotonous occupation in the world for their means of livelihood, and gave some excellent advice concerning the best means of preparation for its pursuit. After congratulating Sir Henry Morris and Professor Arthur Robinson on the distinctions conferred upon them during the past year, he opened his remarks on "Walking the Hospital" in the following words:—

"Doctors, like poets, are, I believe, born, not made, but it is perhaps just as well for the general public that, unlike the latter, they have to undergo a definite course of study which is usually known by the laity as 'walking the hospital,' a mysterious and lengthy performance which (also according to the laity) lasts a varying number of years, usually costs the parents an indefinite amount of money, and is *supposed* to be associated with much experimentation on the hapless poor. This afternoon I propose to give you a brief general outline of what 'walking the hospital' really is. At the present time under favourable conditions the process of walking the hospital takes about five years, this being the minimum time allowed by law. It has, I believe, been known to take longer, the long distance (time) record at present being, I understand, held by a gentleman who has up to now devoted 22 years of his life to it without either tiring of the amusement, ruining his health from over-study or satisfying the examiners. In the case of the London University medical curriculum five and a half years is the minimum time allowed, the extra half year having recently been added, possibly to enable the teachers and the students to master the regulations.

Dr. Goodall proceeded to describe the different stages of the medical curriculum, dwelling on the importance of each of its subjects to the education of the medical practitioner. After discussing shortly the preliminary sciences he spoke of anatomy, of which he said: "The importance of a knowledge of this science is readily appreciated by the student, for he at once sees the obvious impossibility, without it, of performing (with any degree of safety to the patient) any surgical operation or of conducting satisfactorily any medical or surgical examination. In fact, I once heard surgery defined (I must admit by an anatomist) as anatomy plus common sense.

Passing on to consider physiology, Dr. Goodall described that science as the key to anatomy, and the basis of pathology and of rational treatment in medicine. He regretted that it was, as he believed, less popular with the average student than anatomy, a fact which he attributed to two causes. Firstly, because in anatomy all the practical work is carried out by the student himself on the human body, and he consequently realises from the first that he is learning something which will be of immediate use to him in his professional work; while in physiology so many of the observations are of necessity carried out on the lower animals, and so much of the subject is theoretical or very difficult of demonstration, that the student is apt to overlook the direct practical bearing of such experiments on man. Secondly, because in the London schools, at any rate, anatomy was, as a rule, so much better taught than physiology. In this connexion Dr. Goodall said "that if all teachers of physiology in London hospitals would constantly bear in mind that they

not physiologists, and if they had the strength of mind to eschew those more purely academic parts of the subject which have no practical bearing on medicine, and finally if they had sufficient moral courage and self-denial to abandon for ever Pflüger's law, electrotonus, and the veratrine curve, and to substitute for them classes of applied human physiology in which the student was properly taught the systematic application of physiological methods for the investigation of the functions of the different organs and systems in the human body, then we should, I believe, have physiology occupying its proper position in the systematic practice of medicine and of treatment and enjoying a popularity with the student and practitioner which it never has enjoyed, and never will enjoy, under existing conditions. For what could be less useful to the average medical man than a knowledge of the veratrine curve or Pflüger's law, or what more useful than a really practical knowledge of the physiology of the normal human pulse. Yet I do not hesitate to say that the former have been asked twenty times in practical physiological examinations to the The great danger of specialisation in any latter's once. subject is, I take it, loss of judgment and perspective in relation to other subjects, and there has perhaps in the past been rather too much specialisation in anatomy and physiology. An up-to-date knowledge of surgery is, I venture to think, essential for the teacher of anatomy, as also is an up-to-date knowledge of medicine to the teacher of physiology in medical schools if they are to retain their perspective and judgment and teach use/ul anatomy or useful physiology to medical students. And here, lest some of you might be led to think that physiology has done little for medical progress, I would remind you of some of the more direct contributions of the physiologist to practical medicine. Adrenalin, a valuable natural hæmostatic now in daily universal use, is essentially the outcome of physiological research. The treatment of myxœdema and cretinism by thyroid extract, the nerve paths in the central nervous system, the influence of gravity on the circulation, the safe limits of chloroform anæsthesia, the nature of caisson disease, mountain and balloon sickness, are all direct offerings of the physiologist to the physician; and I would mention Pawlow's epochmarking work on digestion, for I doubt if there is any book written on medical treatment proper which is so pregnant in suggestion of rational treatment as is this, which is usually regarded as an almost purely physiological work. Researchers in physiology owe no debt to practical medicine, but teachers of physiology in medical schools do owe a great debt to practitioners of medicine."

Dr. Goodall then described the many studies and activities comprised in the clinical portion of the medical curriculum. He dwelt upon the importance of a working knowledge of physiology for their proper pursuit, and also of a study of the individual temperaments and peculiarities of different persons placed under similar conditions. "The importance of a psychic factor," he said, "is well recognised in ordinary physiological processes; for instance, with a psychic stimulus (appetite) one can digest four times as much food in a given time as without it. While as regards disease, I believe I am not wrong in saying that the psychic factor is, from the patient's point of view, the worst in every case. The truth of this remark is, I think, quite obvious in the case of such gross diseases as, say, cancer or leprosy, where the knowledge that the condition is more or less incurable and often loathsome to others is, I am sure, nine times out of ten, far more soul-racking to the patient and cause him (or her) far more suffering than the actual disease itself. While even in such a comparatively simple condition as a broken leg, more often than not, the mental state induced by the enforced rest and absence from business is a cause of far greater suffering to the patient than the actual pain or discomfort caused by the wound or injury. If this is correct, surely it is a factor which must be recognised and treated just as much as the actual pathological condition. The danger of this belief lies in the fact that one may exaggerate its importance and so over-treat it to the neglect of the actual physical factor. Ignore the psychic factor and your treatment may, in the case of a sensitive patient, amount to actual brutality, for I would here remind you that no pain is so easy to provoke as mental pain and none so difficult to alleviate. Over-treat the psychic factor on the other hand and you yourself become a quack and run the risk of making your patient a chronic neurasthenic!"

Dr. Goodall proceeded to point out the advantages of watching the methods and manners of some of the most successful and eminent men in the medical profession enjoyed by students during their hospital education, and showed the enormous importance of fulfilling thoroughly the various clinical offices in the wards and out-patient departments. He described the advantages of the social side of the student's life, said a word on behalf of the Officers' Training Corps, and concluded with these words: "Finally, gentlemen, it is during your hospital career that you will make friendships that will in many cases endure as long as you endure. Real friendships, I believe, are only made while young, and can only exist between persons of like tastes and ambitions, and it is here during your life in the hospital that you will be brought in contact with men of like age and similar tastes and ambitions to your own, for I think it is Sallust who says 'idem velle atque idem nolle, ea demum firma amicitia est,' which perhaps I might be allowed to translate for you as 'to have the same desires, the same aversions, that, and that alone is stable friendship!' In conclusion, if I might offer one line of advice it would be-Don't make friends of your patients or patients of your friends.'

A Lecture

ON

THE CLINICAL SIGNIFICANCE OF ALBUMINURIA.

Delivered at King's College Hospital

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GENTLEMEN, -The chief difficulty connected with cases of albuminuria is not concerned with the detection of minute traces, but with the determination of the significance of the albuminuria in the individual case. It is a somewhatcurious feature that in endeavouring to elucidate this question the amount of albumin that has been revealed by chemical processes is often a relatively minor consideration. Frequently when relatively large quantities are present a favourable opinion may ultimately be expressed, and conversely when only small traces are found and when at times the urine may give no decided reaction an unfavourable prognosis may be inevitable. The examiner for life assurance is, no doubt, right in deferring or refusing to accept at ordinary rates those individuals whose urine gives a reaction for albumin at the first examination, but this single observation will not justify rejection unless the presence of albumin is accompanied by numerous other indications of graveorganic lesion. It is well known that the course generally adopted by medical officers of experience entails a second visit and a reference to the medical attendant of the proposed. The medical attendant is obviously more likely to be able to conduct the series of observations which may furnish data for a diagnosis, and he may already be in possession of information which has not been disclosed to the examiner of the assurance company.

These considerations, derived from actual practice of an important branch of medical work, suffice to support the comparatively small amount of information afforded by the mere presence of albumin in the urine. It is a signal of possible danger, it is a call for caution, it may the first indication to point to the necessity of radical changes in the habits and occupation of the individual directly concerned, but it cannot alone warrant anything more than a bare statement of fact. It is only a starting point, comparable to a single observation of the temperature of the body or of the rapidity of the pulse; the significance must be sought from the consideration of numerous other factors, some connected with the extent and the frequency of the albuminuria, others with the general condition of the urine, such as the amount passed in 24 hours, the specific gravity and the colour, or the presence of other abnormal constituents, but in very many cases these data will be found to be supported or negatived by others relating to the

previous history, and by numerous factors obtained from a careful and detailed examination of other physiological **sys**tems.

One of the first elements to be considered is necessarily the occasion which has led to the examination of the urine and the detection of the albumin. When the condition has been ascertained in an individual who is applying for a life assurance policy, or for a certificate relating to his physical fitness to undertake some appointment, there will probably be no complaint of any symptom of weakness, and there may possibly be very little in the history to throw any light upon the cause of the albuminuria. The albumin may, indeed, come as a surprise at the end of an examination which has been otherwise satisfactory. These cases stand in an entirely separate category from that to which those patients belong who have some definite complaint for which they require the advice of a medical man, and accordingly come with perhaps a somewhat vague, or even misleading, account of symptoms. These, again, can be grouped apart from those in whom albuminuria is to be anticipated as a necessary consequence of the disease from which they are suffering.

These three groups of cases do not strictly conform to any definite classification of the causes or of the importance of albuminuria, but it may be well to bear them in mind as they must influence the spirit in which the question of elucidation is approached. Thus, for example, the type of symptomatic albuminuria so often met in various febrile conditions does not cause any immediate anxiety; it is noted as one of the many indications of the severity of the febrile state, and to this extent it has a certain importance. Febrile albuminuria, however, appears never to be associated with any grave interference with the actual work of the kidney, it is not an indication of the need of any special modification of treatment, and it is extremely doubtful whether it ever forms the starting point of chronic renal changes which will give trouble at a later period.

To illustrate this statement by a definite example, I may remind you of the frequency with which albumin is detected in the course of acute lobar pneumonia during the precritical stage; in this the symptom is an evidence of toxemia, but the degree of toxemia can be gauged by numerous other indications apart from an examination of the urine. Other symptoms are present from which the same inference can be deduced with comparative certainty; anxiety may be aroused by the condition of the pulse, by sleeplessness or delirium, by the rapidity of respiration, or by the degree of fever, without any reference to the albuminuria. If the patient passes the crisis safely the albumin speedily disappears, and it does not return.

Another example of symptomatic albuminuria is often shown in patients who are suffering from any disease involving retardation of the blood-flow in the renal capillaries, as with failure of compensation with heart disease, or with many chronic pulmonary conditions. Numerous patients with this symptomatic form of albuminuria have been under observation in the wards during the past few months, but in these cases, as in the febrile group, the albumin rarely causes When the sequence of events is not clear, when there may be reason to suspect that the albumin has preceded the cardiac changes, the prognosis will be affected, but when there is little doubt that it is the consequence rather than the cause, the albuminuria is not considered to merit very much attention. After a spell of cold and foggy weather there are always several patients in my wards with severe bronchitis, associated with definite evidence of bronchial spasm, and in the majority of these patients albumin is found in the urine during the period of greatest pulmonary distress. As in pneumonia, no symptoms can be assigned to this change in the urine, and the treatment is entirely guided by the pulmonary condition. As this improves the albumin disappears, this change affording proof, if any were needed, of the purely symptomatic nature of the albuminuria. In some of these patients there has been a certain degree of dropsy of the lower limbs, but this has been associated with so much cyanosis that it has not served to obscure the diagnosis or to lead to modification of the treatment.

The detection of albumin in connexion with evidence of heart lesions often opens up a more difficult problem; it is not always easy to express an opinion as to the significance of the albumin without more evidence than is probably available from the notes of the present condition. The they will therefore merely be a further indication of albumin,

amount of urine passed in 24 hours, the specific gravity, the amount of albumin present on successive days, and numerous factors connected with the general condition of the patient will have to be considered before it is safe to hazard a provisional diagnosis. To enter into details upon these points would carry me far beyond the limits of the present lecture, so I must content myself with briefly reminding you of the frequency with which your attention has been directed to the information to be gained from the aspect of the patient, the presence or absence of the subconjunctival tear, the extent of the cedema, and the character of the pulse. Before leaving the consideration of these cases of albuminuria accompanying heart murmurs it is necessary to remind you that great care must be exercised in connexion with the position of the cardiac impulse; in many forms of heart disease the cardiac impulse is displaced outwards, and since a similar condition occurs with chronic forms of renal disease you must be on your guard against drawing an erroneous inference from this indication.

Symptomatic albuminuria is so often seen in our wards that it does not appear necessary for me to deal with it at greater length. Ward work, however, and even an extensive experience of the out-patient department, will scarcely prepare you for many of the difficulties to be encountered in after life, and it is on this account that I think it is desirable to furnish you with a few hints which may be helpful after you have left the hospital. Albuminuria has been aptly termed a silent symptom; it may be detected when there has been no marked evidence of trouble to attract attention, and let me remind you again that although it does not necessarily indicate a serious organic lesion, the presence of albumin should always call for careful and repeated observation.

An initial error against which I would warn you is the attempt to measure the importance of the albuminuria by the amount detected at any time; albuminuria can never be a negligible quantity; it always has a definite significance, but it is far from correct to attempt to estimate the importance in direct terms of the amount of albumin. It is quite true that when a large amount is being lost daily the nutrition of the individual will necessarily suffer, but it is not safe to infer that because only a small amount is occasionally detected therefore it is of relatively small importance. Some of the most serious forms of albuminuria are those in which the detection of albumin may at times be a matter of difficulty, and in this they agree with many of the milder forms of functional, cyclic, or orthostatic albuminuria. In practical work, therefore, it is essential that you should be prepared to differentiate these cases, and this can generally be effected with comparative ease if attention is not limited too exclusively to the condition of the urine. There are, of course, certain features of the urine which must be noted, and foremost amongst these is the specific gravity. Before attaching much importance to the specific gravity, it is necessary to know numerous factors connected with the specimen—e.g., the relation of the time it was passed to the ingestion of liquids, the permanent nature of a relatively high or low specific gravity, and the possibility of some disturbing factor, such as an attack of diarrhea, recent violent exercise with consequent profuse perspiration, or even an excessive degree of nervousness at the mere fact of examination. To each and all of these disturbing influences due consideration must be paid, and from this brief summary you will readily infer that in insurance work, at least, where the proposer is seen under conditions which preclude a full knowledge of many of them, very little importance can be attached to an indication which, under other circumstances, is of supreme value.

The colour of the urine is to such a large extent dependent upon the degree of dilution, with which, of course, the specific gravity will also vary, that it is similarly also of very little assistance, though if we know that the urine is generally of a pale colour and the specific gravity is usually low, these facts will go far towards enabling a diagnosis to be made in a case in which a small amount of albumin has been found.

The presence of casts may be of material assistance, provided that too much importance is not attached to a few hyaline casts. Since the introduction of the custom of examining centrifugalised samples of urine which has been recently voided, there can be no doubt that hyaline casts are more frequently found. It must be remembered that such casts are likely to be present whenever albumin is found in acid urine,

without affording much more than negative evidence. They may be present in any of the types of albuminuria which are not associated with definite structural renal changes. They may be present in the orthostatic forms of albuminuria, and they may also be found in connexion with some cardiac cases, though in the latter class they may be accompanied by blood casts or by free blood corpuscles. On the other hand, other forms of casts if present may afford very valuable information of true organic renal changes, especially of chronic tubal nephritis. To a far more limited degree they may also favour a diagnosis of chronic interstitial nephritis, since it must be remembered that in this condition both casts and albumin may occasionally be absent for long periods. With regard to casts, therefore, the utmost that can be said is that their presence may be very suggestive, but that it will generally be unsafe to lay much stress upon their absence as a proof of the non-existence of possibly serious structural renal changes.

In the course of the routine examination of the individual it is probable that alteration of the cardiac sounds and of the position of the cardiac impulse will already have been noted, but it is quite possible that prior to the detection of albumin they may have been assigned to some less serious When dealing with those who have been long addicted to athletic exercises it is by no means uncommon to find some degree of cardiac hypertrophy and some accentuation of the force of the ventricular systole. These changes I have often found in rowing men, in those who have done long distance races, and in those who have exerted themselves with excessive cycle-riding, either in forcing the pace, in riding over-weighted machines, or in recklessly endeavouring to cope with hills. It must be remembered that such errors of judgment are most frequently, though not exclusively, limited to the period of adolescence, and that this is a time in which many types of albuminuria are likely to be detected. Incidentally, I would remind you that these conditions of overstrain may alone account for temporary albuminuria; this has been proved amongst rowing men at the Universities, and there appears very little room for doubt that it is true for all forms of violent muscular overstrain. The practical outcome, then, is that before attempting mentally to connect the cardiac changes with the albuminuria we must endeavour to determine whether they may not both be due to a common cause. Although this holds good when it is a young man who is being examined, the same degree of charity can rarely be conceded to a man of middle age in whom similar changes of the position of the cardiac impulse, and similar booming systolic sounds have been found at the apex. In this case it is highly probable that in addition to these changes there will be well-marked alterations in the sounds audible over the aortic area. The second sound is commonly sharp, clear, and ringing in character, and it is also probable that the diastolic sound may be reduplicated. This separation of the diastolic sound into its two constituents indicates an appreciable difference in the time of the closure of the aortic and the pulmonary valves respectively, which in turn is an evidence of an alteration in the normal relationship of the capacity of the two ventricles and also of the normal relation of the blood pressure in the aorta and the pulmonary artery.

In all probability before the examination of the urine the character of the pulse will also have received attention, and will perhaps have furnished some indications of value. A rapid pulse may rightly have been ascribed to nervousness under the ordeal of an examination upon which much may depend; comparatively little importance is generally attached to a mere increase in rate. More importance belongs to irregularity of rhythm, since although this may commonly be present with mitral lesions it is also frequently to be met with in chronic forms of albuminuria dependent upon structural lesions of renal tissue. There is no sequential association between functional or orthostatic albuminuria and an irregular or intermittent pulse. The two conditions may be found in the same patient, but some cause other than albuminuria must be sought to explain the abnormality of

In the separation of functional from organic forms of albuminuria indications of rigidity of the wall of the artery are not of material help, inasmuch as they do not occur until comparatively late in life when there is little ground for until comparatively late in life when there is little ground for suspecting a functional type of albuminuria. On the other is not a disease. Therefore, as with every other symptom,

hand, evidence of arteriosclerosis is extremely significant. and this may be estimated directly by the sense of resistance, by the sphygmomanometer, or by the sphygmograph. The first method is still largely used, though it requires considerable experience before it can be trusted to give much more than a rough indication, and there is always a fear of the introduction of the personal equation. The different forms of sphygmomanometer aim at replacing this personal factor by greater scientific accuracy, and in many cases the claim is fully justified. My experience has, however, led me to be somewhat cautious in accepting the results with implicit confidence; although usually trustworthy, the evidence afforded by the sphygmomanometer is from time to time distinctly at variance with the physical signs. In my hands the sphygmograph has given greater satisfaction as an evidence of high blood pressure, and therefore it has frequently been of material assistance in differentiating functional from organic types of albuminuria.

Comparatively recently the suggestion was made that the differentiation could be effected with ease by the administration of calcium lactate. This suggestion was based upon certain investigations which appeared conclusive, but in actual clinical work, both in hospital and in private, this simple method has not, so far as I have seen, equalled the expectations it aroused. It has been endorsed by some observers, but those who have found it successful are, I believe, far outnumbered by those who have been disappointed. Whether further experience will lead me to modify this opinion I cannot say, but I am convinced at present that it would be unwise to neglect the evidence afforded by the other observations, and to trust implicitly to a therapeutic experiment for the diagnosis.

Hitherto stress has been laid upon the different modes of conducting the examination when albumin has been unexpectedly discovered, but it must be remembered that often valuable indications are to be recognised before any systematic examination has been made. Thus due regard must be paid to the age of the person and to his appearance. Almost instinctively you will learn to recognise the pallor and the watery look of the eye of an individual who is suffering from chronic tubal nephritis, even when there is little or no cedema discoverable in any of the usual sites. Frequently also the aspect of the man with chronic interstitial nephritis is suggestive of antecedent gouty condition, or of chronic dyspeptic troubles, or in earlier stages in younger men the face may betray signs of a life that has been full of financial or other anxieties. Conversely, while many young men are devoid of any facial indication of orthostatic, cyclic, or functional albuminuria, you will not infrequently note an almost indefinable change of aspect which you will learn to associate with these conditions.

To summarise the conclusions, a large amount of albumin, without blood or pus, may generally be taken to indicate chronic tubal nephritis, and this can be confirmed by a high specific gravity, by microscopic examination, and by the appearance of the patient. A very small trace in an elderly or middle-aged man will probably indicate chronic interstitial nephritis; confirmatory evidence can be found in the aspect, the history, the pulse tension and tracing, the outward displacement of the cardiac impulse, the accentuation of the systolic apical sound, and the accentuation and reduplication of the second sound at the base of the heart. These indications may be further supported in some cases by the pale colour and low specific gravity of the urine; less frequently information may be gathered from the presence of casts and from their predominant characteristics. absence of casts is not, however, to be regarded as an indication that the case is not one of chronic interstitial nephritis. In a young man a mere trace of albumin may be the only evidence of a functional albuminuria, and the diagnosis must then rest upon negative evidence to a large extent, one of the most important factors being the relatively high specific gravity, unless this has been influenced by nervousness or by the recent consumption of a large quantity of liquid. the same limitations the deep colour of the urine will lend confirmatory evidence.

There are so many causes for great variations in the condition of the urine that stress cannot be laid upon the amount of albumin without paying due regard to most of the changes which have been touched upon in this lecture. After all, by itself it affords no reasonable ground for a diagnosis Numerous other signs and symptoms must be carefully weighed, perhaps at short intervals, before it is justifiable to express more than a provisional diagnosis.

AN INVESTIGATION INTO THE ETIOLOGY OF ERYSIPELAS AND ALLIED INFECTIONS.

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THE present investigation was undertaken with a view to determining certain disputed points in the etiology of erysipelas and the allied inflammatory lesions, cellulitis and lymphangitis. Erysipelas is commonly defined as a "specific and contagious infective disease due to the development of the streptococcus erysipelatis of Fehleisen in the smaller lymphatics of the skin." It has for long been a matter of dispute as to whether or not the streptococcus erysipelatis should rank as a specific organism, and it appears now to be generally taught that this streptococcus progenes, but in order to account for certain discrepancies it is described as "of a certain degree of virulence," 2 yet the term streptococcus erysipelatis is still retained in the majority of descriptions of the disease. In addition to erysipelas proper a more extensive type of acute superficial inflammation is defined under the titles of "phlegmonous" and "cellulo-cutaneous erysipelas." In this variety certain clinical features are described by which it may be distinguished from erysipelas on the one hand and cellulitis on the other; it is stated to be doubtful whether or not it is contagious, and it has been suggested to be the product of a mixed streptococcal infection, "the erysipelas organism growing in the skin and the streptococcus pyogenes in the deeper structures." 4 Two further conditions of acute superficial spreading inflammation with which erysipelas is liable to be confounded are those of cellulitis and of acute lymphangitis in its later stages. While the specific nature of erysipelas is widely recognised, it is allowed that a spreading inflammation of the subcutaneous tissues-or cellulitis-which presents distinctive clinical features, may be produced by a variety of organisms, and that in some of the more localised forms the staphylococcus pyogenes aureus is the causative agent. Acute lymphangitis, in the same way, has no claim to be considered as a specific disease and neither this condition nor that of cellulitis is anywhere liable to "notification."

In considering the etiology of erysipelas it is necessary to determine the nature of the organism which causes the condition, and the relation which it bears, if any, to the organisms present in such allied inflammations as cellulitis and lymphangitis. Of recent years a considerable amount of work has been done upon the differentiation of the streptococci and their classification. Andrewes and Horder 6 have isolated a large number of streptococci from various sources and have been able to arrange them into a few fairly definite groups which depend for their differentiation mainly upon the reactions set up by the organisms in the carbohydrate media introduced by Gordon. The streptococci are thus found to fall into three main groups, representing three fairly constant varieties, which have been classed by Andrewes and Horder under the names of the strepto-coccus pyogenes, the streptococcus fæcalis, and the streptococcus salivarius, with its closely allied variant the streptococcus anginosus. In the same manner the pneumococci, while presenting many points of similarity with the streptococci, are found to form a distinctive group, possessing fairly constant reactions. In this investigation an attempt has been made to isolate the causative organism from cases of erysipelas, and of the similar acute spreading inflammations of the skin and subcutaneous tissues, and to subject them to all possible cultural tests, including Gordon's carbohydrate media, with the object of determining whether the causative organism of erysipelas is a constant one, and whether it presents any features by which it may be distinguished from the other pyogenic streptococci.

These questions are of some practical importance since the various surgical procedures which have been adopted in cases of erysipelas appear to have no recognisable influence in shortening the course of the disease and of recent years treatment by serum-therapy has been largely employed. The serum used has been derived from various sources. The so-called anti-erysipelas serum is usually derived from the serum of a horse which has been inoculated with a mixed culture of streptococci obtained from several cases of erysipelas; sometimes a streptococcus pyogenes serum is used, the horse in this case having been immunised by a pure culture of one or more strains of the streptococcus pyogenes; a "polyvalent" streptococcal serum is also employed and is obtained from various strains of streptococci chosen indiscriminately from different lesions. Uncertain as is the value of serum-therapy in erysipelas, it would obviously be of importance to ascertain if all cases of erysipelas are due to the same organism before drawing any conclusions as to the value of serum treatment in any particular series of cases.

In addition to the bacteriology of these infections certain points in their histology have been investigated when the necessary material has been available. The various cases were taken from the wards and out-patient department of St. Thomas's Hospital, and in each instance the source and mode of infection were investigated so far as it was possible. A review of all cases of erysipelas admitted to, or arising in, the hospital over a period of 12 years was also made in order to determine if cases of erysipelas, by spread of infection, gave rise to this disease only, and, conversely, if other septic conditions ever gave rise to erysipelas. The answer to these questions, upon which the specific character of erysipelas depends, determines the manner of dealing with these cases. Should erysipelas patients alone be isolated, or should all cases of streptococcus infections be placed

Technique.—In the erysipelas cases films were made and cultures taken from the exudation of the wound when this was available. The films were stained by Gram's method and the culture media employed were "lemco" broth and nasgar. In cases of mixed infection an isolated streptococcus colony was, when possible, inoculated on to a second nasgar tube and the subsequent growth transferred to the various media; isolation by plating on Petri dishes was usually avoided, since the colonies thus obtained frequently died out on being transferred to liquid media. The behaviour of the streptococci thus obtained upon agar and gelatin, in litmus milk, broth, neutral red broth under anaerobic conditions, and a large number of Gordon's carbohydrate media, was in each case fully investigated. In a certain number of instances, however, owing to the presence of other actively growing organisms, the nature of the streptococcus present could not be determined. In a number of cases in which blebs of considerable size were present, these were opened aseptically and several loopfuls of their contents smeared over a nasgar slope. In a few cases in which neither a discharging wound nor blebs were present the skin at the spreading edge of the rash was scarified with a sterile needle and cultures taken from the exuding serum. In some instances films made from the bleb contents or from the clear serum obtained on scarifying the skin were treated by Leishman's stain and a differential count was made of the cells present. In only one or two cases could portions of the skin be obtained for histological purposes. In the cellulitis and lymphangitis cases films and cultures were investigated in a similar way, and were obtained either from the original wound or from the pus evacuated at the time of operation. In several of the cellulitis cases small portions of the skin were removed during the operation for microscopy. In all about 60 cases were investigated, the majority of which were diagnosed as erysipelas; a few cases in which an operation was followed by a spreading erythema of doubtful nature are also included.

The crysipelas infections.—Out of 60 cases examined bacteriologically 38 were considered on clinical grounds to be typical instances of erysipelas. The following is a short

Rose and Carless: Manual of Surgery, 1902, p. 94.
 Muir and Ritchie: Manual of Bacteriology, 1902, p. 182.
 Rose and Carless: Manual of Surgery, 1902, p. 96.
 Cheyne and Burghard: Manual of Surgical Treatment, 1904,

Part i., p. 217,

5 Rose and Carless: Manual of Surgery, 1902, p. 80.

6 Andrewes and Horder; The Lancer, Sept. 15th, 1906, p. 708.

account of a few of such cases as illustrate points of importance in the etiology of the disease.

Case 2.—A skin graft was taken from the chest for a plastic operation on the fingers. 24 hours later crysipelas developed about the raw surface on the chest; the skin graft also suppurated freely, but did not give rise to crysipelas. A scarification of the skin at the spreading edge of the rash produced a sarcina only. The pus from the raw surface on the chest yielded a pure growth of a streptococcus. This coccus was in every respect a typical streptococcus pyogenes, and was apparently inoculated by the surgeon into the superficial layers of the skin, producing crysipelas, and into the subcutaneous tissues of the fingers, producing suppuration only.

Case 22.—Osteomyelitis of the radius in a child was operated on and crysipelas arose round the wound seven days later. An abscess of the

CASE 22.—Osteomyelitis of the radius in a child was operated on and erysipelas arose round the wound seven days later. An abscess of the neck was opened three days before the onset of the erysipelas. Cultures from the bone abscess gave staphylococcus aureus, a diphtheroid bacillus, and a typical streptococcus pyogenes; from the neck abscess staphylococcus aureus, staphylococcus albus, and a typical streptococcus pyogenes were grown. In this case the aureus was no doubt the cause of the osteomyelitis and of the neck abscess. The streptococcus was introduced later into the arm and the neck civing rise to

coccus progenes were grown. In this case the aureus was no doubt the cause of the osteomyelitis and of the neck abscess. The streptococcus was introduced later into the arm and the neck, giving rise to erysipelas in the one place but not in the other.

CASE 26.—An abscess of the neck was opened and erysipelas developed some days later. Cultures from the bleb and from the abscess yleided a growth of staphylococcus albus and a typical streptococcus yogenes. This was the only instance in which a streptococcus was successfully cultivated from the contents of the bleb. In this case the abscess was supposed to have been caused by the albus and the streptococcus to have been introduced in a subsequent dressing.

CASE 28.—An appendix abscess was opened and some weeks later erysipelas developed around the still discharging sinus. Cultures from the sinus gave a growth of staphylococcus albus and a fairly typical streptococcus faccalis. It is possible that in this case the streptococcus faccalis was derived from the intestinal tract.

CASE 29.—A breaking-down carcinomatous gland of the neck was opened, and the wound was afterwards plugged in order to check secondary hæmorrhage; within 24 hours erysipelas developed. Cultures from the neck produced a diphtheroid bacilius and a typical pneumococus. This coccus was inoculated subcutaneously into a mouse which died four days later. Capsulated diplococi were present in the heartblood, and a pure culture of the pneumococcus obtained from the spleen. The breaking-down growth in the neck communicated with the buccal cavity, and it is possible that the pneumococcus causing the erysipelas was derived from the mouth and inoculated on to a raw surface at the time of the operation. The patient died, and a portion of the skin at the edge of the wound was removed at the poet-mortem examination, and sections showed necrosis and cedema of the epithelium, a marked cellular exudation around the blood-vessels, together with numerous bacilli and a few Gram-positive diplococi.

at the time of the operation. The patient died, and a portion of the sain at the edge of the wound was removed at the post-mortem examination, and sections showed necrosis and edema of the epithelium, a marked collular exudation around the blood-vessels, together with numerous bacilli and a few Gram-positive diplococci.

Case 49.—Cellido-cutaneous ervsipelas following a contusion of the elbow of three weeks standing. The fluid from a bleb contained large numbers of polynuclear cells. Cultures from a bleb grew the staphy-lococcus albus only. Cultures from a surgical incision yielded a pure culture of a somewhat unusual streptococcus approaching in type to the pneumococcus, but which we have classed as a streptococcus pyogenes. A portion of skin was removed at the operation and sections of this show clearly a typical acute inflammatory condition of the epidermis itself; the superficial layers of the epidermis are in places stripped up, forming spaces (or blebs) which contain large numbers of polynuclear cells. These sections are markeily different from those derived from the cases of acute cellulitis, unaccompanied by erysipelas.

Case 53.—A double osteotomy of the femors for rachitic curvatures was followed in three days by suppuration of both legs. The suppuration continued for some weeks, and erysipelas eventually supervened around the sinus in the left leg, the condition of the right leg remaining unaltered. Three days after the commencement of the erysipelas cultures were taken from the left leg and produced a staphylococcus aureus and a streptococcus. The following day cultures were taken also from the right leg and staphylococcus aureus and a streptococcus aureus and a streptococcus were again grown; about 24 hours later a typical attack of erysipelas arose around the sinus of the right leg. The streptococci derived from both legs were in every respect identical, and, although they acidified litmus mannite, and did not affect salicin, we have classified them as members of the streptococcus poyenes group, s

patient from her scalp to the puncture wound of the hypodormic needle.

CASE 57.—A wound in the neck of a child was followed by facial erysipelas. Cultures from the wound yielded staphylococcus albus and streptococcus gogenes. A culture from the streptococcus isolated was inoculated into two mice; in one case into the cellular tissues beneath the skin, in the other case into the scarlied epidermis itself. The mouse inoculated subcutaneously died in three days, and numerous streptococci were found to be present in films taken from the heart blood. Sections taken at the site of inoculation showed acute inflammation of the subepidermal cellular tissues, the epidermis itself being normal. The second mouse remained well and was killed four days after inoculation; nothing could be seen at the site of the scarlified skin and nothing abnormal was found in the sections of the epidermis in this situation; no organisms were found in the films of the heart blood.

The following tables (Tables I. and II.) give the full cultural characters of the streptococci isolated in the

	cul:	tural sipel	ch as ci	arac ases :	ters —	OI	ti	he	st	rep) TO	001	CCI	. 1	.50	la.	ш		11		td:	•
Case 2. Case 6. Case 7. Case 15. Case 17. Case 22. Case 23. Case 25. Case 23. Case 23. Chains	!	Саже 59.	Chains to 20.	Clear fluid,	P.p. cols	Growth, no liq.	;	Na.	+ -	+ +	- 1		+				1	1	Actd	no clot.	}	
Case 2. Case 6. Case 7. Case 15. Case 17. Case 23. Case 23. Case 25. C		Саже 57.	Chains to 30.	Clear fluid,	P.p. cols.	Growth.		Na.	+		+	•		١			+	-	Acid	no clot.	!	
Case 2. Case 6. Case 7. Case 15. Case 17. Case 23. Case 25. C		Case 56.	Chains to 30.	Clear fluid,	P.p. cols.	Poor growth,	no llq.	Nil.	÷	-	⊦ ı			,			+	- 1	Poio*	no clot.	1	
Case 2. Case 6. Case 7. Case 15. Case 17. Case 23. Case 25. C		Case 54.	Chains to 30.	Clear fluid,	P. p. cols.	Poor growth,		Nil.	+		+ 1			ı			4	- 1	PloA	no clot.	i 	tion,
Case 2. Case 6. Case 7. Case 15. Case 17. Case 23. Case 25. C		Case 53.	Chains to 30.	Clear fluid,	P.p. cols.	Growth, no liq.		Nil.	+	1 -	+ +	-		,			,		2104			cid produc
Case 2. Case 6. Case 7. Case 15. Case 17. Case 23. Case 25. C		Case 52.	Chains to 14.	Clear fluid,	P. p. cols.	Growth,	•	Na.						1				ı				et out == 1
Case 2. Case 6. Case 7. Case 15. Case 17. Case 23. Case 25. C		Case 49.	Chains to 12.	Clear fluid,	gran. dep. P.p. cols.	Growth,		Nil.	+		+	'		4	•			1	:			ified; and
Case 2. Case 6. Case 7. Case 15. Case 17. Case 23. Case 25. C	Group.	Case 46.	Chains to 30.	Clear fluid,	gram dep.	Growth,	<u>.</u>	Nil.	+		+	·			1			ı	;		100000	; + = sold
Case 2. Case 6. Case 7. Case 15. C	Pyogenes	Case 39.	Chaths to 30.	Clear fluid,	gran. dep.		no. Ifq.	N.A.	1	+	+	!	۱ -۱	۱ -	. (1		+	1	Acid,	110 0106	notaction
Case 2. Case 6. Case 7. Case 15. C	Hococous	Case 33.	Chains to 40.	Clear fluid,	grain. dep. P.n. ools	Growth,	İ	N.C.	+	1	+	ı	1 -	+	'	1	1	+	ı	Acid,	110 0106	q. = no Nq
Case 2. Case 6. Case 7. Case 15. C	es: Strey	Case 26.	Chains to 20.	Clear fluid,	gran. dep. P.n. mls	Growth,		Net	+	+	+	1		+	1	1	ı	+			IIO CION	ples; no li
Case 2. Case 6. Case 7. Case 15. C	ipelas Ca	Case 23.	Chatna to 80.	Clear fluid,	gran. dep.	Growth,		N.d.	+	+	+	,	1	+	ı	1	ı	,			no cior.	point colo
Case 2. Case 6. Case 7. Case 15. C	I.—Errys	Case 22.	Chains to 30.	Clear fluid,	gran. dep.	Growth,	·har on	N.d.	+	+	+	t	1	+		1	1	+	+		no clos.	ols, = pin
Chains Chains Chains to 24. Chains Chains to 24. Clear Glear Gle	TABLE	Case 17.	Chains to 18.	Clear fluid,	gran. dep.	Growth,	10. IId.	N.66.	+	ı	+	,	1	+	ı	1	,	+	,	Acld,	2	
Chains Chains Chains to 24. Chains Chains to 24. Clear Glear Gle		Case 15.	Chains to 36.	Clear fluid,	gran. dep.	Growth,	no. 11d.	N.66.	+	+	+	1	1	1	1	1	1	+	1	Acld,	no clot.	Gran, dop. = granular deposit;
		Case 7.	. Chains	Clear fluid.	gran. dep.	F.p. cols. Growth.	no. nq.	NG.	+	1	+	1	'	ı	ı	1		+	+			dep. = gr
		Case 6.	Chains	Clear	gran. dep.	F.p. cols.	no nd.	N.a.	+	+	+	•	1	+	1	1	+	,	ı	Acld,	no clot.	Gran.
		Case 2.	Chains	Clear find	gran. dep.	P.p. cols. G.owth.	no. liq.	N.I.	+	. 1	+	ı	1	1	1	1	1	+	,	Acld,	no clot.	1
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			Morp	Broth		Agar	•	Neut		Litm	Litm	Litmi	Litm	Lkm	Litm	Litera	Litera	Litter	Litm	Litm		

TABLE II.—Erysipelus Cases; Streptococous Facalis Group.

-	Case 20.	Case 28.	Case 30.	Case 51.
Morphology	Chains to	Chains to	Chains to	Long chains.
Broth	Clear fluid, gran. dep.	Clear fluid, gran, dep.	Clear fluid, gran. dep.	General turbidity, gran. dep.
Agar slant	P p. cols.	P.p. cols,	P.p. cols.	P.p. cols.
Jelly slant	Very poor growth, no liq.	Very poor growth, no liq.	Very poor growth, no liq.	No growth.
Neutral red broth (anaerobically)	Nil.	Na.	Abundant growth, no altera- tion of.	Nu.
Litmus glucose	+	+	+	+
Litmus lactose	+	+	+	i –
Litmus maltose	+	+	+	+
Litmus mannite	+	+	+	+
Litmus glycerine	+	_	-	<u> </u>
Litmus cane sugar	+	+	+	_
Litmus raffinose	_	+	-	_
Litmus erythrite	+	_	-	_
Litmus sorbit				
Litmus salicin	+	+	+	-
Litmus inulin		_	-	_
Litmus milk	Acid, no clot.	Not investigated.	Acid, no clot.	Acid, no clot.

Gran. dep. = granular deposit; p.p. cols. = pin-point colonies; no liq. = no liquefaction; + = acidified; and - = no acid production.

The pneumococcus obtained from Case 29 gave the following cultural reactions:—Broth, general turbidity and granular deposit; agar, pin-point colonies; jelly slant, no growth; neutral red broth (anaerobically), green fluorescence; litmus glucose, acid; litmus maltose, acid; litmus mannite, nil; litmus glycerine, nil; litmus cane sugar, acid; litmus raffinose, acid; litmus erythrite, nil; litmus salicin, nil; litmus milk, acid and solid clot. In addition, a mouse was inoculated suboutaneously and died four days later. Capsulated diplococci were present in smears from the heart blood and a pure culture of the pneumococcus was obtained from the spleen.

Out of these 38 cases of erysipelas an organism of the streptococcus class was found to be present in 29 instances. In only one case, in which a wound was present, was no evidence of a streptococcus obtained either in the films or in cultures made from the wound; diplococci only were present in the films, and cultures yielded a profuse growth of the staphylococcus aureus. We regard this exception as due to a technical error and consider that a streptococcus was probably present but was not demonstrated owing to the abundant growth of the staphylococcus. In the remaining eight cases no wound was present, and it was only possible to obtain cultures either from a bleb or from the fluid obtained on scarifying the skin, and both of these appear to be most unfavourable materials for demonstrating the causative organism. That the abundant inflammatory exudate, usually present in the blebs, should so rarely produce a growth of the streptococcus was a somewhat unexpected occurrence, and on only one occasion was such a growth obtained; the explanation may be that these localised collections of serum possess bactericidal properties. In the 30 cases, therefore, in which a wound was present an organism of the streptococcus class was found on 29 occasions. Of these 29 strains six could not be isolated owing to the presence of other organisms. In 23 cases the full cultural characters of the organisms were obtained, and these have been grouped according to the classification of Andrewes and Horder-that is to say, 18 have been classed as members of the streptococcus pyogenes group, four as examples of the streptococcus fæcalis, and one as a pneumococcus. While it would, perhaps, be unwise to accept the classification of Andrewes and Horder as final, and to regard the streptococci which they have differentiated as true species, yet sufficient evidence is afforded that the various strains of streptococci can, on the basis of their cultural reactions, be divided into a few fairly definite groups, and that any member of each of these groups is

capable of retaining its special cultural reactions for many generations either outside the body or after its passage through animals. If, then, the streptococcus erysipelatis possessed any peculiar and established pathogenic properties, and if that streptococcus produced only erysipelas, we should expect to find that it possessed also peculiar and established cultural reactions. There is, however, we think, sufficient evidence that while the typical streptococcus pyogenes is the coccus most frequently met with in erysipelas, yet streptococci, which exhibit considerable cultural differences, and even pneumococci, are in a fair percentage of cases the causative organisms. Moreover, the variability of the organisms met with in erysipelas appears, as will be seen, to be closely comparable with that of the organisms present in cellulitis, a condition which has never enjoyed the distinction of being considered a specific disease. It has, however, been urged in favour of the specific character of erysipelas that the disease is transferred as such from one patient to another; yet while this undoubtedly does occur, as, indeed, one would expect, such evidence as we have been able to obtain shows it to be an event of considerable rarity. The subjoined tables (Tables III. and IV.) have been drawn up from the published hospital statistics concerning the incidence of erysipelas cases arising during the stay of patients in St. Thomas's Hospital. Only those instances of erysipelas arising round a pre-existing wound have been considered, as in these cases only were the statistics showing the incidence of erysipelas in surgical wards reliable. The inclusion of other cases, such as those of facial erysipelas, would, as a matter of fact, have made little difference in the statistical relationship between the number of beds and the number of instances of the disease in question. The average number of surgical beds was 264 and was distributed as follows: 240 in the general wards, and 24 in the septic wards. From 1896 to 1905 no attempt was made to isolate erysipelas cases from other cases admitted to the septic wards, but in 1906 six additional beds, in small isolation wards in the septic block, were added for the accommodation of erysipelas cases. This year is omitted from both tables since the arrangement was

TABLE III.—Showing Incidence of Erysipelas around Wounds arising in Hospital.

Year.	Number of cases.	In septic wards.	In general surgical wards		
1896	18	2	16		
1897	17	1	16		
1898	18	4	14		
1899	12	2	10		
1900	19	3	16		
1901	7	2	5		
1902	18	3	15		
1903	27	8	19		
1904	19	4	15		
1905	21	5	16		
Total for ten (176	34	142		
Percentage	_	19:31	80-69		

Note.—Proportion of children under six to adults is about the same in general and septic wards.

TABLE IV.—Showing Incidence of Erysipelas around Wounds arising in Hospital after Isolation Wards were established for Erysipelas Cases.

Year.	Number of cases.	In septic wants.	In general surgical wards		
1907	18	8	10		
1908	13	7	6		
Total	31	15	16		
Percentage		48·4	51.6		

made in the middle of 1906. In 1907 and 1908 we have the figures for a short period during which the erysipelas cases were isolated. A comparison of these two tables shows clearly that while the incidence of erysipelas is, as one would expect, greater in septic wards than in the general surgical wards, yet the separation of erysipelas from other septic cases has had no effect in lessening the occurrence of erysipelas in these septic wards.

The figures for the occurrence of erysipelas in the septic wards for 1908 include three cases which arose under the following circumstances. The erysipelas isolation wards being full, a girl with a sinus of buttock surrounded by a septic eczema was admitted to the female septic ward on Dec. 9th. On the following day, with no constitutional disturbance, there was an added, somewhat marginated, erythema over the buttock. This redness lasted only for 24 hours and did not spread beyond the buttock. The patient remained in the ward. On Dec. 18th two cases in the same ward, one with a wound due to necrosis of the jaw, and the other with a discharging retro-pharyngeal abscess, developed erysipelas around their wounds; they were transferred to the erysipelas ward. Subsequently a culture was taken from the sinus of buttock and this yielded a growth of a streptococcus, and the case was then regarded as having been one of erysipelas of a fleeting nature or an instance of a "septic rash." There was at the same time a case of facial

erysipelas in one of the two male septic wards because the male erysipelas ward was full, and in this ward no other cases of erysipelas arose. These two parallel cases go to prove that the danger of transmitted infection depends on the presence of discharge from a streptococcal wound rather than upon the risk of contagion from such a lesion as facial erysipelas, which is practically free from discharge. In this connexion it may also be noted that one or two cases of doubtful erythema were admitted direct to the special erysipelas ward, and the subsequent course of these cases proved that they were not suffering from erysipelas on admission, nor did they contract it, though exposed to infection, at any rate by aerial contagion.

With regard to the dressing of wounds in general, we may state that, as a rule, the dress-

ing used was plain sterilised gauze, though in some of the dirtier cases the gauze was wrung out in 1 in 40 carbolic before being applied to the

There is direct evidence that the same organism may produce at the one time erysipelas and at the other cellulitis, an experiment which was accidentally performed in one case in this series in which a streptococcus was introduced into two separate lesions, giving rise to local suppuration in one place and typical erysipelas in the other. In two other cases, however, the transference of the streptococcus from one erysipelas infection to another lesion in the same patient was followed by a second attack of erysipelas, an event which may be explained by the supposition that the point of entry of the organism was in each case the epidermis. The evidence of animal inoculation is certainly opposed to the view that the organisms of erysipelas possess any specific properties. The animal experiments performed in this investigation are not sufficiently numerous or definite to admit of any conclusions being drawn from them; in one instance, however, the organism isolated from a case of erysipelas produced cellulitis, septicæmia, and death in a mouse, but no erysipelas. McFarland states that: "When injected into animals Fehleisen's coccus behaves exactly like streptococcus pyogenes," and in another place, "If the cultures (of streptococcus pyogenes) be of moderate virulence

and the ear of a rabbit be carefully inoculated with a small quantity of a pure culture, local erysipelas usually resultsif, however, the streptococous be highly virulent, the rabbit dies of general septicæmia." That the varying lesions usually obtained by inoculating animals with streptococci from various sources do not necessarily depend upon the degree of virulence of the organism in each case is shown by the experiment referred to above, in which a mouse died from septicæmia with spreading cellulitis after the inoculation of a streptococcus into its subcutaneous tissues, whilst another mouse simultaneously inoculated by means of rubbing in a culture of the same streptococcus into the scarified skin escaped unharmed; the different effect in this case might reasonably be explained solely by the difference in the point of entry of the organism.

Erysipelas is commonly considered to be more infectious than cellulitis, and this may be due to the more superficial nature of the inflammation and to the desquamation which accompanies the former condition, but the danger of infection is the danger of transferring streptococci from one patient to another, a sufficiently serious event, of which perhaps the least serious effect is the production of erysipelas.

With regard to the mode of infection in these 38 cases of erysipelas, in 21 infection occurred outside the hospital, and in no instance was any history of exposure to infection

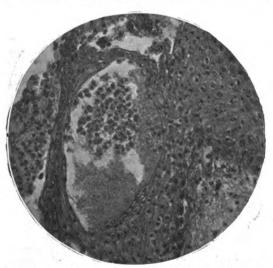
obtained; in many of the cases alone in seven cases. in some instances transferred

of facial erysipelas no obvious wound was present at the time of admission to the hospital, but some slight abrasion of the surface epithelium had doubtless taken place and subsequently healed. In 13 of these 21 cases in which streptococci were proved to be present other organisms were present in six cases, a streptococcus the 17 cases of erysipelas arising in the hospital, one was infected at an operation and yielded a pure culture of a streptococcus. In the remaining 16 cases streptococci were found to be present in 15, 13 times in company with other organisms, and twice only in pure culture. Many of these cases were infected with other pyogenic organisms at the time of operation and when suppuration commenced were to a "septic" ward, which

is now isolated from the erysipelas ward and nursed by a different staff. The preponderance of mixed infections in the hospital cases in contrast to the high percentage of pure infections in those cases arising outside the hospital is evidence of the comparative failure of aseptic precautions when dealing with a large number of various infections. The one hospital case in which no streptococcus was found was a case of facial erysipelas, without obvious lesion, arising in a female medical ward. A history of a previous attack of erysipelas was obtained in several instances in this series, and the extremely short period of immunity conferred by an attack was well shown in the cases of the two patients, in whom two separate outbreaks of erysipelas developed within a few days of the original attacks. It is worthy of note that while such streptococcal and pneumococcal infections as erysipelas, lobar pneumonia, and probably rheumatic fever are accompanied by but a brief period of immunity, and, indeed, actually predispose the patient to a second attack, yet scarlet fever, which is by some considered to be a streptococcal infection, frequently confers upon the patient a complete and life-long immunity.

A further point in the etiology of erysipelas, which was

particularly investigated in this series, was the exact site of the inflammatory processes, and it would seem that in this consists the main, if not the only, difference between this



Microphotograph (No. 2 eyeplece, ith inch objective). Section through centre of crysipelas "bleb" showing the collections of polynuclear leucocytes on the surface and within the layers of the epidermis. There is no cellular infiltration of the deeper structures.

⁷ McFarland: Text-book upon the Pathogenic Bacteria, 1906, p. 268.

condition and that of cellulitis. Owing to the fact that in the great majority of cases no indication for surgical incision arose, in only two instances could portions of the skin be obtained for microscopy, and in both of these the epidermis itself showed the histological characters typical of acute inflammation. Many cases, however, were accompanied by the formation of vesicles within the layers of the epidermis, and the cytological evidence of the fluid obtained from these yielded abundant evidence of the superficial site of the acute inflammation, the cells of the fluid in every instance consisting almost entirely of microphages and macrophages. In addition, in some cases in which blebs were absent similar cytological findings were obtained on scarifying the epidermis. The evidence that in erysipelas the condition is one of acute inflammation of the epidermis itself is in striking contrast to the histology of cellulitis, for although a clinical examination of the skin in cellulitis would appear to reveal

but it is improbable, at any rate in the cases in which the rash becomes generalised and resembles the eruption of scarlet fever, that the epidermis itself shares in the acute inflammation. The redness of the skin is probably due to a cutaneous dilation of the blood-vessels such as is present in the erythema of scarlet fever. Owing to the presence of other organisms the streptococcus could only be isolated in one of these cases; its cultural characters were as follows: Morphology, chains to 30; broth, clear fluid, granular deposit; agar, pin-point colonies; jelly, no growth; neutral red broth (anaerobically), abundant growth, no alteration of colour; litmus maltose, acid; litmus mannite, nil; litmus raffinose, acid; litmus salicin, nil; and litmus milk, acid, no clot.

Cellulitis cases. - Twelve of these cases were investigated altogether. They were chosen as typical cases of undoubted cellulitis and showed no clinical features of interest. The all the characters of an acute inflammation, yet examination | full cultural characters of the cocci isolated are given in the

TABLE V .- Cellulitis Cases; Streptococcus Pyogenes Group.

	Case 8.	Case 12.	Case 14.	Case 21.	Case 24.	Case 36.	Case 43.
Morphology	Chains to 70.	Chains to 24.	Chains to 22.	Chains to 24.	Chains to 70.	Long chains.	Long chains.
Broth	Clear fluid, gran. dep.	Clear fluid, gran. dep.	Clear fluid, gran. dep.	Clear fluid, gran. dep.	Clear fluid, gran. dep.	Clear fluid, gran. dep.	Clear fluid, gran. dep.
Agar slant	P.p. cols.						
Jelly slant	Growth, no liq.						
Neutral red broth (anaero- bically).	Nil.	Ntl.	Nil.	Nil.	Nil.	Ntl.	Nil.
Litmus glucose	+	+	+	+	+	+	
Litmus lactose	_	+	_	+	_	_	_
Litmus maltose	_	+	+	+	+	_	
Litmus mannite	_	_	_	_	_	-	_
Litmus glycerine	_	_	_	_	+	_	
Litmus cane sugar	+	+	+	+	+	_	
Litmus raffinose	_	_	_	<u> </u>	+		_
Litmus erthyrite	_ :	_	_	_	_	-	
Litmus sorbit	_	_	_	_	+	-	
Litmus salicin	_	+	+	+	+	_	+
Litmus inulin	_	_	_	+	+	_	
Litmus milk	Acid, no clot.						

Gran. dep. = granular deposit; p.p. cols. = pin-point colonies; no liq. = no liquefaction; + = acidified; and - = no acid production.

of sections of the epidermis in this condition presents no evidence of any departure from the normal.

The treatment of erysipelas is somewhat outside the scope of this paper, but it may be mentioned that many of the cases were treated by some form of serum, and, on the whole, with very little effect, a result which may be in part explained by the probability that in many instances the serum employed was obtained by the immunisation of a horse with a streptococcus of different nature from the organism producing the erysipelas. In the only case in this series in which a chronic suppurative condition followed the acute attack of erysipelas, treatment by a vaccine prepared from the streptococcus obtained from the patient's tissues was promptly followed by marked improvement.

Cases of crythema of doubtful nature.—These cases, five in number, consisted of crythemata arising in connexion with septic wounds. In three instances the rash was generalised and the diagnosis of "surgical" scarlet fever was made. The first of these cases is included only as a control to the findings in the erysipelas cases. There was an erythema of the face without any constitutional symptoms. The serum obtained from an almost healed cutaneous wound in the erythematous area yielded no evidence of inflammation, nor was any pathogenic organism obtained from cultures taken from the fluid. In the remaining four cases an organism of the streptococcus class was obtained on three occasions, and a staphylococcus aureus in one case. In no case could a section of the skin be obtained, nor were any blebs present, and it is uncertain whether there was inflammation of the skin itself or not. It seems possible, however, that many of these "septic" rashes spreading from an infected wound are of an acute inflammatory nature and associated with organisms of the streptococcus class, to be present on 10 occasions, once an unusual coccus was

accompanying tables (Tables V., VI., and VII.), and the organisms are grouped in the same manner as in the erysipelas cases.

TABLE VI.—Cellulitis Cases; Streptococous Fæcalis.

_	Case 3.	Case 11.		
Morphology.	Chains to 8.	Chains to 22.		
Broth.	Clear fluid, gran. dep.	Clear fluid, gran. dep		
Agar.	P.p. cols.	P.p. cols.		
Jelly.	Faint growth, no liq.	Very faint growth, no liq.		
Neutral red broth (anaerobically).	Na.	Na.		
Litmus glucose.	Acid.	Acid.		
Litmus lactose.	Nil.	Acid.		
Litmus maltose.	Acid.	Nil.		
Litmus mannite.	Acid.	Nil.		
Litmus glycerine.	Nil.	Nil.		
Litmus cane sugar.	Acid.	Acid.		
Litmus raffinose.	Nil.	Nil.		
Litmus erythrite.	Nil.	Nil.		
Litmus sorbit.	Mt.	Na.		
Litmus salicin.	Ntl.	Nil.		
Litmus inulin.	Ntl.	Nil.		
Litmus milk.	Acid, no clot.	Acid + solid clot (3 occasions).		

In 12 cases of acute cellulitis a streptococcus was found

TABLE VII. - Ceilulitis Cases; Unclassified Cocous.

-	Case 10.
Morphology.	Pairs and chains of 4.
Broth.	General turbidity.
Agar.	Round, somewhat opaque colonies of a size intermediate between those for a streptococcus and those for a staphylococcus.
Jelly.	Good growth; liquefaction in 1 week.
Neutral red broth (anaerobically).	No growth.
Litmus glucose.	Acid.
Litmus lactose.	Acid.
Litmus maltose.	A cid.
Litmus mannite.	Nil.
Litmus glycerine.	Acid.
Litmus cane sugar.	Acid.
Litmus raffinose.	Nil.
Litmus erythrite.	Nit.
Litmus sorbit.	Acid.
Litmus salicin.	Ntt.
Litmus inulin.	Acid.
Litmus milk.	No alteration of medium.

This coccus proved non-pathogenic to a guinea-pig.

obtained, and once a staphylococcus aureus. In the case in which staphylococci only were present no incision was made and the cultures were taken only from a varicose ulcer which was the starting point of the cellulitis. In the 11 cases in which organisms of the streptococcus class were present the coccus was not isolated on one occasion owing to an air contamination; of the other 10 cases seven proved to be due to the streptococcus pyogenes, two to a streptococcus fæcalis, and one to an unclassified coccus. The cultural characters of the strains of streptococci obtained showed no typical variations by which they could be distinguished from the strains obtained in the erysipelas cases. Owing to the fact that an incision was necessary in the majority of cases, the streptococcus was frequently found in pure culture, and it was possible to obtain small portions of the skin for micro-scopy. Although all the clinical signs of acute inflammation were present in each case the only signs proper to the skin itself would appear to be those of redness and possibly heat, due no doubt to a dilatation of the cutaneous vessels. In all the sections examined no microscopical evidence was found of acute inflammation of the skin itself; the inflammatory exudate was confined to the subcutaneous tissues, and there was no invasion of the epidermis by polynuclear or other cells. Cases of acute cellulitis are usually accompanied by a considerable degree of fever and marked constitutional disturbance; if actual pus formation does not occur they run a rapid course, tending to recovery. Erysipelas and cellulitis appear to differ only in the effects which an acute inflammation of the skin would give on the one hand, and of the deeper tissues on the other. The epidermis is not a suitable tissue for the development of large abscess cavities within its substance, but the formation of cuticular "blebs" filled with an acute inflammatory exudate is comparable with the larger pockets of pus frequently met with in the subcutaneous tissues in cellulitis.

Lymphangitis cases.—Five only of these cases were examined and they were clinically chosen as typical instances of the disease. In each case a pure culture (if the additional presence of a diphtheroid bacillus on one occasion be excepted) of the staphylococcus aureus was obtained. The full cultural characters of four of the staphylococci obtained were investigated, but these differ in no way from those of similar organisms isolated from other pathological conditions, with the exception that no clot was produced in milk in any case. Table VIII. shows the cultural properties of the cocci examined.

A portion of the reddened skin was removed on one occasion and no evidence of acute inflammation was found in it. Cases of lymphangitis usually present a longer incubation period and less severe constitutional disturbances than are customary in erysipelas or cellulitis, and in accordance with this they and if the application of Gordon's tests be allowed as a would appear to be usually caused by an organism of different means of differentiating the various species of streptococci,

type and less severity. Lymphangitis can, as a rule, only be diagnosed in its early stages, in which the subcutaneous red lines of the inflamed lymphatics are seen to connect the primary lesion with the enlarged, and often suppurating, collections of glands. Staphylococci are particularly liable to spread by the lymphatic circulation and streptococci by

TABLE VIII. - Lymphangitis Cases; Staphylococcus Aureus.

	Case 9.	Case 16.	Case 19.	Case 37.	
Broth	General turbidity.	General turbidity.	General turbidity.	General turbidity.	
Agar slant	Large yellow colonies.	Large yellow colonies.	Large yellow colonies.	Large yellow colonies.	
Jelly slant	Liquefac- tion in 2 hours.	Liquefac- tion in 2 hours.	Liquefac- tion in 2 hours.	Liquefac- tion in 2 hours.	
Neutral red broth (anaerobically).	Green fluor- escence.	Green fluor- escence.	Green fluor- escence.	Green fluor- escence.	
Litmus glucose	· +	+	+	+	
Litmus lactose	+	+	+	+	
Litmus maltose	+	+	+	+	
Litmus mannite	+	+	+	-	
Litmus glycerine	+	+	+	+	
Litmus cane sugar	+	+	-	+	
Litmus raffinose	i -	_	-	_	
Litmus erythrite	-	_	+	+	
Litmus sorbit	+	-	-	-	
Litmus salicin	<u>'</u> -	-	+	_	
Litmus inulin	<u> </u>	-	-	-	
Litmus milk	acid, no clot.	acid, no clot.	acid, no clot.	acid, no clot.	

+ = acidified; - = no acid production.

direct continuity, so that in infections by the former organism glandular involvement is almost invariable, while in acute streptococcal infections the glands frequently escape. Hence, either glandular enlargement or the presence of a staphylococcus would be in favour of the diagnosis of lymphangitis rather than cellulitis.

Résumé.—The objection that all the cases selected for cultural investigation were not really erysipelas must, of course, be met, but the examples chosen were characterised by most of the accepted clinical signs of cutaneous erysipelas that is to say, in nearly all of them there was a shiny red cedema of the skin with well-defined edge, and the presence of vesicles on the cutaneous surface, accompanied in most instances by constitutional symptoms of fever, headache, anorexia with initial vomiting, and, not infrequently, shivering or an actual rigor. It was, however, discovered at an early period of this investigation that the certainty of diagnosis of erysipelas rested on three groups of phenomena -namely, such physical signs as have been mentioned above, constitutional disturbance, and the local spread of the erythema with its growing margin, and of these the last appears to be the most constant feature in streptococcal infections of the skin. Vomiting or shivering may be absent in cases which present the typical skin lesion of erysipelas, while in a few of our cases of cellulitis these severe constitutional disturbances occurred—cases which yielded a growth of a streptococcus but which showed no inflammation of the epidermis. Fever, as a rule, was much more marked in the typical erysipelas cases than in those of cellulitis, even where a quantity of pus was shut in and required evacuation by the knife, but there were several cases with initial vomiting and a characteristic spreading red rash, in which the temperature was never higher than 100° F., as taken in the mouth. The conclusion at which we arrived, therefore, was that the most constant and reliable phenomenon on which a diagnosis of erysipelas could be based was the spread of the erythema from a local focus, this spread of infection being characterised by true inflammation of the epidermis with exudation of leucocytes, and not merely a transitory erythema due to vascular dilatation, such as occurs in cellulitis and lymphangitis.

Erysipelas, then, may be caused by a variety of organisms,

it would appear that a considerable percentage of cases are produced by organisms other than the streptococcus pyogenes. The organisms isolated from the cases of erysipelas vary on lines comparable with those obtained from cases of cellulitis; nor are any particular cultural properties found in organisms obtained from the one disease and not in those derived from the other. In one instance both local suppuration and typical erysipelas were produced in the same patient by the same streptococcus, an event in accordance with the results obtained in some instances of animal inoculation. The main difference between erysipelas and cellulitis would seem to depend, not upon the virulence of the causative organism, but upon the actual site of the lesion; in erysipelas there is invariably acute inflammation of the epidermis itself; in cellulitis deeper tissues are involved and the epidermis escapes. The period of immunity conferred by an attack of erysipelas is extremely short, and it would appear either that one person is more liable to the infection than another, or that one attack actually predisposes to a second. The course of acute erysipelas would seem at present to be little influenced by serum therapy, and it is possible that a better result might be obtained by the accurate method of obtaining the appropriate serum in each infection, if such a proceeding were practicable. In the few cases of erythemata other than erysipelas examined an organism of the streptococcus class was commonly present in the local wound. In the five cases of lymphangitis examined a typical staphylococcus aureus was obtained in each instance.

In conclusion, we would define erysipelas as an acute inflammation of the epidermis due to the presence of one of the organisms of the streptococcus class, of which the streptococcus pyogenes is the most frequent example. Cellulitis appears to be a strictly comparable inflammation of the cellular tissues, and when the inflammatory processes involve both the epidermis and the cellular tissues the condition of cellulo-cutaneous erysipelas results. Acute lymphangitis would seem to be a less virulent infection due, as a rule, to organisms of the staphylococcus class, with a greater tendency to spread, as its name implies, by the lymphatic system. Erysipelas is not, in the true sense of the term, a specific disease, since it may be produced by a variety of organisms, and these organisms are capable of producing other diseases in other parts of the body.

In the shortness of its incubation period, in the acuteness of its onset-often with marked constitutional disturbances, in its course, in its usual tendency to early and spontaneous cure, and in the nature of the immunity which it confers, erysipelas presents a striking parallel to both acute cellulitis without local suppuration and to acute lobar pneumonia. Nor is it surprising that such similar diseases should all be due, as a rule, to organisms of the same class, the differences in the effect of each disease to the individual being caused by the differences in the localities attacked. It has long been recognised that acute lobar pneumonia may be produced not only by the pneumococcus but also by other similar organisms, such as the streptococcus pyogenes, and that the pneumococcus is capable of effecting an entry and producing disease in other localities than the lung, and we believe that an extension of similar views to the nature of erysipelas constitutes the true etiology of the disease.

We have to thank the members of the staff of St. Thomas's Hospital for permission to make use of their cases.

THE WORSHIPFUL COMPANY OF PLUMBERS.—The Lord Mayor-elect, Sir John Knill, Bart., was duly sworn into office as Master of the Worshipful Company of Plumbers at the quarterly meeting of the Court at Guildhall on Sept. 30th. Before vacating the chair the late Master, Mr. Adrian Pollock, made an interesting presentation to Mr. Charles Hudson. Past Master and present Renter Warden of the Company, of a copy of a water-colour drawing, showing a view of the old Plumbers' Hall, pulled down to make way for Cannon-street Station. Mr. Hudson is the oldest surviving member of the Court, having taken up his freedom and livery in the old hall in 1854. A committee was appointed to examine the note-books and drawings of the plumber apprentices attending the technical classes whose names appear on the Company's register of indentured apprentices.

A CASE OF SYPHILITIC "REINFECTION' NINE YEARS AFTER, WITH SOME REMARKS ON SYPHILITIC "IMMUNITY"

AND A NOTE ON TREATMENT.

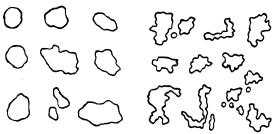
BY HENRI DARDENNE, M.D. EDIN., M.R.C.P. LOND.,
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EMBASSY IN LONDON.

In May, 1897, I was consulted by a gentleman for what he called a slight irritation of the penis. He had, he said, never been ill before. On April 10th of the same year he had had connexion, and on May 9th he noticed a slight sore in one of the fossæ of the frænum. On examination I detected a small superficial ulcer in the left fossa. By gently "dipping" the index and thumb and lifting the sore from the subjacent tissues a distinct indurated base could be felt. His inguinal glands were swollen, hard, indolent, and four or five could be felt in each groin. They were characteristic. Hard chancres in that region have two distinct peculiarities: (1) they are, of course, small and crescentic or fissure-like; and (2) the induration at their base has to be looked for in the manner I mentioned above. I at once put him under mercurial treatment and appropriate remedies were applied locally. The chancre healed within three weeks. Six weeks afterwards he developed a typical roseolous rash affecting chiefly the chest, the abdomen, and the inside of both thighs. His throat was congested and mucous patches were to be found on both tonsils and under the tip of the tongue. He consulted Professor Fournier of Paris, who corroborated the diagnosis and also approved of the treatment he was having. The symptoms rapidly subsided and within a few months he was absolutely free from all secondary manifestations. He was very regular in his attendance for over three years. I then lost sight of him until June 18th, 1906, when he again told me that he was very much troubled with another sore of the penis. On examination this proved to be a small circular ulcer about a quarter of an inch in diameter, situated on the dorsal aspect of the coronal fissure. The base was indurated and this distinctly so. The inguinal glands in both groins were characteristic of a syphilitic adenopathy. He had had connexion of a suspicious nature about five weeks previously, and he told me that he had never suffered from any syphilitic "reminders" since I last saw him in 1901. The ulceration healed within 18 days and the glands diminished gradually in size. In July he again developed a copious roscola, and again his buccal mucous membranes became affected. The scalp this time became the seat of a few irritating papules. These secondary symptoms were the exact repetition of what he suffered in 1897. The same treatment was again prescribed and this until quite recently.

According to the very great majority of authorities reinfection with the syphilitic virus is possible. Sir Jonathan Hutchinson relates at some length the case of a young surgeon who contracted syphilis in 1860 and who was treated by him with large doses of mercury. In 1865 he again contracted a chancre which indurated and was followed again in due course with a distinct roseola and fresh mucous patches on both tonsils. The same patient, curiously enough, suffered from two attacks of small-pox. Rodet mentions two cases, and in these the interval between the first and second infection was four and eight years respectively. Dr. L. Hardie mentions a case, also in a surgeon, who 11 years after the first infection contracted a second chancre which was followed after a few weeks by typical secondary symptoms. All the cases published by Diday are open to caution, for, according to him, the secondary symptoms do not appear after a second infection, but are followed within a short time by gummas, nodes, and deep serpiginous ulcerations, lesions which are tertiary and may simply be the manifestations of the primary infection. Personally, I must say, though it has been my lot for the last 16 years to see and to treat, both in my hospital and private practices, several thousand syphilitic patients, that it is my first experience of such a case.

We must be most careful not to confound a true syphilitic reinfection, whose pancity in numbers only proves the absolute rarity of such cases, with what Professor Fournier calls

"late syphilitic secondaries," such as erosions of the penis, the vulva, and the lips. A recurring roseola, such a roseola appearing 8 and 10 times in the same patient, and this up to the eighth, ninth, and tenth year after the primary infection, may also be a source of error. A gumma of the penis, and above all a herpetic affection where caustic has been used by the patient, may be at times exceedingly nas been used by the patient, may be at times exceedingly puzzling. We all know that in herpes the base is not indurated, the inguinal glands are not affected, or, when so, only to a slight extent, and they lack the features of the syphilitic adenopathy. Polycyclism and microcyclism are the only diagnostic signs between herpes and a Hunterian chancre. The contour of a syphilitic chancre is either circular, ovoid, or crescentic, and more or less regular. On the contrary on examining and more or less regular. On the contrary, on examining with a pocket lens a herpetic lesion sufficiently extensive, the contour is noted to be irregular and geographic-like in outline, and this as if several segments of a minute circumference had actually joined together (polycyclism). These segments are all parts of small circles (microcyclism), like what the segments of a pin's head would be. These two signs are pathognomonic of herpes. The syphilitic chancre, being as a rule a solitary lesion, cannot, obviously enough, give the aspect of a compound one such as herpes. The diagram below speaks for itself. And lastly, in herpes the



Contour of hard chancre.

Contour of herpes vesicles.

erosions are very small, multiple, irregular, and at times disseminated. They are also more superficial, heal more rapidly, and this without leaving any induration.

Hard chancre must not be mistaken for the soft ones. The

soft is, as a rule, multiple and is a distinct ulcer. The syphilitic is usually solitary and a mere erosion. It has no special borders as are usually described in text-books, but on the contrary is on the same level as the adjacent tissues. It has not the proper suppuration of the soft one, and its base is indurated in a manner characteristic of its locality. The glands in the hard chancre are indolent and have no tendency to suppuration. In the soft one the adjacent glands may not be affected at all or there might be only one which is swollen, painful, and very prone to suppuration. The hard chancre is very rarely auto-inoculable, but one chancre may appear within a few days after the other (successive chancre) and be mistaken for an instance of auto-inoculation.

My excuse for going so deeply into these different diagnostic features, which may appear out of place, is simply to show the care I took not to mistake one of them for a reinfection with a hard chancre. Lately a great scientist in this country said: "We know that one attack of syphilis confers immunity during the rest of the individual's life.' The case just related, and a few others which one feels bound to consider as authentic, are in direct contradiction to this statement. We gather that the chief feature of immunity in syphilis is its coexistence with the presence of an active virus in the organism which may confer a refractory state to the skin and mucous membrane to the attacks of the external treponemes. This skin and mucous immunity, however, may not be general and absolute. In vaccination the whole skin may become refractory, yet the cornea may not be so, or one cornea may have become immune and the other not. Most important of all are the experiments of Finger and Landsteiner on men, and according to them there is no absolute immunity in syphilis, and this either in the primary, secondary, or tertiary stages. The majority of syphilitics react in a specific manner to the virus, and this in proportion to the quantity of the virus which they ingeniously injected in subcutaneous pouches. Those in the tertiary stage, as a rule, reacted in a special manner when inoculated with virus taken

from primary or secondary lesions. At the seat of inoculation erythematous patches were formed with a distinct circumscribed hard base. From the foregoing we may conclude that (1) immunity in syphilis is not absolute, but only a relative one; (2) reinfection is possible under certain circumstances even when the tissues are not absolutely sterilised.

Treatment.—The percentage of 3 to 5 of the syphilitic patients developing late formidable tertiary lesions after careful treatment is the result of statistics some 20 years old, and with our better knowledge of the disease this could further, no doubt, be reduced. A long course of treatment is, perhaps, the only means we actually possess to effect this. Every mode of treatment I consider to be insufficient if it has not lasted at least four years. As an example, take 100 cases of general paralysis. In 95 it has occurred in those who have had an insufficiently long treatment-about a year or so-and in only about five of those who had undergone one of at least three years duration. The same result applies to tabes. These figures are the best mathematical arguments in favour of a long course of mercury. Mercurialisation in syphilis can, as Professor Fournier very lately said, be compared to vaccination. The first is a preventive which no one can doubt against the very vast majority of possible future syphilitic manifestations, but, like vaccination, it is only a temporary one, the syphilitics having to be "remercurialised" in order again to become relatively immune for a time more or less long against the influence of the syphilitic virus.

The treatment, according to the same great authority, could be divided into different stages: (1) Immediately after infection a course of mercury lasting for at least two years, and this whether the patient is troubled with reminders or not; (2) a second course lasting the whole of the fifth year; (3) another course of mercurial treatment lasting part of the seventh and eighth year. This, of course, has to be modified according to circumstances and individual peculiarities. Personally, I consider it a perfect heresy to say that two years of mercury is a sufficiently adequate one. It may be enough for the present, but what about the future? How many cases of syphilis have we not all seen who after having been treated according to the most modern methods for this brief period have come to us again after a few years the victims of the most formidable tertiary lesions! Yet they were considered cured and their case a mild one! Patients with mild secondary symptoms, though it may seem paradoxical to say so, are the worst ones, and the reason for this is because, once they are no longer troubled with any outward manifestation of the disease, they, as a rule, abandon all further treatment. On the other hand, those who are afflicted with constant, troublesome, and repeated "reminders lasting a few years and necessitating constant treatment, have more chances to escape the tertiary manifestations and also the formidable so-called parasyphilitic affections. The relative immunity conferred by a mercurial course of treatment is, as I have said already, but temporary. The case of Tushmann corroborates this to the fullest extent. briefly that of a syphilitic woman becoming pregnant seven times. She is not during all this time treated, and each time she gives birth to a syphilitic child. Becoming pregnant for the eighth and ninth time, she undergoes a most energetic course of mercury and has then the satisfaction each time of giving birth to a healthy child. For the tenth time she again becomes pregnant, neglects all treatment as she was considered cured, and once more gives birth to a syphilitic infant who dies at the sixth month. Finally, she is pregnant for the eleventh time, undergoes a course of treatment, and again gives birth to a healthy child. This case needs no comments.

Again, we know that general paralysis, which is the most dreaded syphilitic tertiary manifestation, and all the more so as it is incurable, is most prevalent between the seventh and the twelfth year after infection. Would it not be possible to a certain extent, by a rigorous course of treatment during the fifth and seventh year of the disease to reduce the percentage of those unfortunates who fall victims to that dreadful calamity? It would, at all events, be worth our while to try it and thus give the benefit of the faintest possible chance to our patients. It would certainly be better than telling them that they are "cured" or apparently so for all purposes, after a course of two short years of treatment. They then neglect all the hygienic rules that a syphilitic, I consider, should at all times observe and continue to observe. Let me then again repeat, however trying it may be, that the best safeguard, in fact, the only safeguard, which a syphilitic can possibly have to avoid these irreparable catastrophes, resides, and resides alone, in a long course of treatment which has been methodically carried out, and this at frequent and successive intervals extending over a period of several years. Immunity in syphilis has only a relative signification. It does not, in the least, imply an absolute cure. Mercury, and mercury alone, can, just like vaccination in small-pox, confer a temporary immunity, more or less long, against the specific virus which is in the organism, and which at any time can reveal its existence by inducing fresh syphilitic manifestations; this, at the same time, conferring a relative refrac-tory condition to the skin and mucous membrane against possible reinfection, though reinfection can take place again in tissues which are far from being absolutely sterilised—

i.e., free from all specific treponemes. It is not, therefore, in the least an absolute proof when it takes place again that the patient at the time of reinfection is absolutely free from all specific organisms. We may consider it as a possibility, but not as an absolute certainty.

For these reasons it is just as necessary, if not more, for a syphilitic to undergo a fresh course of "remercurialisation" at successive and even distant intervals as it is for anyone of us at times to be revaccinated. It is, at all events, the only means that we possess at present to secure a more or less

temporary relative immunity to the syphilitic, and thus guard him against the noxious effects of the treponemes of his infected tissues. For, with our present knowledge, we must candidly admit, that we cannot, and ought not to, give a definite answer to the syphilitic when we are asked by him whether he is cured or not, no matter how energetic, long, and scientific the treatment has been. Personally, I have no hesitation in saying that the more I see of syphilis the less inclined I feel to give a positive answer, lest the patient may come back to me at some future time the unfortunate victim of some severe syphilitic manifestation, and thus be the living contradiction to a too optimistic and scientifically unfounded

assertion. This has certainly been the experience, so far, of the vast majority of those among us who have had much to do with syphilis and its special study.

Albany-street, N.W.

A CORNEO-CONJUNCTIVAL BRIDGE: A NEW METHOD OF CATARACT EXTRACTION.

BY NEVEN GORDON CLUCKIE, M.B. GLASG.. OPHTHALMIC SURGEON TO THE GREENOCK EYE INFIRMARY AND THE ROYAL VIOTORIA EYE INFIRMARY, PAISLEY.

SINCE the introduction, about half a century ago, of yon Graefe's method of extracting the lens by linear incision, ophthalmic surgeons as a rule have been content to perform their cataract operations under the conditions laid down by that distinguished surgeon, believing his operation to be the safest and most successful under all circumstances. There are few, however, but will admit that even under the most favourable conditions this method has certain imperfections which expose the result to undesirable complications, the greatest of these being the sudden removal of all nourishment from fully one-third of the cornea, whereby union is delayed and resistance to possible microbic infection is diminished. Many attempts, indeed, have been made to combat these defects, but von Graefe's operation to-day occupies the position that it did on its introduction into ophthalmic surgery. Any improvement which will reduce these risks of infection and the danger of non-union of these delicate structures is of the greatest importance. that end in view, I desire to bring under the notice of ophthalmologists a modification of von Graefe's operation which has given me highly satisfactory results.

It is well known that the present operation for extraction of cataract consists in making a complete section of the cornea through its upper segment. While successful in many cases, it is liable in others to be followed by disastrous results. The modification to which I would direct attention consists in performing von Graefe's operation up to a point that leaves a connecting flap between the cornea and the conjunctiva

about four millimetres broad. Instead, then, of completing the corneal section in the usual fashion, the Graefe's knife is Instead, then, of completing carried further up under the bulbar conjunctiva for from 10 to 12 millimetres and is then withdrawn without cutting through the conjunctiva. We thus have a corneo-conjunctival bridge, which may be broad or narrow, but the broader and longer the conjunctival attachment to the cornea, the greater the chances of success and speedy recovery.

The object in having a large corneo-conjunctival band is to allow of sufficient bulging or gaping of the wound to take place, so that when pressure is applied by a Daviel's spoon on the lower part of the cornea the wound opens sufficiently to allow of the exit of the lens and to close immediately pressure is withdrawn. If the surgeon desires to perform iridectomy at this stage it is best done upwards and inwards; the capsule of the lens may be ruptured either before or after the iridectomy from the temporal side. By these means the operator will feel that he has complete command of the eye, no matter how nervous or restless his patient may be.

I claim that by means of this corneo-conjunctival bridge, the continuity between the cornea and the conjunctiva being maintained, the nourishment of the cornea is not interfered with to the same extent as in the usual method, where complete division is carried out. Moreover, the parts are kept in more accurate apposition, thereby favouring rapid and certain union. From this it follows that the anterior chamber

will be re-established in a shorter period.

The risk of the edge of the upper eyelid getting between the lips of the wound during the operation, or the conjunctival flap turning in upon itself and being caught in the wound, as sometimes happens, is under this method impossible. The likelihood of the iris, the vitreous, or the cortical substance being held in the wound is less likely to occur from the fact that the "bridge" gives greater freedom for thorough examination. In sickness from shock, in local and general anæsthesia, the "bridge" would act as a safe barrier in preventing the usual prolapses. Suturing the lips of the wound I have never seen, nor do I believe in, but such would be unnecessary with the "bridge." astigmatism would be less likely to be produced.

In conclusion, should there be any difficulty in the extraction of the lens, by this corneo-conjunctival bridge method the operator can complete his section, as in the ordinary von Graefe's operation, by the aid of a pair of fine scissors. He can snip through the band of conjunctiva and proceed in the usual way to deliver the lens; but such proceedings in the hands of an expert will be found quite unnecessary. There is no deviation from the usual aftertreatment, but I may remark that in cases operated on by this method the eye may be examined minutely with less risk of doing harm. As I have had the best possible results in all my cases, embracing, as they do, glaucomatous cataract, with fluid vitreous, immature and senile cataract, I have every confidence in submitting the foregoing facts and believe that they will be found of the greatest value in cataract operations.

Greenock.

Fraudulent Dealers in Food.—At the Marylebone police-court recently five tradesmen in the district were punished by fines amounting to nearly £20 for offences under the Margarine Act, a penalty of £7 being inflicted in the worst case. From the evidence given and from the observations of the magistrate it may be concluded that the public do not detect that margarine is not butter because it is coloured to resemble it, and that by selling margarine as butter a profit of 50 to 60 per cent. is realised by the tradesman; that legislation forbidding the colouring of margarine would injure "trade" by warning a section of the public who would not buy or care to eat a fat which proclaimed itself as derived from sources other than the dairy; that the extent to which margarine is passed off as butter is considerable, amounting, according to the evidence of a Marylebone inspector, to about seven cases out of every 40 samples taken by him for analysis. The Marylebone borough council is to be congratulated upon its effort to put a stop to this fraud upon the public, and especially so because it is practised chiefly upon the poorer section of the community under its care which can ill afford to swell the profits of dishonest dealers by paying nearly double the value of the wares purchased.

P 3

Clinical Aotes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF HENOCH'S PURPURA; LAPAROTOMY; RECOVERY.

BY F. C. PYBUS, M.B., B.S. DURH., F.R.C.S. ENG., LATE HOUSE SURGEON, ROYAL VICTORIA INFIRMARY, NEWCASTLE-ON-TYNE.

This case presents features worthy of publication. A girl was admitted to the Royal Victoria Infirmary for severe abdominal pains of an intermittent character, of a week's duration, and the passage of frequent liquid bloody stools. At first sight intussusception appeared the probable diagnosis. On further examination there was no vomiting; the child did not appear very ill. The stools contained no mucus, but were made up of liquid fæces and brownish blood. No tumour could be palpated in the abdomen, which was quite flaccid. Œdematous patches were found at various regions of the body. A diagnosis of urticaria of the mesentery and a portion of the intestine was made. The patient was watched for 24 hours; at the end of this time, no improvement being found, the abdomen was opened, displaying several inches of congested and cedematous small intestine. The abdomen was closed after examining the remainder of the bowel. Some days later a purpuric eruption appeared on the arms and legs, disclosing the true nature of the condition. The notes of the case are as follows.

The patient, who was a girl, aged nine years, was admitted on Dec. 5th, 1907, for pains in the abdomen. A week before admission she came home from school at midday complaining of a pain in the abdomen near the umbilicus and passing into the back. She was given a dose of "composition" and returned to school in the afternoon. The pains were much worse at night. Next day the patient was seen by a medical man and fomentations were applied to the abdomen. The following day the hands appeared swollen but no change of colour was noted. The next day the patient had a dose of castor oil; the swelling of the hands disappeared, but patches of ædema appeared on the shoulders. For the next four days the patient still had abdominal pains, was given further doses of castor oil, and more swellings appeared on the back. On the day of admission several bloody stools were passed.

On admission the temperature was normal and the pulse was 140. The child had flushed cheeks and cedema round the left eye and side of the nose. She was very restless and had diarrhoea. On Dec. 6th she had regular abdominal pains occurring every few minutes, during which time she sat up in bed, cried out, and pressed both hands over the abdomen. Slight cedema was present round the left eye; no other skin lesions were found. There was no vomiting. Nothing of importance was ascertained in the previous or the family history. On examination of the abdomen no distension or peristalsis was seen. There was slight tenderness over the lower half of the abdomen, but no rigidity, mass, or peristalsis was felt. Nothing abnormal was noted per rectum. The urine contained a faint trace of albumin. There was frequent passage of faces, which were composed of a brown watery basis with altered blood, with no definite mucus, and were not foul-smelling. The patient was seen some hours later and was in the same condition. Solution of morphia (miii.) was given.

A diagnosis of urticaria of the mesentery was made, for the reasons mentioned above, and the patient was carefully watched. On Dec. 7th the patient was not quite so well. The abdomen appeared a little fuller and there was thought to be increased tenderness. It was decided to explore the abdomen.

The operation was undertaken by Mr. W. G. Richardson. The patient was anæsthetised with chloroform and the abdomen was opened in the middle line below the unbilitus. On examining the small intestine a section about eight inches long, and situated towards the lower end of the ileum, was found thickened, cedematous, and slightly altered in colour, and clearly marked off from the normal bowel on either side. The corresponding segment of mesentery appeared cedematous. The remainder of the intestine was examined, but nothing abnormal was found. The abdomen was then closed in layers. After the operation the patient

was somewhat eased, but the attacks of pain continued of the same character, and the diarrhosa and passage of blood still persisted. A week after the operation a crop of purpuric spots appeared on the extensor surfaces of both legs and forearms, and two days later the eruption had extended from the legs on to the buttocks. The gums were normal. Periosteal swellings were found on the front of both tibise. For the next fortnight the purpuric spots continued to appear in successive crops at intervals of a few days. At the end of this time no further eruption appeared and the stools were free from blood. The pains gradually became less severe and frequent and finally subsided. The patient left the hospital apparently well on Feb. 8th, 1908. Subsequent inquiry six months later showed that she was in normal health.

The case shows the difficulty in distinguishing vascular lesions of the intestine from mechanical obstruction, and particularly intussusception. The appearance of the intestine was quite compatible with early intussusception having spontaneously become reduced. The case also illustrates the relationship of urticaria and purpura. There must always be considerable difficulty in diagnosis, seeing that Henoch's purpura and intussusception may co-exist and that a portion of adematous bowel may be the exciting cause of increased peristalsis and lead to the formation of an intussusception. I have to thank Mr. Richardson for permission to publish this case.

A CASE OF HIRSHBERG'S FEBRILE INFECTION. By CLAUDE STONGIPHER. M.D.

In several scientific papers Dr. Leonard K. Hirshberg of Johns Hopkins has reported a series of infectious febrile diseases caused by other organisms than the typhoid and paratyphoid varieties of bacteria. In a private communication Dr. Samuel Darling of the Ancon Hospital, Panama Canal Zone, also mentions a number of organisms isolated from Hirshberg's febrile disease. He mentions the bacillus enteriditis, B. lactis aerogenes, and several varieties which cause diseases in animals. Hirshberg in his classic description mentions the following as features of the disease:
(1) Failure of the blood to agglutinate with the usual organisms such as B. typhosus, B. coli, and B. paratyphosus; (2) absence of relapses; (3) absence of hæmorrhages; (4) absence of phlebitis; (5) absence of rose spots; (6) absence of splenic enlargement; (7) absence of mortality; (8) absence of length period of incubation and prodromes; (9) presence of constipation except when the patient is fed upon raw milk diet; and (10) normal blood picture as regards hæmoglobin, erythrocytes, and leucocytes. The following case is reported through the courtesy of Dr. Henry Flood, in whose service it occurred.

An unmarried female, aged 22 years, was admitted to hospital on June 4th, 1909. Her health had been fairly good, and the personal history was negative except for an attack of measles and tonsillitis. The present illness began five days previously, when she missed her period, and awoke on the following day feeling languid. On June 2nd she complained of headache and constipation. Her mother summoned a physician, who said that the temperature was 104° F. On admission the patient had no appetite, felt languid, complained of severe, dull headache, and had griping pains in the abdomen. She was well nourished, the physical signs were normal, the blood examination was negative, and no abdominal tenderness or rigidity was noted. The facies was flushed and dull. The tongue was dry and heavily furred with a white, patchy coat. The temperature was 102.6°. There was no increase in the splenic or the liver dulness, and these organs were not palpable. Agglutination was absent with the five organisms named below. No rose spots were present, although one consultant insisted upon a provisional diagnosis of typhoid fever. A milk diet started a diarrhosa which lasted five days-i.e., until the milk was stopped. The temperature kept near 102 2° for 17 days; then it slowly fell and on the eighteenth day was normal. Recovery was uneventful. Agglutination tests were made with two 24-hours old typhoid cultures and with one bacillus lactis aerogenes, one paratyphoid, and one colon culture.

This case is particularly interesting, because it accords exactly with the 27 cases so far reported of Hirshberg's infection and absolutely fits in with none of the other fevers.

Baltimore, Maryland, U.S.A.

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Rebiebs and Notices of Books.

Severest Anamias: Their Infective Nature, Diagnosis, and Treatment. By WILLIAM HUNTER, M.D. Edin., F.R.O.P. Lond.; Physician and Lecturer on General Pathology and Morbid Anatomy, Charing Cross Hospital; Physician to the London Fever Hospital. Vol. I., with historical schemes, charts, and plates. London: Macmillan and Co., Limited. 1909. Pp. 226. Price 10s. net.

The difficult subject of the causation, pathology, and treatment of the grave and severe forms of anæmia is one which Dr. William Hunter has made peculiarly his own, and we have on more than one occasion expressed our admiration for the services he has rendered to pathology and to practical medicine by his studies, many of which have appeared in controllarms.

In the volume before us he gives a detailed historical account of the various opinions which have been put forward in regard to the more profound degrees of anæmia, particularly that form which has usually been called in this country pernicious anemia, a name which Dr. Hunter strongly deprecates and which he urges should no longer be employed on the dual grounds of the confusion which exists in regard to its connotation and of the effect of such a term upon the patient as applied to the condition from which he is suffering. He traces much of the confusion to the well-known paper of Biermer published in 1871, in which the term progressive pernicious anæmia was first used. This term was afterwards applied, especially by German authorities, to a heterogeneous collection of grave anæmias with more or less obvious causes, among them being included the peculiar idiopathic anæmia described by Combe in 1822 and by Addison in 1849. Dr. Hunter establishes the unquestionable priority of the English description of this form of the disease. The general trend of his own work carried out during the past 23 years has been to establish this form as a nosological entity, to which he would now apply the name of Addisonian anæmia. He regards it as a specific infective disease with a typical mode of onset and a definite site of infection. He has also separated a group of severe and progressive anæmias due to the influence of septic conditions which he distinguishes as septic anæmias. Those he is to deal with in the second volume.

Dr. Hunter's contention in regard to Addisonian anæmia is, in brief, that it is a specific infective disease of hæmolytic nature, and that in addition to the anæmia the glossitic. gastro-intestinal, hæmolytic, febrile, and nervous features which he describes are important and characteristic and are the result of the infective agent, and are not to be regarded as secondary effects of the anemia. Dr. Hunter's work on the hemolytic changes in this form of anemia is too well known and recognised to need any discussion here; the object of his more recent work is to establish the infective character of the glossitic and other lesions associated with Addisonian anæmia. The glossitis he describes is, he maintains, not due to oral sepsis, although it is aggravated by it. Oral sepsis being so frequently present in Addisonian anemia leads to a complication of that condition by an intense "septic amemia" which constitutes a grave handicap to the patient. Dr. Hunter states that the effects of the two conditions upon the bone marrow are entirely different. The Addisonian anæmia heads to hyperplastic and regenerative changes, while the "septic anemia" is depressant to these functions and leads to aplastic changes. He urges that if the conditions leading to the septis complications are removed the prognosis of Addisonian anæmia is improved. The glossitic changes are

described as of varying intensity in different cases: sometimes of an acute and subacute inflammatory character, followed later by degenerative and atrophic changes; at other times more chronic. This glossitis may be one of the chief sources of complaint on the part of the patient, and may be characterised by great tenderness. It is an early rather than a terminal feature, and may be an early indication of relapse. In three cases examined bacteriologically the streptococous longus was isolated in pure culture. The changes in the stomach are a gastritis leading eventually to gastric atrophy, while in the intestine there may be a marked croupous enteritis, patches of congestion and catarrh, follicular enlargement, and patchy colitis. Several plates illustrate the macroscopic and microscopic appearances of these various lesions. Several tables are given detailing the incidence of the glossitic and gastro-intestinal lesions, but we cannot but feel that Dr. Hunter's account would have been of greater value if more detailed descriptions of the glossitic lesions had been given.

He next discusses in detail the pathological changes in the bone marrow, which have been so clearly and carefully studied by Professor R. Muir. On the basis of the changes in the bone marrow and of the characters of the blood. more especially as regards the occurrence of nucleated red corpuscles, Ehrlich has classified anæmias into normoblastic and megaloblastic, the former including the simple anæmias, the latter the more severe-practically, indeed, the whole group to which in Germany the name of Biermer's anæmia is applied. On this view the changes in the bone marrow are regarded as primary, and Addisonian anæmia included as one form—the pathological basis being a megaloblastic degeneration of the bone marrow. This view Dr. Hunter most strongly opposes. He regards the bone marrow changes as reparative and as a secondary result of the hæmolytic processes which his own observations have established. He points out that this classification of Ehrlichs, based on purely hæmatological considerations, simple and attractive as it is, breaks down in practice, since it groups together anemias of widely different clinical characters and of fundamentally different causation. One of the merits of Dr. Hunter's work is that he considers the anæmias from the etiological and clinical standpoint rather than from the purely hæmatological point of view like the Ehrlich school, though it may be objected with justice that in his book he hardly pays enough attention to the morphological characters of the blood as revealed by blood examination during life. In regard to his main thesis, it is difficult to resist the conclusions that the form of severe anæmia described by Addison is a well-defined and specific disease, and that it has to be differentiated from a group of septic anæmias with which it may be confused and with which it is not infrequently associated.

Having thus expressed our admiration for the character of his work and for the logical manner in which he has developed his views, we may be allowed to cavil at hisnomenclature. The title "severest anæmias" strikes us as a peculiar and somewhat inelegant one, as it is difficult to see the necessity for a superlative in nomenclature. Moreover, in regard to the term "Addisonian anæmia" we have always strenuously opposed the application of personal names to pathological conditions. The charts which are liberally distributed through the book are not always easy to interpret. and in the polemical parts of his work Dr. Hunter sometimes indulges in needless repetition, not to say reiteration. We have no other criticism to offer, and it should be added that he gives a bibliography at the end of the volume which should be of great value to workers at this subject, and which adds the utility of a highly important contribution to English medicine.

The Principles and Practice of Medicine. By WILLIAM OSLER, M.D. Oxon., F.R.S., F.R.C.P. Lond., Regius Professor of Medicine, University of Oxford. Seventh edition, thoroughly revised. London: Appleton and Co. 1909. Pp. 1143. Price 21s. net.

THE seventh edition of this well-known and excellent textbook has now been issued. The author remarks in his preface that the three years that have passed since the last edition appeared have been rich in additions to the knowledge of disease and its treatment, particularly in connexion with the acute infections. In this new edition all the more important advances have been incorporated—the epoch-making discoveries in syphilis, the work of the New York Pneumonia Commission, the triumph of the British army and navy surgeons in stamping out Malta fever, the splendid work of Gorgas and his colleagues at Panama, the studies of Strong and his associates in the Philippine Islands, the experiences of the last epidemics of cerebro-spinal fever in New York, Belfast, and Glasgow, and the all-important contributions on "carriers" in the acute infections which are likely to exert a marked influence on prophylactic medicine.

The section on parasites has been carefully revised and has received many additions. In the chapters on the diseases of special organs much new matter has been incorporated, including a new section on acute dilatation of the stomach, a complete revision of the subject of peptic ulcer in the light of recent surgical work, new sections on diverticulitis, parotitis, pancreatic and adrenal insufficiency, cedema of the lungs, Banti's disease, and polycythæmia. In the section on diseases of the nervous system the studies of Marie and his pupils upon aphasia, and the new work on spastic paraplegia, Oppenheim's disease, posterior meningitis, and other conditions have been added.

The earlier part of the section on lobar pneumonia has been rewritten. The remarks on the relation of trauma to this disease are interesting. Professor Osler states that pneumonia may follow directly upon injury, particularly of the chest, without necessarily any lesion of the lung. Stern's observations on this subject are quoted. This observer described three clinical varieties: first, the ordinary lobar pneumonia following a contusion of the chest wall; secondly, atypical cases, with slight fever and not very characteristic physical signs; and thirdly, cases with the physical signs and features of broncho-pneumonia. The paragraphs dealing with the history, etiology, modes of infection, and predisposing causes of diphtheria have been rewritten, and among other important additions the presence of the Klebs-Löffler bacillus in non-membranous angina and in healthy throats is duly discussed.

The remarks on the modes of infection of pulmonary tuberculosis have been recast. Infection by means of the intestines receives the attention required by such an important subject. The researches of Behring, Ravenel, and others are quoted, which dispose of the objection raised by Koch that if infection through the milk of tuberculous cattle were common, primary intestinal tuberculosis should be more frequent. Recent experiments, however, have shown in a striking manner that the lungs act as filters for particles absorbed from the intestines, and the investigations mentioned above have demonstrated that pulmonary tuberculosis can be produced in animals by feeding experiments, although the intestinal surface itself might remain intact.

In discussing the etiology of hypertrophic emphysema Freund's theory is mentioned; this observer maintains that a primary disease of the costal cartilages—a chronic hyperplasis with premature ossification—can bring about gradually a state of rigid dilatation of the chest, to which emphysema is secondary. Recent observations make it probable that there is a group of cases in which such changes occur in

young persons, particularly in the cartilages of the first three ribs.

It will thus be seen that this edition of Professor Osler's text-book has been brought fully up to date. It forms one of the best books for students preparing for their final examinations, and also a valuable work of reference for practitioners.

Southall's Organic Materia Medica. By JOHN BARCLAY, B.Sc., F.C.S. Revised and enlarged by ERNEST W. MANN. Seventh edition. London: J. & A. Churchill. 1909. Pp. 376. Price 7s. 6d. net.

WHEN a book has reached a seventh edition the task of the reviewer is comparatively light; it is obvious that the original intent of the author has been duly appreciated, that the work has found its public, and that the time for detailed criticism has long been passed. But for these considerations there might be a strong temptation to investigate seriously how far this book, which we learn from the title page is designed for the use of teachers, pharmaceutical and medical students, chemists, druggists, and others, was likely to be of any particular service to any of these classes. To educate the teacher is at all times a praiseworthy object, but to place this book in the hands of the average medical student might cause some dismay, since the arrangement of material entails the separation of much that might be more conveniently grouped together. Thus by dealing separately with all seeds, roots, leaves, flowers, &c., there is troublesome repetition of many considerations connected with composition and uses, which do not depend upon the part of the plant employed. It might also be suggested that at the present time there is but scant advantage in a classification based upon the special part of plants employed in medicine, since, for example, there is no resemblance in the chemical composition, the uses, or the preparations of the different roots, woods, or leaves. In fact, this system of classification seems to be a survival from the days when examination questions favoured cram rather than intelligence. But as a compilation dealing with the more important animal and vegetable drugs employed in medicine this work will probably be useful as a book of reference; it avowedly includes almost verbatim official descriptions taken from the British, United States, and Indian Pharmacopæias, and the work of condensation has been effected judiciously. There is an admirable index, and the different type employed facilitates ready reference. The limitation to animal and vegetable drugs must be remembered; the term "organic" is not employed in a chemical sense; synthetic carbon compounds are not included in the scope of this work.

A Study of the Bacteriology of Drinking Water-supplies in Tropical Climates. By Major WM. WESLEY CLEMESHA, M.D. Vict., D.P.H., I.M.S., Acting Sanitary Commissioner for Madras. Assisted by Assistant-Surgeon I. SEETHAPATHY AIYAR, L.M. & S., Senior Laboratory Assistant, King Institute, Guindy; and V. Govindarajn Mudaliyar, B.A., Junior Laboratory Assistant, King Institute, Guindy. Madras: Government Press. 1909. Pp. 346. Not for sale.

ANYONE who has had anything to do with the bacteriology of water in India knows well that outside the special water-supplies of cantonments most of the waters which are used, more especially by the rural population, are loaded with fescal contamination from either man, cattle, or goats. It is hardly credible that natives are so backward in their knowledge of sanitation as to raise no objection to throwing cholera corpses into the only available water-supply of a large village. Frightful epidemics of cholera occur amongst the natives at times, and dysentery is always present to some extent. When we consider the foul water drunk by most

natives we cannot but wonder that the mortality from water-spread diseases is not higher. This circumstance is well brought out by Major Wesley Clemesha in this study of the bacteriology of the drinking water-supplies in tropical countries. Of no less than 18 towns in Madras that are all provided with a protected supply the water on analysis was so bad that no medical officer of health in Europe would pass it as fit for human consumption, and yet a reference to the health statistics of these towns shows that the people (natives) are distinctly favoured as compared with those in rural areas, and that their health is, broadly speaking, satisfactory. There has been little or no detailed research on the bacteriological question as it affects water-supplies in India, and up to the present date the various workers who have made bacteriological examinations have either accepted the European standards as applicable, or have individually modified them to suit what they considered to be local requirements. The method adopted by Major Clemesha is a modification of one described by Dr. A. MacConkey in his work on lactose fermenters 1 and in subsequent papers. It may be briefly stated that by using saccharose and dulcit he divides all lactose-fermenting organisms into four groups and by further fermentations and other tests the individual species are studied separately. In time we may be able to assign a relative value, as an indicator of pollution, to each of these different organisms, and it is hoped by Major Clemesha that the publication of his work will induce officers in other parts of India to carry out their water analyses on these lines, so that comparable results may be obtained. He gives detailed accounts of the methods adopted as a standard in his laboratory at the King Institute,

In Chapter VIII. the effects of tropical sunlight on fæcal organisms in water are well discussed, and the results of a large series of experiments are described in detail, the following general conclusions being arrived at: (1) That the sun has a very powerful action in destroying all fæcal organisms in water, particularly when they are "naked" and not surrounded by mucus derived from the intestine; (2) that all fæcal organisms do not possess the power of resisting the action of sunlight to an equal degree; (3) that it is possible to divide feecal organisms with a reasonable degree of accuracy into groups according to their resistance to sunlight; and (4) that as the action of the sun is more powerful in destroying the fæcal organisms on the surface layers of a large volume of water, it is more practical for the outlet from a reservoir to be near the surface than from the lower lavers.

The relationship of cholera to water-supplies is discussed in Chapter XV. It is noted that the bare cholera figures in any report are not of great value unless certain facts as to the origin of the disease are explained. Thus, although it is true that cholera is spread chiefly by a polluted water. there is no doubt whatever that other methods of transmitting the disease do exist; cholera, for instance, like enteric fever may be disseminated by flies or imported. The principal factor in importation into stations in India are the numbers of pilgrims, beggars, and mendicants who visit the temples in certain districts. The index of purity of any given water-supply of a locality can, however, be roughly gauged from the following returns: (a) presence or absence of cholera; (b) the prevalence of diarrhæa and dysentery in children under five years of age; and (c) the presence of dysentery and diarrhose in the community as a whole.

Part II. of the work gives separate analyses of the

various water-supplies of towns in the Madras Presidency divided into three groups: (1) those towns supplied by water derived from rivers; (2) those derived from impounded surface waters; and (3) those derived from wells or springs. The whole bears evidence of careful laboratory research carried out under the unfavourable climatic conditions of Southern India, and these have only to be experienced by any worker to be appreciated.

LIBRARY TABLE.

The Health of the Nations. (Compiled from Special Reports of the National Councils of Women.) Aberdeen: Rosemount Press. 1909. Pp. 191. Price 1s.—The excellent work parformed by the International Council of Women during its comparatively short existence of 29 years has been of benefit not only to the women of the 22 nations affiliated in the International Council but also to the community at large. In no respect will their influence be more useful to the nation as a whole, as well as to women, than in their recent work in connexion with public health. At the request of the President, the Countess of Aberdeen, the International Council of Women has, during the quinquennial period 1904 to 1909, prepared reports of matters concerning the public health in the respective countries. The Countess of Aberdeen set the lines upon which the reports should be drawn up, desiring special reference to (1) care of infants and children; (2) housing of the people; (3) conditions under which working women carry out their work; and (4) measures in force against tuberculous disease. The practical work done for the prevention of tuberculosis by the Countess of Aberdeen during her residence in Ireland is of course well known to our readers. The health reports submitted by the various national councils have been compiled by the corresponding secretary, Mrs. Maria Ogilvie Gordon, D.So., Ph.D., and are now obtainable in book form for 1s. The reports from the 18 countries form most interesting reading, and have been arranged for easy reference, Mrs. Gordon having translated or condensed where she deemed it advisable to do so. The book also contains the address delivered by the Countess of Aberdeen at the last meeting of the International Council of Women held at Geneva in 1908; and Mrs. Gordon has written a concise and descriptive account of the formation and growth of the International Council of Women, which completes a most interesting record.

Lehrbuch der Magenkrankheiten für Aerzte und Studierende. (Text-book of Diseases of the Stomach for Practitioners and Students.) By Dr. HANS ELSNER. Berlin: S. Karger. 1909. Pp. 490. Price M.12.—The author tells us in the preface that his book is intended to take a middle place between detailed systematic treatises on gastric diseases and short practical text-books. On the whole it resembles the former rather than the latter. It is divided into a general and a special section, the former extending to 200 pages. In this a full account is given of the methods of examination which are employed in disorders of the stomach, including the chemical tests which are given at considerable length. In the second part the order of sections is: gastritis, achylia gastrica, superacidity, gastric ulcer, erosions, hypersecretion, cancer, disorders of motility and dilatation, gastroptosis, nervous dyspepsia, and, finally, a small group of functional defects. The opinions expressed are, on the whole, conservative and not very novel. No allusion is made to the view which is coming into prominence in this country as to the unreality of many of the cases of gastric ulceration diagnosed in women, even when hæmoptysis is present. In the treatment of cancer Dr. Elsner believes that there is no future before extensive operations, such as

¹ Journal of Hygiene, July, 1905.

total and subtotal gastrectomy. Pylorectomy he admits as useful, and likely to prove still more beneficial in the future. The book is well got up and adequately illustrated, and is written in an agreeable style. It is a useful and readable exposition of sound medical teaching in the field with which it deals.

Notes on Dental Anatomy. By G. A. PEAKE. London: Claudius Ash, Sons, and Co. 1908. Pp. 104.—These are the notes of Mr. Peake's lectures, and they contain an enormous mass of information about the teeth. The highly condensed information is generally sound, except that the author's ideas of the development of the jaws are a little archaic, and it is perhaps unwise to call the newt and frog reptiles as he does on p. 26. Mr. Peake says that the notes have been published at the request of dental students, but we doubt the wisdom of granting the request. Students are much too fond of "potted knowledge," and few can retain it beyond the date of an examination. A book twice as long, containing half the facts, would have been more valuable.

Ueber das Verhalten hämolytischer Serumstoffe beim gerunden und kranken Kind. (On the Quantities of Hæmolytic Substances contained in the Serum of Children in Health and Disease.) By Dr. ERNST MORO, Privat-docent and Oberarzt in the Children's Clinic of the University at Munich. Wiesbaden: J. F. Bergmann. 1908. Pp. 100. Price 3s.—It is well known that the process of hemolysis n an immunised animal is carried out by two separate substances—the immune body (amboceptor or copula) and the complement. Dr. Moro endeavoured to ascertain the amounts of each of these substances in the blood of children. He found that in new-born infants the immune body by which foreign blood corpuscles are attacked is present only in small amount, and that there is also a smaller quantity of the complement than in adults, the actual amount varying in different individuals at all ages. The most interesting part of the pamphlet is, however, the comparison of the amounts of complement present in the serum of different classes of atrophic children. The author found that in infants who suffered from atrophy due to inability to assimilate artificial food the amount of complement was very small, whereas in others suffering from alimentary intoxication the amount was actually increased, as in infective diseases. Injection of normal saline solution leads to an increased formation of complement in patients who have good powers of resistance. The failure of this increase seems to be a sign of bad prognosis, and may perhaps prove to be a test possessing some clinical value. Further studie are in progress as to variations in the amount of immune body present in different diseases.

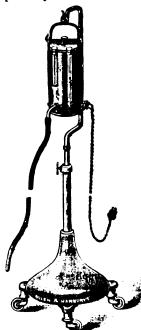
Invalid Cookery: a Handbook of Cookery for the Sick Room, By Miss PEARSON and Mrs. BYRDE. London: W. Thacker and Co.; Calcutta: Thacker, Spink, and Co. 1909. Pp. 39. Price 1 rupee. 1s. 6d.—Take it all round this is an excellent little book. We are particularly pleased to note the sensible remarks about water for the sick with which Part 1 opens. Even in these modern days every medical man will bear witness to the widespread delusion that cold water is harmful for a sick person, and Miss Pearson and Mrs. Byrde have done well to point out that water is most beneficial. In the recipe for barley water, too, they have done right to mention the fact that the expression "barley water" means at least three different kinds of fluid. We notice that in the recipe for white wine whey the authors are led into looseness of expression, for they say that "all the solids of the milk are removed in the curd." This, of course, is incorrect, for the whey contains salts and sugar. This error should be corrected in a future edition. The recipes for

convalescent cookery are for the most part admirable, but we do not think that the directions given for making an omelette on p. 36 would result in the production of a really good omelette. One dessertspoonful of butter would not be enough for two eggs, and the stirring about in the pan would result in a mixture much more like buttered eggs than an omelette. But the art of making an omelette is not to be learned from a book; to describe the proper method of cooking one is almost impossible in writing, a practical illustration is always wanted.

Hew Inbentions.

AN APPARATUS FOR CONTINUOUS PROCTOCLYSIS.

The plan of continuous administration of warm saline solution by the rectum, introduced by Dr. J. B. Murphy of Chicago is in my opinion one of the greatest advances in abdominal surgery which have been made within recent years. Its routine adoption leads, I believe, to more rapid, and certainly to more comfortable, convalescence after cueliotomy, and its beneficial effects in cases of general septic peritonitis would have surprised me had I not been prepared for them by hearing from Dr. Murphy's own lips of the wonderful results which he has obtained in the treatment of this serious condition since the adoption of the practice of continuous proctoclysis. Success in using the Murphy method depends



on attention to detail, and the two most important points are: first, the regulation of the flow from the supply-can by gravity alone, and not by constriction of the delivery tube; and, secondly, the maintenance of the saline at a constant and appropriate temperature. To obviate the latter difficulty I have had an apparatus made which does away with the necessity for constant supervision. The apparatus consists of an electro-plated douche can which holds about five pints. In the front of the can are a thermometer and a gauge glass, by the side of which the can is graduated in half pints, so that the amount of saline entering the rectum can be readily estimated. The saline leaves the can through a delivery tube with a half inch bore, to which is attached three feet of rubber tubing connected with a large rectal tube. Under

the bottom of the can is an electric heater, which can be connected with any electric supply of suitable voltage by means of a flexible cord and wall plug. The can is suspended on an adjustable stand, mounted on castors, so that it can be readily wheeled up to the bedside. I have found by experiment that with a ward temperature of from 65° to 70° F. the solution in the can must be kept at a uniform temperature of 106° in order to insure that the saline enters the rectum at a temperature of from 99° to 100°. The electric heater is so made that if the saline solution is put into the can at a temperature of 106° the temperature remains almost constant so long as the current is switched on.

The apparatus, which has been made for me by Messrs. Allen and Hanburys, answers its purpose admirably and can be left for several hours without any attention.

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THE LANCET.

LUNDON: SATURDAY, OCTOBER 9, 1909.

The Enzyme Treatment of Cancer.1

HAD the enzyme treatment of cancer been able to achieve any of the exploits attributed to it we should expect that the outpourings in the press on both sides of the Atlantic about three years ago would be by now finding justification in the publication of properly authenticated therapeutical triumphs. But all that has followed justifies both the scepticism originally accorded to the statements of the rival discoverers of the treatment and the verdict which quickly followed, that trypsin, whether exhibited with or without amylopsin, is not a cure for cancer. The lapse of time has shifted the attention of those interesting themselves in the alleged relation of ferments to cancer from "trypsin" to "antitrypsin," through the agency of which attempts are being made to obtain a quicker or more certain diagnosis of the presence of the disease; but unfortunately the anticipations aroused by the earlier positive statements of the diagnostic value of what has been styled the "antitryptic" index have been damped by the establishment of the fact that an increase in the power of the serum to neutralise the activity of trypsin is not specific to cancer, but common to many infective diseases, the phenomenon being explained as coincident with the disintegration of leucocytes and liberation of their contents. It would appear that in the history of cancer the chapter on the vogue of the ferments and antiferments will be an exposition of the danger of hastily applying in practical medicine the nebulous notions born of imperfectly assimilated knowledge. Less is known about the inhibition of ferment action than about ferment action itself, and the flight of the enthusiasts from the realm of the ferments to the realm of the anti-ferments appears to be a portent that of all things caution is needed in appraising the value of any positive statements which may be made with regard to the bearing of this line of inquiry either on the treatment or the diagnosis of cancer.

We do not ignore the activity centring round ferments and anti-ferments in their supposed bearings upon cancer; rather would we emphasise the seriousness with which all investigations of the kind should be undertaken, and the need for their conduct or control by persons properly equipped for a most difficult study, beset with more than the average number of pitfalls. Once a positive statement finds currency of the value of any alleged remedy it is difficult or impossible to banish it from practical therapeutics. The patient will insist upon trying it in spite of the protests of the medical attendant. Thus trypsin has come to take a

place in the already too lengthy list of alleged cures for cancer. Although it is as useless as any other reputed substitute for surgical treatment, it may hardly be dislodged from its place in the lay mind until the progress of investigation reveals to the physician and surgeon rational substitutes for, or adjuvants to, operation. With regard to such alleged remedies it is essential, however, that the medical profession should have clear and sound views as to why they have been condemned as useless. The possession of this knowledge and of the convictions based upon it, on the part of those who may be importuned to employ such remedies, is of as great importance to the practitioner himself as it is to his patients. For this reason we have only the highest praise for a painstaking and elaborate report on the systematic submission of 100 cases of cancer to "the enzyme treatment of cancer" during the past three years in the New York Skin and Cancer Hospital. Undeterred by the discredit into which the methods of some of its exponents had brought the theory, Dr. WM. SEAMAN BAINBRIDGE, the author of this report, has fulfilled his undertaking to give the treatment a fair trial, both in operable and in inoperable cases. Many of the patients have been followed to their homes, and nurses provided, after leaving hospital, while everything possible has been done to make the clinical and pathological observations complete. The list of patients and the account of the results given by Dr. BAINBRIDGE are records of the miserable failure of the treatment; but they are monuments of industry which will be of service in the interests of sufferers from cancer. We recommend the perusal of this report to all who may have to inform themselves of the value of the treatment of cancer by trypsin and amylopsia.

We would point out as a proof of the straightforward character of the enquiry that throughout touch seems to have been kept with Dr. J. BEARD, whose views were more particularly being put to the test, and everything was done to meet the requirements of the modifications he suggested in the treatment. Of general interest is the fact that the injection of the most powerful solutions of trypsin is not followed by toxic symptoms assignable to the products of digestion of tissues. As much as 100 minims of the strong solution (special quadruple x) could be given for days without untoward effects. Dr. BAINBRIDGE adds: "From this it will be seen how absurd were some of the earlier claims of 'cares' as well as the strange symptoms and 'terrific' results from the small doses employed." The amelioration of symptoms was in some cases as effectively induced by the injection of sterilised distilled water. No wonder the report concludes that trypsin does not check the cancer process, does not prevent metastases-in short, does not cure cancer. The negative result of the investigation is to be regretted, but the courageous persistence in its conduct in the face of discouragement, and the care with which the tests have been carried out in all particulars by Dr. BAINBRIDGE for the New York Skin and Cancer Hospital, may serve as a model to other institutions. A negative result of this kind has the great value we have indicated, in that the medical profession have before them chapter and verse for their placing no faith in trypsin and none in persons who persist in advocating its use by repeating stories of alleged "ource"

¹ Scientific Report on Investigations with reference to the Treatment of Cancer, No. I., New York, 1909.

when, as a matter of fact, the patients referred to have been proved to have died from the disease. Trypsin has no selective action for cancerous tissue. If when injected into the tissues it is liable to bore its way into a large vessel, thereby causing immediate death from hæmorrhage, it is not a substance which should be lightly administered, even when called for by the sufferer.

The Red Cross Ambulance Scheme for the Territorial Army.

A SCHEME for the organisation of voluntary aid in connexion with the military medical service of this country in case of invasion has recently been issued by the War Office. The principal points were summarised in THE LANCET of August 21st, p. 569. We apprehend that this scheme will be welcomed by all members of our profession who are animated by a real spirit of patriotism—that is, we hope, by every one of us-by all who feel that it is not the duty of a special class of persons only to take their part in the defence of the kingdom, but that everyone without exception, who is in a state of physical fitness, should do what in him lies to safeguard "this blessed plot, this earth, this realm, this England," from attack. We can well believe that all the medical men who served in the Volunteers of a few years back, in whatever capacity, were actuated by such feelings, for there was certainly little inducement of any material kind for our profession to serve in that force, either with the Volunteer battalions of line regiments or with those select and scanty bodies, the Royal Army Medical Corps Militia, or Volunteers, on whom no sunshine of official favour ever shone. The contrast between the old order of things and the recently issued comprehensive scheme of organisation is most marked. We now have a well-designed system, under which any medical man who is sound in wind and limb may find a position ready to his hand, in which he can render service to his country without any serious inroad on his own professional duties or well-earned leisure.

In this scheme it is taken for granted that there will be need for voluntary aid for the sick and wounded in the event of warlike operations being conducted within our shores, and that this necessity is now fully recognised by the public; it is also acknowledged that there is a tendency on the part of societies formed for the purpose of providing this aid (as for most purposes, benevolent or otherwise) to act independently of one another—that is, to overlap and interfere with each other's work; and it is laid down that "efficiency cannot be attained unless all voluntary aid be coördinated." The scheme, accordingly, is formulated on this main principle, drawing some of its details from the Red Cross Society of Japan and the Voluntary Aid Companies in Germany, and is therefore to some extent the outcome of practical experience that has been already obtained The county system of organisation (being the system upon which the Territorial Force is organised) has been adopted. The county associations and the local branches of the British Red Cross Society will provide the "voluntary aid detachments," the duties of which will be to make use of local resources for improvising accommodation and for, so that by relieving each other the private practice of

transport of wounded, and for arranging for their temporary care and treatment until they reach the general hospitals. In the medical organisation of the regular army, the "Expeditionary Force," provision is, of course, made for care of the sick and wounded in the field by a regimental medical service, and in hospital by an establishment of "stationary" and "general" hospitals. The sick and wounded are conveyed from the field to the hospitals at the base or on line of communications by field ambulances and by a special mobile unit, the "clearing hospital," which receives and cares for them until they can be conveyed to the regular hospitals, by whatever means of transport-road, rail, or water-that is available. In the organisation of the Territorial Force, however, no personnel for the "clearing hospitals" is provided; nor is there any provision of personnel for the "stationary" hospitalstemporary hospitals, that is, along routes of evacuation; nor have buildings been chosen fitted for use as "general hospitals," This incompleteness in the scheme was intentional, as it was considered that in these particular departments of medical administration a suitable field exists for the employment of voluntary aid; and, in fact, that "it was eminently to be desired that every opportunity should be given to the British Red Cross and other societies of taking a share in the work appropriate to those who in all civilised countries seek to mitigate the lot of the sick and wounded in war." As everyone is aware, there always has been a very keen desire on the part of the public to alleviate the sufferings of the troops during campaign operations; it is also known to very many that, for one cause or another, the large sums of money subscribed have not infrequently been to a great extent wasted through want of coördination between the official military and the philanthropic lay administrators. The new organisation now comes in to provide this coordination that has been so deplorably absent in the past. The County Association is charged with the responsibility of the organisation of voluntary aid in this country by the formation of "voluntary aid detachments" through local branches of the British Red Cross Society, each county group of these detachments being under the command of a county director. The training of these detachments will be directed towards the work to be done and will include such things as improvisation of stretchers, preparation of country carts for reception of wounded, conversion of farmhouses, public buildings, and, possibly, whole villages or small towns into temporary hospitals, organisation of evacuating stations, arrangements for transport of sick and wounded, and provision of the material and personnel required. It is obvious that for any degree of efficiency to be attained in such an organisation a great deal of work is necessary on the part of the voluntary aid detachments that are to be formed. We believe, however, that there is sufficient patriotic spirit in the medical and nursing professions to provide the required number of physicians, surgeons, and nurses; moreover, it is to be acknowledged that the authorities have shown a real desire to make the conditions of service as little onerous as possible. Thus, each battalion of the Territorial Force has two medical officers attached to it: one is all that is needed to do the work, but two are allowed

each may be interfered with as little as possible. Again, as the ordinary work of a civilian hospital is very similar to that of a military general hospital, it is not intended to call up the medical and nursing staffs for duty in peace time; and the number of these staffs enrolled is much in excess of mobilisation requirements, so as to cause the minimum of interference with the ordinary routine duties of each. This shows a reasonable attitude on the part of the military authorities and an absence of red tape that deserves the fullest recognition.

The scheme for the organisation of voluntary aid in connexion with the military medical service of this country is so extensive and complex that it is almost impossible for anyone, not actually engaged in military medical administration, fully to realise the necessity or otherwise of the several items that go to make up the whole. The county associations are to be prepared to have their general hospitals fully equipped and ready to receive patients in one week from the date of mobilisation. The minimum equipment required is comprised in 45 schedules, extending over 25 foolscap pages, all but two having double columns; the total number of separate items amounts to about 3000. It seems hardly hypercritical to suggest that such an elaboration of detail is unnecessary, and that in a time of national emergency, when England is actually invaded, such things as pepper-casters (Schedule 1), backgammon boards (Schedules 6 and 10), soup tureens (Schedule 18), and art serge window curtains (Schedule 29) might surely be dispensed with. Of the scheme generally, as far as we are able to judge from our own standpoint, we feel bound to express hearty approval; and we commend it to the profession throughout the country as a comprehensive, workmanlike, and feasible scheme of organisation of voluntary medical aid in time of national emergency, which should meet with a ready response from every patriotic member of our profession-Some labour and time must be given, some deduction made from the leisure or recreation, scanty enough as these are already for most of us in actual practice. But the arrangements appear to have been designed expressly to make no greater demands on those who respond to the call of the national need than are absolutely necessary, and this reasonable spirit will, we believe, be met by a like spirit of sober, determined, self-sacrificing patriotism on the part of all ranks and branches of the medical profession.

"Nurture or Nature."

UNDER the very suggestive title of "The Relative Strength of Nurture and Nature," a lecture by Miss ETHEL M. ELDERTON, Galton Research Scholar, on the respective operations of these two forces in promoting or restraining the development of children, has just been published in the Eugenics Laboratory Series of the University of London, and furnishes a convenient illustration of the work which is being conducted in the Galton Laboratory, and of its probable practical value in assisting us to deal with some of the pressing problems of to-day. The object of Miss Elderton's inquiry was to ascertain whether the unsatisfactory conditions

of physical strength and of intelligence displayed by a large proportion of what may be called "slum children" are mainly due to their surroundings or to their parentage; and she commences her discourse by some apt illustrations of the highly complex character of the problem, and of the difficulty of discovering the originating factor. An analogous difficulty, indeed, was stated many years ago by the author of the delightful little apologue entitled "The Cat's Pilgrimage," a story which relates how a domesticated pussy, tired of luxurious surroundings, went forth to investigate for herself the larger world around her. She lost herself in a wood, was desperately tired and hungry, and night was coming on. No saucer of milk could be discovered in any direction, but presently she saw an owl sitting on a bough, and she appealed to the bird of Minerva for aid and consolation. The owl advised her to seek refuge in philosophy, and declared that she herself was at the very time finding consolation under trouble in meditating upon the problem "Which came first, the owl or the egg?" Pussy objected that the problem was necessarily insoluble, but was promptly answered that therein lay its principal advantage. Miss Elderton points out that we might discover that the mentally and physically fitter child comes from the cleaner and less crowded home, and might therefore argue that the spread of such homes is a "condition for national progress." But further investigation might show that the essential condition for such homes is the existence of mentally and physically fit parents, and that the fitness of the children flows after all from the parentage and not from the home. Or, if we took the problem of the employment of mothers, we might discover that employed mothers had the healthier children, and on this ground might oppose attempts to restrict the factory work of women during childbearing years. But on further investigation we might find that such mothers were, on the whole, older and with older children, from whom time had weeded the weaklings. Or we might find the death-rate of innkeepers to be much in excess of that of the clergy, and might overlook the fact that the average age at starting the occupation of innkeeper is higher than that of entering the Church, because to keep an inn is the ambition of many men who begin life in other callings. Or we might inquire into the effect of the drinking of the father on the health and ability of the offspring. We might find that the drinking father had better developed children than the non-drinker; but this might be because the drinker was the better workman, and the superiority of the children an inheritance, or that he earned better wages, and thus, in spite of drink, that his children were better fed. In other words, "Which came first, the owl or the egg?"

Miss Elderton describes the enormous part played by environment in modifying living forms as being of two kinds: a change in the somatic characters following upon the transfer of the individual to different surroundings, or his treatment under different conditions of nurture; or a change in the germ characters of the race, owing to the environment selecting for survival a certain differential class of individuals, and their somatic characters thus becoming more frequent and possibly dominant in the population owing to the strength of heredity. It is with the former description

¹ Dulau & Co., 37, Soho-square, W. 1909. Pp. 40. Price 1s.

of influence that her inquiry was concerned, and it has been conducted by an endeavour to establish the "coefficient of correlation" between certain characteristics of parents and offspring. It is said to have been ascertained, by "a variety of investigations," that the correlation between physical and mental characters in parent and offspring is about 0.45 to 0.50; and the question appears to be whether this relation is appreciably modified by what may be described as accidental causes, such as are comprised within the general term "nurture." Miss ELDERTON shows that it might be easy to attribute to environment a condition which was really a secondary influence of heredity. A weakling may follow an unhealthy trade because he has not strength for a better one; and his offspring may be physically inferior because he is a weakling, and not because he follows an unhealthy trade. endeavouring to find her way out of the various difficulties with which the questions before her are beset, Miss ELDERTON has been able to avail herself of a report upon 1400 school children of the city of Edinburgh, a record of measurements of 72,857 children attending the public schools in Glasgow, and an account of the children in the "special" schools in Manchester. In all these reports some information was given about the home circumstances of the children concerned, and, among other points, about the "drinking," the health, and the physique of the parents; but it seems reasonable to suppose that much of this information might be quite as likely to mislead as to instruct, and it is at least certain that the word "drinking" would be employed in different senses by different observers. The inquiry, as a whole, appears to show that the influence of Nurture is small when compared with that of Nature, that the physically and mentally weaker stocks are reproducing themselves at a greater rate than those of sounder physique and intelligence, and that modern attempts to improve the environment of the children of these weaker stocks are not likely to be followed by any material improvement either in such children or in their descendants. So far as can be seen at present, it appears that improvement in social conditions will not compensate for a bad hereditary influence; and that the problem of physical and mental degeneration cannot be solved by preventing mothers from working, by closing public-houses, or by erecting model dwellings. "The only way to keep a nation strong is to see that each new generation is derived chiefly from the fitter members of the generation before."

The general conclusions at which Miss Elderton has arrived are very strongly supported, on somewhat different grounds, by Professor Karl Pearson, in a lecture appearing in the same series, in which he endeavours to trace the falling birth-rate of Great Britain to what may generally be described as "factory legislation," and to the impediments which that legislation has thrown in the way of employing children as wage-earners, contributing in an important degree to the maintenance of the families of which they form part. He says, in effect, that the child, who was once a helper at a comparatively early age, is now nothing but a burden until that age is long past, and that the more prudent of potential parents decline to take him upon

their shoulders, leaving the business of continuing the race to the comparatively shiftless and unthrifty. He urges that the only way to check the consequent degeneration is by legislation which shall encourage child-bearing among the classes who now avoid it, and indicates certain methods by which this end might be attained, methods such as relief from taxation as a reward of parentage, educational endowments, a modification in favour of respectable parents of the system of old-age pensions, and various other departures from the methods by which "unthinking philanthropy has crippled our power of modifying race fitness." Taken together, the two lectures form a powerful appeal to the more reasoning portions of the community against the practices of the more impulsive, whether these be actuated by ignorant benevolence or by equally ignorant striving after vote-catching, and they at least serve to show the absolute necessity of knowledge as a prelude to useful activity. The custom of "acting foolishly but meaning well" is of far greater antiquity than the poet who denounced it, and we fear it is likely to continue, notwithstanding the excellent work of the Galton Laboratory, for many generations to come. In the meanwhile that work will, we think, commend itself to the judgment of the medical profession, and might be made more generally known than it is at present by a very moderate degree of exertion on the part of medical practitioners. We cannot but add that any endeavours which might be made in this direction would be greatly aided by the adoption of a more lucid and less technical style on the part of those by whom the researches of the laboratory are set forth. To those who would persuade or convince a mastery of the resources of language is as essential as the mastery of his foil is to a fencer; and as long as the examples of FARADAY, of TYNDALL, of HUXLEY, of DARWIN are remembered there can be no excuse in any literature intended for the public for either clothing the teachings of science in abstruce technicalities or for veiling their essential attractiveness. beneath obscurities either of construction or of diction.

Annotations.

"Ne quid nimis."

MEDICAL FEES IN CONNEXION WITH THE CIVIL SERVICE SUPERANNUATION ACT.

GOVERNMENT departments are never liberal in remunerating medical practitioners whose services have been required in some capacity or other, and they have even been known to ignore the question of fees when specifying circumstances under which medical advice must be promptly obtained. The time-honoured maxim that a labourer is worthy of his hire is as true in the present day as in any previous period. Gratuitous advice, however, is constantly being given by practitioners in the cause of charity as well as in attendance on impecunious patients, but this kind of altruism is not free from the risk of encouraging the public to under-estimate the money value of professional service. The question of medical certificates and health reports stands somewhat apart from that of medical attendance. They are frequently in request, they may be troublesome to prepare, they may involve some responsibility, and they may have to be given either gratis or for a very moderate consideration. This is particularly

the case with certain certificates which are to be granted in connexion with the Civil Service Superannuation Act, 1909. Hwery male civil servant over 55 years of age who desizes to be brought under the provisions of the Act must ebtain a medical certificate setting forth certain particulars in a prescribed form. It is understood that where civil servants are in receipt of salaries of less than £150 a year and are entitled to free medical attendance, arrangements have been made by the Government for the certificates to be supplied by the official medical officer, but in the case of officers not entitled to free medical attendance the certificates of any fully qualified medical man will be accepted and a sum of 5s. towards the expense of procuring it will be allowed from the public funds. The members of the Civil Service who benefit under the Act receive annual amounts calculated on the basis of (1) their annual salaries and other emoluments, and (2) their length of service. In the case of those whose position does not entitle them to free medical attendance the effect of the Act is to provide them with what is virtually a new insurance, varying in value from about £170 to many hundred pounds, and it will at once be seen that a fee of 5s. for the requisite medical examination is far below the scale of fees universally paid by the insurance companies. It is, therefore, to be hoped that medical men will not allow themselves to be misled into accepting fees which do not accord with the standard of payment for such valuable insurance work at the present time. Fees ranging from 10s. 6d. to 21s. cannot be considered excessive for making these medical examinations and for granting the certificates.

THE USE OF ELECTROLYTIC FLUID IN SWIMMING BATHS.

An interesting report has recently been presented to the baths and washhouses committee of the metropolitan borough of Poplar by the medical officer of health, Mr. Frederick W. Alexander, in which the evidence appears to be decidedly in favour of the advantages gained by treating the water in swimming baths with electrolytic fluid. The fluid is obtained by the electrolysis under certain conditions of a solution containing magnesium chloride. the result being a solution of magnesium hypochlorite which serves as an efficient deodorant, oxidiser, and disinfectant. The fluid is made by the council's officers for purposes of general disinfection. The first experiments tried were made with the dirty used water in the baths before it was run off into the sewers. For financial reasons, as we have before pointed out, water in public swimming baths cannot frequently be changed, and after a number of people have bathed in the same water, more especially in baths used by persons who have no washing bath accommodation in their own homes, the water must become contaminated with organic matter and, of course, with bacteria. Further, it must be admitted that swimming-baths may be used by persons who are unconsciously or otherwise suffering from communicable disease. There are, in fact, several obviously easy ways by which bath water can seriously be polluted. Mr. Alexander says that changes are noticeable in the water after it has been 24 hours in the baths; it assumes a darkish colour, and if left in the baths grows still darker. At the bottom of the bath a alime tends to form and the bather experiences a feeling of stickiness about his body. In one of the experiments carried out with the dirty used water an excessive amount of electrolytic fluid was purposely added. The water was previously wery dark in colour and the bottom of the bath was obscured. A preliminary test on a small scale showed that one gallon of the electrolytic fluid added to 1000 gallons of the dirty water would just exidise the

organic matter present. Dirty water to which three tis this quantity of electrolytic fluid was added showed after two bours that the organic matter had been exidised, while there was still present an excess of electrolysed fluid. To the bathers, it is stated, there was no evidence that an addition of the fluid had been made so far as feeling was concerned, and the taste of the water was not peculiar. In appearance the water gave distinct signs of having cleared itself, it had lost its dirty, dark-brown colour, and "looked like ordinary sea-water." Chemical examination proved the absence of oxidisable matters, while bacteriological examination showed that after incubation for four days no organisms were found growing in the cultures. The cost of treatment is small, 80,000 gallons of the electrolytic fluid having been produced at the borough electrolytic plant installation during a period of four years, at a cost for electricity and materials of under £160. There can be no doubt that if public swimming-baths can be treated at intervals by this simple, economical, and scientifically cleansing method, and if public experience is able to show that the water so treated is without injurious action on the body of the bather, a very valuable advance has been made in an important branch of public health administration, especially in poor crowded localities.

THE BRAIN OF THE LATE PROFESSOR MENDELÉEFF.

Professor W. von Bechterew and Professor R. Weinberg have made a very complete study of the brain of Professor Mendeléeff, so widely celebrated as a chemist, and issued their account, with excellent illustrations, as the first of a series of anatomical monographs which are to appear under the editorship of Professor W. Roux of Halle. Professor Mendeléeff, or Mendelejew, as his name appears in the German monograph, was a heavy, corpulent man, with long fair hair, blue eyes, ruddy skin, and a short, broad head, the width being 87 per cent. of the length. The outstanding feature of his mental life was his powers of visualisation; his concepts became vividly alive, mobile, and plastic; his vocabulary, although not overflowing, was ample and very apt. His brain was rather above the average in weight (1571 grammes) and the convolutions were comparatively simple in their arrangement. So little do we know of any correlationship between special mental gifts and the surface form of the brain that not even those who have made a special study of the brains of celebrities could have guessed that this particular brain belonged to one of the foremost investigators of his time. Professor Mendeléeff's brain shows three interesting features: (1) the left parietal region is extensive and highly convoluted; (2) the posterior parts of the frontal lobes in the neighbourhood of the second frontal convolution are more massive than usual; and (3) the temporal lobes are small and simple. The two features first named are probably correlated with Professor Mendeléeff's special gifts of visualisation and creative imagination; the third may be associated with his lack of musical appreciation. The authors do well to remind their readers that our knowledge of the genius-brain is still in its "baby shoes" (kindersohuhen). They do not share the despondent view of Professor Stieda, who is convinced that there is absolutely no correlationship between the surface form of the brain and the mental life of the individual, and that all attempts to solve the functions of the brain in this direction are futile. Progress of knowledge has always justified those

¹ Das Gehirn des Chemikers D. J. Mendelejew. Von Professor W. von Bechterew und Professor R. Weinberg. Anatomische und Hntwicklungsgeschichtliche Monographien herausgegeben von Professor W. Roux. Heft 1, pp. 22, eight plates and a portrait. Leipzig: Englemann, 1909. Price 7 marks.

who sought an explanation of form in function, and those who watch most closely the growth of our knowledge of the brain are most sanguine that the explanation of its form will be first found by the physiologist. Whatever the ultimate interpretation of the facts may be there can be no doubt that Professor Bechterew and Professor Weinberg have done a real service in placing on record an account of the brain of the greatest of Russian chemists.

THE INVESTIGATION OF BERI-BERI IN THE FEDERATED MALAY STATES.

MANY investigations into the causation of beri-beri have been undertaken in recent years, but none of them in our opinion have appeared to offer such promising results as that which has been carried out under the direction of Dr. H. Fraser at the Medical Research Institute of the Federated Malay States. This inquiry was begun in 1907, and we published in THE LANCET of Feb. 13th of this year a preliminary report by Dr. Fraser and his colleague Dr. A. T. Stanton. The full report on the clinical portion of the inquiry was issued not long ago as No. 10 of the "Studies" from the Institute, and in it we were promised further details as soon as certain laboratory investigations were completed. This "clinical" report seemed to demonstrate clearly that beri-beri as met with in the Malay Peninsula is caused by the use of white, or uncured, rice as a staple article of diet. Some further interesting details have been recently published concerning the histological portion of the inquiry in the lately issued annual report of the Medical Research Institute for 1908. The chemical and pharmacological parts are, however, still proceeding, and for this reason, as also in view of the fact that it was thought advisable to repeat and confirm certain interesting observations already made, publication of the rest of the beri-beri report has been postponed for the present. Some particulars, however, are given as regards the histological examination of rice. By a particular process, the details of which are given by Dr. Fraser in the annual report, sections of the rice grains were made so as to secure comparison microscopically between white, parboiled, and other rice grains. In the first instance these sections were carefully examined to ascertain the presence or absence of moulds, with the result that in none of the sections prepared for examination could a trace of any mould be discovered. The sections showed distinctly the difference between white and parboiled rice. The latter in addition to the removal of the paleæ had most of the pericarp removed, while the white rice had the pericarp entirely, and the subjacent layers to a considerable extent, removed by the process of milling and polishing. As the aleurone layer in rice grains exists subjacent to the pericarp, it would appear on histological grounds, as had already been suspected, that the white rice is of lower nutritive value than parboiled rice. The chemical examination of the rice had shown that parboiled rice contained three times as much oil as the white rice. Sections of white rice, parboiled rice, and padi were therefore prepared by cutting the softened grains on the freezing microtome. These sections were treated with the various stains employed in the recognition of fats, and it was seen that oil was mainly confined to the layers immediately subjacent to the pericarp. As these layers are practically intact in the parboiled rice grain, and for the most part removed in the white rice, the reason for the difference of the two kinds of grains as regards oil is apparent. Since it might be contended that the treatment previous to milling might have rendered the proteid in parboiled rice more readily available than in the white rice, experiments were undertaken to elucidate this point, but they showed that no difference

rice grains. Thus it was demonstrated that nutritive differences, as regards oil at least, exist between the two sorts of rice; and with a view to examine the problem further from the dietetic point of view it was decided to extend the analyses so as to embrace all the articles of food habitually consumed by the Oriental races in the Malay peninsula. There the investigation now rests pending the publication of the chemical portion of the inquiry. That beri-beri should be caused by a deficiency in the amount of fat in the diet is no new idea. A French writer, quoted by Manson, propounded some time ago the theory that beri-beri was caused by a deficiency of fatty food-that it was, in fact, a "fat starvation." The disappearance of the disease from the Japanese navy after the substitution of a ration of fat pork for some of the rice dietary seems to give some support to this view. If the further investigations now being carried out in the Medical Research Institute of the Federated Malay States should prove this theory to be correct, the prevention of the disease in future, both on land and sea, would thus seem to be a comparatively easy task. The heavy financial losses which fall on employers of labour in the Far East and elsewhere from beri-beri sickness would as a result be greatly reduced, and much prolonged suffering as well as mortality would be prevented.

MEDICINE AND THE DAILY PRESS.

THE time has gone by when the discussion of any medical or sanitary matter outside the columns of a scientific journal should be regarded as an impropriety. On the contrary, with all sanitarians, we welcome the assistance of the greatest instrument for the formation of public opinion which the world has ever known, when that instrument is set in motion in a dignified and careful manner for the dissemination of useful knowledge. The good which the daily and weekly newspapers can do by bringing home to their millions of readers the well-ascertained lessons of hygiene and methods of preventing disease is enormous, and we have often admired the excellent reports of the proceedings of sanitary congresses and other gatherings of experts interested in public medicine which have appeared in non-technical papers. But there is an enormous difference between the temperate presentation to the general public of well-crystallised facts of scientific experience and the serving up of sensational tales of medical "progress" and discoveries that have leaked by devious paths from the laboratory or the lecture-room, and have not only gathered a thick coating of fiction but have lost their original nucleus of truth during their unfortunate passage to publicity. amongst them, because most cruel, are the tales of cancer and consumption cures which are so frequently given editorial sanction, though no attempt has been made to submit them to scientific criticism. Others less mischievous, but still unwarrantable, are the mutilated though highly decorated accounts of some lately devised system of treatment which before its proper application has been fully ascertained is recommended by its enthusiastic reporters as well-nigh a panacea. We need only mention the present fashionable "boom" in sour milk which has resulted from the publication of Professor Metchnikoff's views upon the attainment of old age by the device of policing the intestine with the lactic acid bacillus. When another useful and more recent method of treatment has filtered through similar channels to the public knowledge, horse serum and soda may become a fashionable pick-me-up before breakfast. Radium, of course, is well in the general eye and many regard it as an elixir of life. existed in the availability of the proteid in the two kinds of | The medical man watching the rising and waning of such

foibles of self-treatment may, indeed, feel with Puck, as to the inherent foolishness of mere mortals; but he can hardly acquit the newspaper press of being something more than accessory before the fact to their folly. Certain lay journals have recently devoted attention to the plenary sitting of the International Congress of Medicine for the discussion of appendicitis. Their readers have learned that the general feeling of that debate was against the operative treatment of appendicitis and that a reaction of medical men in favour of medical treatment is imminent. The impression thus given of what happened is quite wrong. What really did concern the Congress was not whether operations should be performed, but whether in certain cases they should be done in the "hot" or "cold" stage, which is. of course, still a matter of opinion. A general newspaper editor could not be expected to have such knowledge of medicine as would make him even acquainted with so technical a matter, in which case he would surely be well advised not to print any article dealing in popular language with the pathology and treatment of a serious and common malady without first passing it under expert and impartial scrutiny.

BRONCHO-BILIARY FISTULA DUE TO SCLERO-GUMMATOUS SYPHILIS OF THE LIVER AND LUNG.

AT a meeting of the Société Médicale des Hôpitaux of Paris on July 23rd M. J. Bruhl and M. Lyon-Caen reported a case in which a rare complication of syphilis occurredbroncho-biliary fistula due to gummatous disease of the liver and lung. The patient was a woman, aged 32 years, who was admitted into hospital on Nov. 20th, 1908, for enlargement of the abdomen and increasing expectoration of sputum of a greenish-yellow colour and bitter taste. At the age of 19 years she had been treated for syphilis at another hospital. Eight years before admission she had an attack of jaundice, and in April, 1907, she suffered from a painful crisis, simulating hepatic colic, with slight jaundice, but stools containing bile. From that time the patient knew that the liver was enlarged. At the same time as the hepatic symptoms pulmonary ones occurred. The patient had suffered from cough for five years and from hæmoptysis for two years. She wasted considerably, so that the symptoms suggested tuberculosis. In October, 1908, she expectorated a large quantity of a viscid greenish liquid with a bitter taste. On admission she was pale and wasted, but there was neither fever nor anorexia. The expectoration was nummular and muco-purulent and of a greenish tint. Under the microscope it showed neither elastic fibres nor tubercle bacilli. On staining with eosin a large number of polynuclear cells and greenish-blue crystals were seen. On macerating the sputum in a normal solution of soda clear greenish liquid was obtained which gave the reaction of biliverdin. Examination of the chest showed on the right side in front a zone of dulness continuous with the hepatic dulness, and behind an area of dulness at the apex, a resonant area in the middle, and an area of dulness in the lower half. On auscultation dry and moist râles of various sizes were heard. The abdomen showed above the umbilious a very developed venous circulation. There was ascites and the liver was much enlarged, its lower border being hard and irregular and descending five or six fingers' breadth below the ribs. In the left lobe could be defined a hard non-fluctuating painful tumour of the size of an orange. There was no jaundice. The spleen was enlarged and palpable. The stools were normal. The urine was of a mahogany colour and contained much probilin. Though the blood did not show eosinophilia hydatid cyst was suspected, but the reaction of complement fixation for

the echinococcus proved negative. Radioscopy showed a half obscure area at the apex of the right lung and two opaque areas—one near the spine and the other apparently in front of the stomach. The hypothesis of hydatid cysts therefore appeared to be confirmed. On Dec. 24th and the following days hæmoptysis occurred. On Jan. 8th the expectoration was of the colour of yelk of egg and contained much bile, and the dulness at the lower part of the right chest had disappeared. As there was evidently a communication between the biliary passages and the bronchi laparotomy was performed on Jan. 30th, 1909. Only an enormous lobe of Spigelius was found; the gall-bladder and bile ducts were normal. Death occurred eight days later. At the necropsy the liver was found very large and irregular and resembled a nutmeg-liver, but in three places hard whitish masses were seen which projected from the surface. The largest was of the size of a fist and adherent to the diaphragm and right lung. It was hard and fibrous and contained a large cavity which communicated with a biliary canal and also with the lung. The right lung was sclerosed and very little pulmonary tissue remained. Evidently the attack of jaundice eight years before was due to a growing gumma which compressed a large biliary canal, and the cough and first attack of hemoptysis were due to invasion of the lung by the gumma. M. Bruhl and M. Lyon-Caen could find on record only three other cases in which a gumma of the liver opened into the bronchi, though the coexistence of pulmonary and hepatic syphilis is well recognised. Mauriac and Fournier have described a thoracoabdominal form of visceral tertiary syphilis.

THE CHILDREN'S INFIRMARY AT CARSHALTON.

IT may be remembered that the Metropolitan Asylums Board constructed in 1902 a Southern Hospital to which convalescent cases could be drafted from its fever hospitals, just as other patients are now transported to the Northern Convalescent Hospital at Winchmore Hill. But circumstances change, and the hospital at Carshalton, which had already cost about £230,000, was never used, being left for six years in charge of a few workmen. Last year the Board determined to open the hospital in good earnest, not for fever patients, who are now well accommodated at Gore Farm, Dartford, but for sick and convalescent children under the age of 16 years. Many were the difficulties in making roads, in converting 100 acres of jungle land into green-sward and vegetable gardens, and in turning the buildings to a use for which they were not originally intended; but a willing committee, under the energetic and public-spirited chairmanship of Mr. E. S. Browne, gradually overcame them, and the new infirmary received the first batch of patients last January, though it was not formally opened by the President of the Local Government Board until June. Even now it has hardly reached its full strength of staff and inmates, but at a recent visit we saw some 735 children, at least half of whom were under the age of three years, collected from the infirmaries, workhouses, and schools of every board of guardians in London, except the City, which enjoys the rare privilege of barbouring but few sick children. It may be that the wide views of the neighbouring country are more appreciated by the staff than by the patients, but even little children are none the worse for being placed in a beautiful scene, while the high ground on which the buildings stand is exposed to sun and wind, which successfully bronze the children and give them voracious appetites. The Board has already provided four medical officers, 100 nurses (including 30 probationers), 19 laundresses aided by two men, and six sewing women. The institution is fitted with electric light, heating apparatus, sewerage, a telephone system, 150

clocks synchronised by electricity, and two electric motorcars for conveying food in hot-water tins from the central kitchen to the 24 bungalow blocks. Children requiring surgical treatment are housed in a two-storeved block which contains a well-fitted operating theatre, and, so far as is possible, patients suffering from various diseases are collected together in groups. Those children who are tuberculous, or suspected of becoming so, spend their days and nights in the open air under lean-to roofs. Boys who have reached the age of ten years are allowed the privilege of becoming scouts and of wearing shoulder knots; we saw some 30 of these scouts under the command of five patrol leaders, two of whom had lost a leg! They are allowed to drill, to build huts, and to make themselves useful in a variety of ways, while a body of girl "scouts" is engaged in sewing and other domestic work. Partly as a result of healthy occupation, the discipline and manners of the children seemed to be excellent, and no punishment more severe than being ordered to bed for a day or two has yet been found necessary. Most of the children looked very healthy, wore a happy expression, and seemed to be on the most friendly terms with the medical officers and nurses.

COSMIC INFLUENCES AND HEALTH.

WHEN regard is had to the number and intensity of great cosmic influences which are at work some wonder may well be expressed that the physical conditions of the world are as steady as they appear to be. It is only recently that the existence of fresh manifestations of forces affecting the earth has been realised, and it would be rash to say that of these manifestations there is no end. A fortnight ago we were told by our telegraph authorities that the whole earth was visited by a great magnetic storm. There were sudden rapid oscillatory movements of the magnetic needle, so erratic in character that the tracing could no longer be registered on the recording sheet, and in many instances the telegraph service failed. The duration of the storm was comparatively short, but whilst it lasted it exhibited an energy which has very seldom been rivalled. The year 1909 has so far been characterised in many parts of the world, including this country, by a very disturbed state of weather which has been uncongenial to everyone's health and comfort, and there are well-recognised authorities who trace this unpleasant fact to sun spots, the most recent of which has been calculated to be hundreds of thousands of miles in area. Magnetic storms have been ascribed to the same solar phenomenon, to a savage outburst of incandescent gases, and the world has been treated to a deluge of electrons. each carrying its electric charge to effect disturbances in the media they travel through, bringing about amongst other things the beautiful phenomena of the aurora and the magnetic storm. All this is interesting, and the interest intensifies when we consider that it is possible that these cosmic forces may have a profound influence on the health. No one can deny the peculiarly distressing effects which an impending thunderstorm has on some people and the relief they experience when the storm has spent itself. Many people assert that they experience a thunderstorm headache and can predict with confidence when the atmospheric stress is about to be relieved. It is also a fact, and not a sustic piece of oredulity, that beer or milk "turns" under these conditions, but no satisfactory explanation appears to be forthcoming of these events. They are, however, not more obscure than the colic, sickness, and diarrhosa which sometimes accompany electrical states. When we follow this vein of thought we become reluctant to deny the accuracy of many so-called superstitions. Is it quite incredible, for example, that some persons cannot sleep unless their body lies in the direction of the magnetic meridian or across it.

as the case may be? The conviction of this idiosyncrasy here and there has been so strong that revolving beds have been made which could be turned to the position conducing best to sleep. No one doubts that by some subtle power the moon influences the tides, and there is the probability of the existence of other commist influences of which so far we know little, yet which may interfere with our well-being. Certainly our wellbeing is disturbed by weather, and in that way, at any rate, we may trace certain disturbances of health to sun spots, since there seems to be little doubt that the meteorology of the earth is affected by them.

WILLIAM HARVEY'S ASSOCIATIONS WITH BIR-MINGHAM AND EDINBURGH.

In another portion of our present issue Dr. D. Fraser Harris, writing from Birmingham, sets forth at some length reasons for believing that in the year 1642 William Harvey spent a day or two at Aston Hall, near that city, in attendance on King Charles I. Dr. Harris has collected much information on other points in Harvey's personal history, and embodied some of it in a presidential address which he delivered last year at a meeting of the Scottish Microscopical Society. On that occasion he said that Harvey accompanied the King to Scotland in the summer of 1633, and that before leaving London it was necessary for him to apply for leave of absence from St. Bartholomew's Hospital and to have a deputy appointed. The King made this journey for the purpose of being crowned in Edinburgh. He entered the city in state by the "West Port," or "Gate," at the western end of the Grassmarket; the procession is known to have thence passed up the West Bow to the head of the Lawnmarket, and then down the High-street and Canongate to Holyrood Palace. Harvey must have traversed this route along with the King, and as the latter remained in Scotland until July 18th it is almost certain that Harvey spent about two months north of the Tweed. Of this there is indirect evidence, for Harvey has left on record the appearance of the Bass Rock "during the months of May and June" in a description he wrote of that island, which he visited for the purpose of studying the development of the embryo in the eggs of the solan-goose. It is not surprising that Harvey makes no allusion in his writings to the religious controversies which at this time were agitating Scotland, for his interests were so entirely professional that he even read Fabricius on generation during the battle of Edgehill.

CHRONIC CHOREA.

AT the Nineteenth Annual Congress of the Alienists and Neurologists of France and the French-speaking countries. held at Nantes in August (a note on which from our Paris correspondent will be found in THE LANCET of Sept. 4th). the subject of discussion in the neurological section was the chronic choreas. Dr. Paul Sainton of Paris accepted Brissaud's definition of chorea as consisting in "purposeless and seemingly causeless involuntary movements, occurring during both activity and rest, and consequently illogical and maladroit." This definition serves to render easy the differentiation of chorea from tic, myoclonus, athetosis, tremor, and rhythmical movements of hysterical origin. The clinical varieties of chronic chorea are Huntington's hereditary adult chores, chronic chores without the hereditary element, chronic Sydenham's chorea, and Brissaud's variable chorea. The pathological anatomy of chronic progressive chorea consists in inflammation of the meninges and convolutional atrophy, with occasional hæmorrhagic foci and areas of softening in the subcortical white matter and basal ganglia; microscopically, degeneration of the cells of the cortex, with interstitial inflammation and vascular sclerosis, is found. In the interpretation of these lesions there is much difference of opinion. Some consider the disease a circumscribed encephalitis, others a chronic diffuse interstitial encephalitis, others a neurogliai, and others still a vascular sclerosis: with one and all the clinical picture is identical. The pathogeny of chronic chorea is still vexed, and Dr. Sainton contented himself with the statement that the lesion of the nervous centres is one which is capable of emancipating the automatic motor centres. As for the familial element in the disease, it would appear to consist in a premature senescence of the cortical cell; perhaps this constitutes a locus minoris resistentiae for an inflammatory or degenerative process. Ohronic chorea must take its place in the category of diseases characterised by the combination of mental and motor symptoms, a combination which implies a physiologicopathological modification of the cerebral cortex. Thus it comes in line with the tics, with epilepsy and athetosis.

THE WEST AFRICAN MEDICAL STAFF.

In accordance with proposals made by the Departmental Committee on the West African Medical Staff, changes in the organisation of the staff are in contemplation which will have the effect of increasing the remuneration of medical officers and their prospects of promotion. In particular, ft has been decided that medical officers who have served for five years and are recommended for a higher rate of salary shall, after passing satisfactorily through a special course of study, be placed on the scale of salary rising by annual increments of £25 to £600. Certain sanitary appointments will also be created, with salaries of £600 rising to £700, or more. Full information as to these proposals may be obtained from the report of the committee, and the despatch from the Secretary of State in which the report was forwarded to the West African Governments. The report and despatch have been published as a Parliamentary paper. 1 Pending the receipt of replies from the West African Governments to the despatch forwarding the report, it has not been possible to revise this paper so as to include the new arrangements.

TEETH AT THE PENZANCE WORKHOUSE.

IN THE LANCET of Sept. 25th (p. 973) we commented upon the permission given by the guardians of Chichester Union to a tramp who desired to retain his tooth-brush and tooth-powder. We are inclined to wonder what would be the action of the guardians at Penzance in a similar case, for we read in the Daily Telegraph of Sept. 30th that "at a meeting of the board of guardians (at Penzance) a doctor recommended that tooth-brashes should be provided for workhouse children, but by a majority of five the board decided not to accede to the request." These enlightened gentlemen did not, perhaps, pause to consider that the physical health of the children placed by the law under their care is to be promoted and maintained by helping them to keep their teeth clean and sound, no less than by enabling them to wash their faces and hands. We pay the Penzance guardians the compliment of believing that they not only allow but compel pauper children to wash not merely their faces and hands but their bodies, and that they believe such abintions to be useful in maintaining health and in preventing future expenditure by guardians upon the care of the sick. The evil effects arising from neglected teeth are, we should have thought, even more obvious than the results of constantly neglected baths. However, the tramp entertained

at Chicester will, if he is well advised, avoid Penzance, and the guardians of that town may be recommended to study the Report of the Poor-law Commission.

THE LONDON MEDICAL EXHIBITION.

THE lines on which the London Medical Exhibition, now annually held in the Royal Horticultural Hall in Vincentsquare, Westminster, is organised are evidently appreciated by the medical profession, for each year there is an increasing attendance of our colleagues, not only from the metropolis but from the country also. The exhibitor, of course, regards the occasion chiefly from a business point of view, but if he does not succeed in gaining a result of practical benefit to himself he is, at all events, instrumental in bringing fresh advances in pharmacology, surgical and hygienic appliances, special foods and beverages to the notice of the visitor. One of the principal endeavours of the promoters of the scheme (that is, to make the exhibition of a purely professional character) has, it is stated, met with the most encouraging results. As far as possible the layman is excluded, and so no appeal is made to him in the shape of side attractions. In short, the exhibition is intended exclusively for the medical profession and this intention has been very generally appreciated. The proceedings this year have been marked by a standard still higher than previous years in regard to the character of the exhibits in general. Amongst the exhibitors were firms enjoying a leading reputation for the success with which they represent the great advances made in the preparation of fine pharmacological products, in the design of surgical and hygienic appliances, and in the manufacture of special foods and beverages. At times the place was animated by the various discussions going on between the medical practitioner and the man ready to supply him with the latest development. Last year the exhibition was attended by over 3000 London practitioners, besides a good number from the provinces, and the attendance this week promises to exceed that record. There seems, therefore, to be little doubt that medical men are glad of this opportunity to make themselves acquainted with the actual shape which the latest suggestions take, and which are likely to be useful to them in practice. The exhibition opened on Monday last and closed to-day (Friday).

THE LUNATIC ASYLUMS OF THE BOMBAY PRESIDENCY.

THE official reports of the public medical services in various parts of the British dominions are not all possessed of equal merit as contributions to medical knowledge. Sometimes they evoke hostile criticism in the local press, and a recent example of this kind is the triennial report on the lunatic asylums of the Bombay presidency. We have not seen the report in question, but it appears that a writer in the mail edition of the Times of India of August 14th complains that its pages are unduly filled with "almost endless tables of attenuated statistics and a considerable amount of other matter dealing with routine details," together with a corresponding deficiency of such descriptive comment on the details of the subject as might supply a kind of drapery or covering for the statistical skeleton. For instance, the report states that the total population of the asylums in 1908 was 1326 for the entire presidency. This strikes the critic as a very small number proportionally, and he complains that there is nothing in the report to show whether this figure represents anything like the whole of the existing insanity in Bombay. In his opinion a good deal more of the disease prevails, but the relatives of the sufferers keep them at home. Since the preceding triennial report was published the lunatic

¹ Cd. 4720, price 24d., through any bookseller.

population has increased from 1188 to 1326, 98 of the newcomers being males and 40 females. Out of the entire number under supervision 200 are classed as criminal lunatics. The information furnished regarding the causes determining the incidence of the lunacy is said to be very scanty. In conclusion, the critic draws attention to the difficulty which the asylum superintendents find in obtaining a satisfactory class of men for employment as attendants. This difficulty, however, does not exist merely in the Bombay Presidency, but is universal throughout India.

THE MUSEUM OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE Council of the Royal College of Surgeons of England has appointed Professor A. Keith and Professor S. G. Shattock to continue the series of demonstrations given in connexion with the museum. The museum demonstrations, which were inaugurated by the Council last year, were largely attended by medical practitioners and senior students, and were the means not only of making the contents of the museum better known, but also indirectly of adding valuable specimens to the collection. The present course begins on Friday, Oct. 15th, at 5 P.M., and is open to all medical students and practitioners on presentation of their cards. The Council of the College has made arrangements for the preparation of a new edition of the Catalogue of the Pathologcal Section of the Museum. The one at present in use was prepared 25 years ago by Sir James Paget, with the assistance of Dr. J. F. Goodhart. Mr. Alban Doran, and Mr. Frederick S. Eve. The new catalogue is to be written by Professor Shattock, with the assistance of Mr. Alban Doran in the Gynæcological series. A new edition of the catalogue of the entozoa is being prepared by Dr. R. T. Leiper; the last edition was the work of the well-known helminthologist Dr. Cobbold. Dr. Leiper has also rearranged and made many additions to the collection of entozoa in the College collection. The acceptance by the Council of the College of the large collection of specimens belonging to the Odontological Section of the Royal Society of Medicine has entailed a considerable structural alteration and extension of the museum. The odontological collection, which has been accepted by the College as a trust, comprises nearly 5000 specimens and requires a special room for its display. It is proposed to add the odontological specimens already in the College museum, many of them being preparations made by Hunter to illustrate his classical researches on the teeth, to the collection now accepted on trust. The combined collections will make the most extensive and most valuable odontological museum in the world and will prove a boon to all English odontologists engaged in study and research. It is hoped that this new section of the museum may be arranged, labelled, and completely catalogued during the present

THE MANCHESTER AND SALFORD SANITARY ASSOCIATION.

The report of the Manchester and Salford Sanitary Association for 1908, which has been recently issued, shows that the work of the association is making good progress. Various matters affecting health came under review during the year, two of them being Nature Teaching in Schools and the Town Planning Movement. It was in Manchester that the town planning movement was started, and it still receives the attention of the committee, although the Bill introduced by Mr. John Burns, President of the Local Government Board, to give town councils special powers with a view to preventing the creation of slums, has been to a great extent modified. The supply of cottage baths and washhouses has not been advanced beyond the two that were established

many years ago, notwithstanding their great and continued success. It is consoling, however, to learn that a deputation to the Baths Committee was told that a good deal of work in the adoption of sites had been done, and that an early extension of the scheme may be looked for. In the meantime money has been lavishly spent in the erection of swimming baths with luxurious accommodation and decorative exteriors, but it is a question whether these magnificent structures add as much to the comfort and health of poor families as the unobtrusive baths and washhouses hidden away in unimportant streets. Simultaneously the increase of the rates seems to be forgotten, as well as the invariable sequence that slums increase as the rates go up. Mr. William Thomson, F.C.S., is engaged very usefully for the association in an examination of the quality of the gas supplied from the gasworks. There has been great deterioration of it since the introduction on a considerable scale of water-gas without any corresponding reduction in the price and with increased risk of gas poisoning. The committee recently passed the following resolution, viz. :-

That having regard to the acknowledged deterioration of the physique of a large proportion of our people this association urges upon the authorities that the time has come when the youth of the country should be required to submit to systematic physical training up to the age of 22.

The association recommends service in the Territorial Army as one means of effecting the desired improvement of our national physique, and there appears to be no doubt that military training and drill are more successful in improving the physical condition of a young man than the mere playing of games. It does not speak well for the general interest in the association that the list of subscribers is so small. This is to be regretted, for if a considerable proportion of the people could be persuaded that the sanitary condition of the city is a matter of public concern sufficient numbers of small subscriptions would come in to put the association into a satisfactory financial position. "Health Lectures for the People" are still given and published at a very cheap rate, and at the conclusion of the annual meeting Mr. H. W. Norman, L.D.S., delivered an admirable address on "The Condition and Treatment of the Teeth of our Public Elementary School Children."

A RETURN prepared by the Inland Revenue authorities shows that the numbers of licences at 5s. each issued to makers or vendors of patent medicines in Great Britain (the duty not extending to Ireland) were in 1898-99, 33,992; in 1899-1900, 34,554; in 1900-01, 34,698; in 1901-02, 35,364; in 1902-03, 36,366; in 1903-04, 38,462; in 1904-05, 40,129; in 1905-06, 40,734; in 1906-07, 41,353; in 1907-08, 42,272; and in 1908-09, 42,563.

AT a meeting of the Medical Society of London to be held on Monday, Oct. 25th, Dr. F. W. Hewitt will read a paper on the Need for Legislation in Regard to Anæsthesia and the lines upon which such legislation should take place. As the whole question is one of great importance to the medical profession and one on which opinion is sharply divided an interesting debate should follow.

THE Governor of Mauritius in a telegram to the Secretary of State for the Colonies has reported 26 cases of plague with 14 deaths during the week ending with September.

THE death has occurred of Dr. William Rivers Pollock, obstetric physician to Westminster Hospital, who was 50 years of age.

WE regret to record also the recent death of Dr. Edward Clapton, formerly physician to St. Thomas's Hospital, who died at Lee in his eightieth year.

THE POOR-LAW MEDICAL SERVICE: COMING LEGISLATION.

BY WILLIAM HOLDER, M.R.C.S. Eng., J.P.,

MEDICAL OFFICER AND PUBLIC VACCINATOR FOR THE SUTTON DISTRICT OF THE SCULCOATES UNION; LATE SURGEON TO THE HULL AND SCULCOATES DISPENSARY.

THE speeches in the House of Lords on the recent Reports of the Poor-law Commission mark "footprints on the sands of time." The head of the State Church, the Archbishop of Canterbury, was roused to press that the conclusions of the Commissioners should not be disregarded or delayed; and the leader of the Government in that House, Lord Crewe, said significantly: "The system [Poor-law Act Regulations] of 1834 had reached its limits, and if there was to be any real improvement we must look to something else," and followed his words by the declaration that "this was a vast subject, but not too vast to be dealt with within the immediate future." This is all the evidence we need that vast changes affecting the medical profession are imminent. It therefore behoves the profession, as a trusted body of the State, to interest itself in the matter, to study the subject, to determine its policy, and to advise the State on matters in which nearly 4000 medical men are personally concerned, and about which they have the most intimate knowledge. The members of the medical profession as a general body may then be asked to act as faithful allies to their colleagues of the Poor-law Medical Service and to give active support to any well-considered scheme that may be forth-coming to put the Poor-law Medical Service in a more efficient position.

The two reports of the Poor-law Commissioners are very searching. Some member or members of that Commission must have had practical knowledge of the difficulties and deficiencies under which Poor-law medical officers conduct their efforts and must have effectively impressed the signatories of both the Majority and Minority Reports with the gravity of the position and the needs for recognition and help of the medical part of Poor-law management.

Whoever took this line, let us not forget to be grateful.

On all hands the importance of these two reports is

granted, and this by no class more freely than by the many boards of guardians who have, on the whole, humanelyfar as their knowledge went-carried out the system of the 1834 Act. These boards have, at any rate in some of our larger cities, endeavoured to meet, by extended help to the poor, the developments which increased wealth and wider intelligence have given to the country. In the treatment of the sick, unfortunately, many boards have made no movement, but since these reports have been published numerous guardians have read them and having enlightened themselves are showing a willingness to profit by the lessons. Certain boards of guardians have submitted questions to their medical officers asking for information and for suggestions as to the management of medical matters and the regulations of areas—a thing never done before. As all amendments of a law must be founded on experience of defects in its working, it may not be unhelpful to lay before the profession a series of queries put by one board of guardians to the district medical officer, and the replies of that officer who has had charge for over a quarter of a century of one of the largest districts in one of our great cities.

Letter from the District Medical Officer of Medical Relief District No. —— of the —— Union to the Clerk of the —— Board of Guardians.

MEDICAL RELIEF DISTRICT No.

MEDICAL RELIEF DISTRICT No. —.

[The letter commences by the medical officer explaining that it has been his duty as a member of the Council of the Poor-law Medical Officers' Association, not only to read the Reports of the Royal Commission, but to attend a National Conference of the Poor-law Medical Officers' Association at which Commissioners who signed both Reports read papers expounding the medical aspect of their respective views, and also to read the memorandum of the chief medical district inspector of the Local Government Board. He has thus learnt something of the tendency of the legislation which is coming. But if the Commissioners, after five years of industrious endeavour, admit their conclusions are incomplete, it cannot, he submits, be expected that within the limits allowed he can cover the complex medical problems which are involved in the questions. He continues:—]

The most prominent trend of change in the District Medical Service is to bring the district medical officer's work into relationship with that of the sanitary medical system of the locality in which he acts. The management of poverty and its disease causes is so blended that the separation of the district medical officers from the control of the

guardians is unlikely; but a practical defect is felt—viz., that district medical officers see insanitary causes, such as filthy homes, defective privies, blocked and broken sinks, verminous dirty persons, slovenly dirty mothers, in untended houses in which are children with suppurating eyes, and even contaminating diseases, such as chicken-pour and other important causes, inviting, originating, and continuing disease; and yet though seen and deplored by district medical officers as a cause of poverty, they (the district medical officers) are out of the machinery which removes them. They have no duty to report them to the sanitary authority.

This evidences want of some official link between two departments doing related yet now separated work. There should be some connexion between these two offices in the interest of the ratepayers as well as the poor themselves.

I answer the detailed questions:—

QUERY 1.—So far as your district is concerned, do you think that

doing related yet now separated work. There should be some connexion between these two offices in the interest of the ratepayers as well as the poor themselves.

I answer the detailed questions:—

QUERY 1.—So far as your district is concerned, do you think that the present boundaries and arrangements are conducive to a satisfactory administration of relief to the sick poor?

Answer 1.—The arrangements are not conducive to a satisfactory administration of relief to the sick poor.

(a) The sanitary services are too related in work to be separated in action.

(b) When a severe epidemic arises some automatic method of supernumerary temporary assistance should be provided; and as the district medical officer is the first in the field to note an epidemic originating and advancing, and the best qualified judge of its causes and its virulence, he should be officially authorised to send his valuable information to the sanitary authority, otherwise the sanitary authority can only generally be informed of a coming epidemic by an advancing death-rate or defective school attendance.

(c) The closing entirely of the relief office for so long a period as from Saturday noon to Monday morning is a defect to be remedied. I am making no reflection on relieving officers. They are kindness and consideration itself to the poor, and in this Saturday to Monday interregnum, when they are found, they readily sacrifice their leisure to meeting all necessities; but many cases occur when poor persons do not know where to get orders for medical attendance. The district medical officers, if they hear of the case, attend without an order, but the poor have some difficulty in understanding this.

(d) "Not on the book" orders should be recognised and paid for as extra medical work. There is no doubt much suffering caused to honest poor persons, temporarily down on their luck, unable to pay reasonable charges for efficient medical attendance, who are unable to obtain infirmary or dispensary orders. These people might fairly have medical attendan

medical omeer when the outer fringe of his district, if bordering on open lands, has its population greatly increased.

(ii) In fixing the remuneration for each boundary the poverty of a district should bear reasonable relationship to the number of its likely sick poor.

QUERY 2.—Is the present arrangement for the supply of medicines, dressings, &c., satisfactory in the interests of the patients and suitable to their necessities? Would you advocate the establishment of district dispensaries, to be maintained by the guardians, where sick paupers could be supplied with medicines, &c., on the written recommendation of the district medical officers?

Arswer 2.—The present arrangement for the supply of medicines, dressings, &c., is not satisfactory in the interests of the patients or suitable for their necessities or cure. The modern aseptic dressings, atc., is not satisfactory in the interests of the patients or suitable for their necessities or cure. The modern aseptic dressings, atc., is not satisfactory in the interests of the patients or suitable. For their necessities or cure. The modern aseptic dressings, actiseptics, gauzes, &c.; the modern mapticines; the serums, liquid animal extracts, new chemical synthetical compounds, and other modern expensive helps, which shorten many illnesses, are a serious cost, one prohibitive to the district medical officer. This unreasonable charge on the doctor invites neglect or dulls his perception of the extensive and proper use of new remedies. It is but natural, he feels, that the guardians should pay him at least the average of what the average patient costs in medicines and appliances in the house if they wish him to treat his cases according to modern methods. I have tried to keep my conscience clear and to forget my pecuniary penalty for doing right, but I must say that when I have had to send a pound of absorbent wool, a roll of absorbent whole, a roll of compan

be paid by them.

The foregoing are reasons why the establishment of district dispensaries for the dispensing of drugs and appliances, found and paid for by the guardians, is necessary. I would, however, like emphatically to say—such places should be dispensing places only, and not outdoor departments, that is, dispensing and consulting establishments combined; for there the slok, siling, weakly, malodorous, expectorating hordes are huddled together for long periods, waiting, in depressing companionship for consultations, later to be huddled into other seats

to wait a further long period for medicines to be dispensed. Definite consultation hours at the surgery of the district medical officer is a ranch better arrangement. The medical officer is to be found there; he gives two hours daily at his house, 9 to 10 in the morning, and 5 to 6 in the evening, for consultations, taking messages, and giving certificates. At the dispensary only one hour daily is generally given. The sick at the surgeries of the district medical officers are better separated than at the dispensaries, and after seeing the medical officer they would walk a little way to the dispensaries—which should be central to the districts concerned—and there get their medicines from a dispenser. At the surgeries of district medical officers patients are less huddled together. The doctor can give them more time and attention and keep better continuity with the case, and, what is more important, in emergency the sick quickly get at him at any hour of the day or night at his known residence. There is no need to wait until the dispensary opens again to communicate with him.

QUERY 3.—Can you suggest any improvement in respect of the subject-matter of Query No. 1 or Query No. 2? If so please state fully in what direction.

Asswer 3.—My suggestions are as given above.

QUERY 4.—Do you consider the ciercal work attached to your office is unnecessarily extensive? Do you carry out fully the requirements of the Orders and regulations of the Local Government Board, &c., in respect of the following matters?

(a) Sending of notices to local health authority in case of contagious, infectious, or epidemic diseases. (A.O., February 12th, 1879.)

(b) Keeping of the "District Medical Officer's Relief Book." (A.O., February 28th, 1886.)

(c) Giving of certificates specifying the ailments of paupers attended by you, when requested by the relieving officers or the paupers themselves. (G.O., July 24th, 1847.)

omcers or the paupers themselves. (G.O., July 24th, 1847.)

INVER 4.—Undoubtedly some clerical record of our work is necessary, but some of the present records are unnecessary, irksome, and take up time that might be more profitably used. I have had over 30 years' experience of parochial and parish district and hospital work in many counties in England. I never knew a parish medical registers are not examined properly at the board room hence the doctor feels his time is too important to be wasted, and thinks it is not necessary to fill in every visit or bottle of medicine. He feels that a record of visits, of medicine given, or of surgery attendance generally is sufficient if it shows reliable attention. In the days when unqualified assistants were kept it might have been necessary to use red instead of black ink to distinguish between his work and the principal's, but in these days, when all visiting assistants and partners must be fully qualified, and have to be accepted as deputies, it is needless, trictly attend to (a) so far as the Infectious Diseases Notification Act requires; I attend to (b) except that my dispenser copies from my daily visiting book and keeps the record of medicines dispensed; and (c) Yes.

**Exay 5.—Any general observations, remarks, or suggestions as to

from my daily visiting book and keeps the record of medicines dispensed; and (c) Yes.

Query 5.—Any general observations, remarks, or suggestions as to the treatment of the sick poor would be appreciated.

Answer 5.—It is only fair that the district medical officer should be paid by salary for his professional services, and not have to find drugs and appliances. It is better he should be a part time officer in general practice—a doctor of standing and experience in the district—that is, if he is to have influence with the dirty and improvident. The knowledge of the usefulness and indusone of the district medical officer over the poor is much misunderstood. His work is as often to stay poverty as it is to cure disease. Poor patients do accept advice from the doctor they would refuse from others; they look on him as their friend, confidant, and adviser. He understands their misfortunes as well as their ills, and their weaknesses of temperament, which form the key of many of their improvident deficiencies. They trust him because he is by training no supercitious puritan in judging them. This reliance on the doctor and his disinterested advice could be used to the greatest amelioration of poverty and sickness. He might be made what the State has wisely directed school medical officers to make themselves—viz., a "pervading influence." His education and professional skill gain the respect, I had nearly said reverence, of his poor, and should demand that he be recognised as a man worthy of proper reward. His work does not begin at 9 A.M. and end at 5 P.M., as ordinary workers, with half Saturday and Sunday for rest. His duties begin at 9 A.M. on Monday morning and continue might and day to the following Monday. He has no yearly holiday allowed. This injustice has never been squarely faced by guardians. Services begun by the profession, as benovolent aids to the poor, have been accepted as a right. The strained labour of the profession has been accepted without scruple. I respectfully hope the guardians will not allow

mow that, without the interference of the patient district medical officers, the inquiries of the Commission have called out against this abuse.

he salary should be adequate and not stinting. The work is heavy, exacting, and noble. Properly recognised, it is certain the service will see removed the reproach, "he is only the parish doctor." This is never uttered by the poor they serve, but by the richer people who do not see his work or sacrifices in a field where he has to do all the details, which in Lospitals nurses and attendants do for the medical man.

15 must never be forgotten that medical skill is, and will ever be, diagnostic, and not mechanical or stereotyped. Cases cannot be treated wholesale; each case requires original research and thought. Each case is a problem in itself; proper diagnosis is the key to short illness, and proper treatment by food, medicine, and sanitation shortens the period of parish relief in acute cases and prevents its recurrence.

In the Poor-law Commissioners' reports the suggestion of blending parish patients with contributory patients in a part-charity supported inattution will do harm. The suggestion is the outcome of the London system of contract practice, and of club practice in the provinces, both practices unworthy the profession and the patients. If such are established they will increase the

area of pauperism, degrade those who can pay, and stop the flow

area of pauperism, degrade those who can pay, and stop the flow of benevolence.

I venture to suggest much more generous doles to respectable aged widows and mes, especially valetudinarians. The most helpful thing would be the building of self-contained two-storey houses with open gardens, such as I have seen in Holland. Then, after classification, two or three persons of the same sex could be placed rent free in one of these domiciles or flats. The combined allowances of three persons would be spent more economically. For instance: one fire, one pie, one boiling of potatoes, one light; and many other things might be enumerated where one would serve three persons collectively better than three single persons in three rooms. Another advantage of this conjoint domicile would be that all would have companionship and show compassion one to the other in the passing sicknesses of ago. They would give ordinary nursing to each other in slight indisposition. One or two rooms at the end of the buildings could be made into wards for more serious cases, requiring more serious nursing. If this was not more economical, it would at least take away the self-reproach one often feels because the stinted allowance given to respectable out-door aged men and women paupers is insufficient to keep them well, or to help them when they are lik.

More power is needed to get cleanliness in some houses and from some parish patients. Slatternly homes beget slatternly children, and they become slatternly mothers of future slatterns. Whilst seeing failure in dragooning the indolent into cleanliness, a system of loans of cleaning materials and of payment for scrubbing and whitewashing I am sure would have a two-fold effect. It would make the recipients of the loans feel they were earners, and often teach good habits, some of which would stick.

The present method of mending disease and leaving the originating causes to act again is indefensible. The Poor-law medical offices.

they were exercis, and often teach good habits, some of which
would stick.

The present method of mending disease and leaving the originating
causes to act again is indefensible. The Poor-law medical officer
as a sanitary adviser could get much carried out better than
other officers. If tactfully managed the poor would accept
advice from the doctor better than from any other person.

I would like to say how impressed I am with the good effected in
placing out nurse children with aged women. I know several
instances where the foster boys have been all a son should be to
an aged mother and where the woman has lavished her
solicitude on the children's morals and worldly improvement
with the greatest success. In fact, I have never known but one
failure to get the greatest benefit and blessing to child and
foster-parent in these cases.

May I lastly appeal to the guardians to increase the fee for attendance on parish patients at accouchements. It is not fair or
reasonable to pay a fee below that paid to the midwife. The
task is not the ordinary attendance. The work is done with
often little light. The patient has few clothes and no cleanitness. The doctor sits hour by hour through the silent watches
of night, saving life and helping the weak and suffering, and
may demand a reasonable reward. District visiting nurses
should be provided for accouchement cases. Such nurses should
be exclusively used for labour cases. They should not be
employed in drossing wounds or ulcers or in surgical cases.
They should act solely under the direction of the doctor in
charge. It may be accepted as a fact that these nurses have a
greater influence on the habits of the poor than is supposed.
They shoult he helpless how much nicer home is when clean,
and their influence for good in many ways reaches far outside
their passing visit and example.

Finally, the fees for extra surgical work require readjusting.
I have written fully because I feel legislation is coming on some
of these lines.

Neither the questions of the Board of Guardians nor my answers, which in this publication of them have received a certain amount of emendation, cover the whole subject, but they mention many practical points and suggest some I submit them as a contribution to the comremedies. plete discussion of the subject to which the columns of THE LANCET are clearly open, and with the idea that they may stimulate others who are directly interested towards some prompt and common course of action.

OPENING OF QUEEN ALEXANDRA SANATORIUM, Davos.—The British sanatorium in the Alps, for the successful completion of which the unceasing labour of the local secretary, Mr. H. C. Wrinch, has mainly to be thanked, will be open for the reception of patients at the end of this month, although the inaugural ceremony is to be postponed until the winter season. On the visiting staff are Dr. W. R. Huggard, H.B.M. Consul in Davos, Dr. Arnold F. Bill, and Mr. Florian Buol; and the resident staff consists of Dr. Joseph W. Noble as medical superintendent, and Dr. James Fairley as junior resident medical officer. The matron, Mrs. Teesdale, who for some years past had the entire management of the Davos Invalids' Home, will be assisted by a small staff of English nurses with home sanatorium training. Although each patient occupies a separate room, the inclusive charge is only to be 38s. per week. Only early or convalescent cases are eligible. A large number of applications having already come in, candidates should not delay obtaining forms from the local secretary in Daves, Mr. H. C. Wrinch, or from the honorary secretaries in London, Dr. William Ewart, 31, Upper Brookstreet, W., and Mr. D. A. F. Vesey, 3, Camp View, Wimbledon Common, S.W.

THE VACCINATION ACTS AND THE GROWTH OF "CONSCIENTIOUS OBJECTION."

By LEONARD B. CANE, M.B., B.C. CANTAB., M.R.C.S. Eng., L.R.C.P. LOND.,

ASSESSMENT PETEROLAN TO THE PETERBOROUGH INFIRMARY; DEPUTY PUBLIC VACCINATOR FOR THE PETERBOROUGH UNION,

THE effect of the recent changes in the Vaccination Acts upon the number of vaccinations has been already very marked. An examination of the returns for Northamptonshire reveals an enormous increase in the relative proportion of unvaccinated children, and there would seem no reason to doubt that the same tendency exists throughout the country.

The history of vaccination since its discovery as a prophylactic against small-pox over a century ago is so well known that I need only mention one or two salient points. In 1718 inoculation with small-pox virus was introduced from the East and became for a time very popular, especially after its adoption by members of our Royal Family, but unfortunately the artificially produced small-pox was found to be not only infectious but by no means free from danger to the subject of inoculation. For some time, however, cow-pox had acquired the reputation amongst West-country farmers of affording protection against the more serious disease; and in this belief one of them, Jesty by name, in 1774 actually inoculated members of his family with fluid from cow-pox vesicles. It was not, however, until 20 years later that this tradition was made the subject of a scientific inquiry by Dr. Jenner. In 1798 Jenner published the results of his investigations, and was supported two years later by leading members of the profession in London, and in 1802 by a Committee of the House of Commons. In 1807 the Royal College of Physicians issued a report based upon the results of several hundred thousand cases, to the effect that the protection afforded by vaccination, though not absolute, was a great security against the incidence and severity of small-pox, and that the process was in no respect injurious. Similar reports were issued also on the continent, with the result that in Denmark vaccination was made compulsory in 1810, in Sweden in 1816, and in Germany compulsion was subsequently extended even to revaccination. In every country of Europe and in America the practice spread rapidly. In England, however, it was not until 1840 that an Act was passed to provide the means of vaccination at the public expense, and even then compulsion was postponed for another 13 years. In 1853 an Act making postponed for another 13 years. In 1900 at Act making vaccination compulsory was passed without opposition and it continued in force, with minor alterations and amendments in 1858 and 1867, until 1898.

By the Act of 1867, Section XXIX., every parent or

By the Act of 1867, Section XXIX., every parent or guardian of a child was rendered liable to "a penalty not exceeding twenty shillings" for neglect to take a child to be raccinated and subsequently inspected, unless he offered "a reasonable excuse for his neglect." It was not sufficient to have a general objection to vaccination, but the parent had to show by legal evidence satisfactory to the magistrates that he had good ground for believing that in that particular case vaccination would be injurious.

In 1898 the Royal Commission issued its report, as a result of which calf lymph was substituted for arm-to-arm vaccination, and the "conscientious objection" clause was made law.

According to the Act of 1898, Section II., i., "no parent or other person shall be liable to any penalty if within four months from the birth of the child he satisfies two justices or a stipendiary or metropolitan police magistrate, in petty sessions, that he conscientiously believes that vaccination would be prejudicial to the health of the child, and within seven days thereafter delivers to the vaccination officer for the district a certificate by such justices or magistrate of such conscientions objection." By this Act the parent was entitled to exemption if he satisfied the mugistrate that he believed vaccination to be injurious whatever his ground for such belief might be. This Act came into force on Jan. 1st, 1899, but the above section in August, 1898.

By the Vaccination Act, 1907, Section I., the parent is no longer required to appear before a magistrate to satisfy him either that he has a well-grounded (cf. 1867) or a possibly ungrounded (cf. 1898) belief that vaccination would be

injurious to his child, but has merely to make "a statutory declaration that he conscientiously believes that vaccination would be prejudicial to the health of the child, and within seven days thereafter to deliver or send by post the declaration to the vaccination officer of the district." This Act came into force on January 1st, 1908, but a temporary Order to the above effect became law in September, 1907.

With this brief history in mind we can better review detailed statistics. The effect in the Peterborough Union of these changes in the law is shown in the accompanying table, in which the percentage of births in respect to which exemption orders have been obtained is shown for each half-year since the creation of conscientious objection by the act of 1898.

TABLE A.—Showing the Growth of Conscientious Objection in Peterborough.

		-	•			
1897.		ercentage	1908.	Percentage of births.		
July-December	•••	0.45	January-June		4.2	
1898.		1	July-December	•••	3.1	
January-June	•••	0.28	1904.			
(Vaccination Act, A	ugu	st, 1898.)	January-June	•••	3∙0	
July-December		1.2	July-December	•••	3.5	
1899.			1905.			
January-June		1.1	January-June		4.0	
July-December			July-December	•••	27	
•	•••	• •	1906.			
1900.			January-June		3.8	
January-June		2.2	July-December		3.0	
July-December	•••	2.4	1907.	•••		
1901.			January-June		3∕5	
January-June	•••	2.7	(Vaccination Act, Sep			
July-December		2·1	July-December			
1902.			1908.	- 30		
January-June	•••	2.1	January-June	•••	23-7	
July-December	•••	2.8	July-December	•••	2810	
			-			

The table has been compiled from the half-yearly returns and not from the more accurate supplemental annual returns, in order to show the immediate effect of measures which came into force in the course of the year. In the final completed returns the number of certificates of objection received is in almost every instance slightly in excess of those noted in the preliminary half-yearly returns. These totals do not include the considerable number of cases which escape vaccination in some other way, either by refusal, by ill-health or death, or by removal to another district. It will be seen that since the important change made by the present Government in 1907 the growth of conscientious objection has been extremely rapid. Nor is the state of vaccination in this union by any means an isolated instance. The half-yearly figures for most of the other unions of Northamptonshire show a similar tendency. (Table B.)

TABLE B.—Percentages of Births in respect of which Certificates of Exemption have been received.

Unions of the County of Northampton.		1903	1904	04 1905	1906		1907		1908	
Brixworth	14-4	18.3	20.3	19.6	18-0	24.1	27.1	24-5	36-9	40-4
Daventry	15-0	12.9	14.8	21.9	17.2	17-9	2 5·5	26.0	45-5	45-2
Hardingstone	34-4	32.8	40-0	37.8	43.7	50.0	46·0	50.5	56.7	420
Kettering	21.4	42.3	47.3	55.5	55.0	61.5	58.3	67.4	69.4	74.3
Northampton	31.4	49.5	52.9	56.8	60.3	66.2	59.6	58.3	67:4	63-2
Oundle	3.3	5.0	1.4	5.0	7.4	6.8	40	12.0	10.3	21:2
Peterborough	2.1	3.6	3.4	3.7	3.8	3.0	36	12.7	23.7	28-0
Potterspury	27.4	24.1	256	27.4	29.2	40.1	29 2	44-2	58 ·8	65·1
Thrapston	43.8	43.5	34.5	37·9	40-4	46.0	37-0	52-4	54.7	62.0
Towcester	27.4	25.1	29.8	26.2	35.3	35-0	3 0·7	30.8	66.6	54.2
Wellingborough	22:4	42.4	46·1	39∙0	36 ·5	31 ·9	40.4	5 2·3	63.0	67-0
Means	22:1	27.2	28·8	30.9	31.5	34 ·8	32.8	39.2	50.2	51·1

In some parts of the county the unvaccinated considerably exceed in number those upon whom this operation has been done; for instance, in 1907 the percentage of total living unvaccinated to the births during the year was in—

Hardingstone	•••	•••	•••	•••	•••	•••	•••	54.5 per	cent.
Kettering	•••	***	•••	4**	٠.	•••	•••	67.0	**
Northampton	•••	•••	•••	•••	•••	•••	•••	7176	••
Thrapston Wellingboroug	:	•••	•••	•••	•••	•••	•••	91.0	••
Wellingboroug	h	•••	•••	•••	•••	•••	•••	63.5	••

Pry's Law of Vaccination, seventh edition. 2 Ibid

Doubtless similar results are obtainable throughout the country. It requires therefore but little imagination to foresee a time when vaccination will have become once again the exception rather than the rule. Already it is practically a voluntary act and parents are no longer required to show acquaintance with even the most elementary arguments for or against it, nor need they understand either the nature of the process or the reasons which have led to its adoption.

As Dr. T. Claye Shaw said, in a recent address: "We have remedies to hand which we know to be antidotal to certain contagious and infectious diseases, and yet we allow sentiment and ignorance to override the accomplished facts of science, and we place in the hands of illiterate obstinates the means of obtaining exemptions from treatment by the permits of a lay, and possibly a prejudiced, authority." In these circumstances it is difficult to justify the large expenditure of time and money entailed in carrying out the Acts.

The attitude of the Local Government Board is inconsistent. Compulsory vaccination is either a protective measure beneficial to the whole community, or an act of doubtful utility imposed against the will of a large section of the people, to whom it appears but an unwarranted intrusion of an officious State into the freedom of the home. latter, then these laws are unjust, and the sooner they are repealed the better it must be for all; but if the Government really have faith in the experience of practically the entire medical profession, both in this country and abroad, and the conclusions arrived at by its own Royal Commission after nine years' continuous investigation, then it is its duty to safeguard the national health by increasing the stringency of the vaccination laws, so that in this country, as elsewhere, the disease which until a century ago was such a terrible scourge may be entirely stamped out, and the risk of such an expensive outbreak reduced to a minimum.

In conclusion, I wish to express my indebtedness to Dr. Charles E. Paget, medical officer of health of the county of Northampton, for his courtesy in allowing me the use of his published and unpublished returns up to the end of 1908, and to the vaccination officers of the various unions for supplying me with the most recent statistics for the purposes of this paper.

MOTORING NOTES.

By C. T. W. HIRSCH, M.R.C.S. Eng., L.R.C.P. LOND.

The Latest 10-h.p. and 15-h.p. Napuer Cars.

RECENTLY the writer was afforded an opportunity of examining and testing the latest versions of the Napier factory. Messrs. S. F. Edge, Limited, have for many years manufactured high-powered automobiles, and now in addition they are devoting their attention to the development of cars more suited to the pockets as well as needs of the medical profession. Prior to setting out on the trial run a rapid survey of the chief features of the vehicle was made. The fly-wheel is in front, so that 10 inches clearance is given, which owing to the position of the fly-wheel, is equal to at least 12 inches in a car of ordinary design, where the fly-wheel is behind the engine; the reason is that in driving this car over rough roads with lumpy surface, when the front wheels ride over an obstruction they lift the flywheel with them, as it is in front of the engine, whereas, when it is behind, the front wheels after riding over the lump drop the fly-wheel on the top of the rise. The engine. clutch, and gear-box are constructed in one unit; this permits of a three-point suspension, and ensures the absolute alignment of engine, clutch, and gear-box under all stresses or strains of the chassis. The clutch on the 15 h.p. is of the multiple disc type, and consists of metal to metal plates running in oil; it is placed in front of the gear-box, in fact is a part of it, but there is a septum between the two, so that the gear-box lubricant cannot enter, otherwise, of course, grit or chippings from the gears might pass in and cause damage to the plates. On the 10 h.p. a metal cone clutch is fitted. The 10 h.p. has a two-cylinder engine cast in one; the 15 h.p. has a four-cylinder engine, with the cylinders arranged in pairs. The cam-shaft and all the gearing are entirely enclosed in an aluminium and dust-proof

oil-retaining case. One cam-shaft operates the inlet and exhanst valves, and they are interchangeable. The valve lifters have rollers where they come in contact with the eccentrics and are very solid forgings. Plates that can be easily detached are placed in front of the valve spindles and tappets, thus rendering them secure from dirt and foreign bodies. The crank runs on roller bearings, and these are well lubricated by splashing, as also are the pistons and gudgeon pins. Three rings are fitted to each piston; they are pinned, which absolutely eliminates all possibility of their working into line, but if the owner does his own repairs he may experience a little trouble when replacing his cylinder covers after lifting them off to remove carbon deposit, as the rings may ride on the pins. Still, with a little care this can be avoided.

Lubrication is by a gear-driven pump and the surplus oil is returned to the sump, from which the pump feeds, through a wire gauze strainer. In addition, an aluminium lubricating disc is attached to each web of the crank, which contains a scroll-shaped channel, very wide at the periphery of this ring and getting gradually smaller towards the crank-pin, which it enters through holes drilled for the purpose; oil is continuously pumped to the mouth of this channel, and is finally thrown out through the connecting-rod bearings by centrifugal force. A gauge is attached to the dash which verifies the correct working of the pump and lubricating system. The whole arrangement is economical and should prevent both under- and over-lubrication. A gear-driven centrifugal pump circulates the water, the pipes are of ample size, the radiator is efficient, and the valve ports of the engine are jacketed, so that overheating is well guarded against.

Ignition is by a Bosch high-tension magneto, which can be easily and rapidly detached and replaced, for by merely slackening of a thumb screw the stirrup which holds the magneto down on its bed can be removed and the magneto lifted straight out of its coupling. On the majority of these cars a magneto with a fixed firing point is supplied, but the makers will, if requested to, fit one with a variable timing arrangement, or what is even better, the Bosch dual igni-This gives the advantage of a separate high-tension electric system and greatly facilitates starting, enabling the owner, when making short stops, such as a doctor does when calling professionally, to start off on the switch. It can also be used as a stand-by ignition in case of need; with it a coil and battery must be carried, but the magneto contact-breaker and distributer is employed in place of a separate commutator. The petrol is supplied by gravity, and I believe it would be an advantage if the petrol tank stopper was tapped to take the end of the tyre pump; then on a hill, if the quantity of petrol is low, the tank could be rapidly inflated and the carburettor kept supplied by pressure.

The carburettor has an annular float, which ensures a regular petrol level in the jet, no matter at what angle the chassis may rest, and the opening of the air-valve in the mixing chamber is governed by the speed of the engine. For ease in starting an arrangement is fitted on the dash to close the airport below the jet, and an agitator can be worked by a rod that protrudes near the starting handle, so as to flood the float chamber on starting, and this obviates the need of opening the bonnet when this is needed. Three speeds forward and a reverse are supplied. The top drive is direct from the engine to the differential, without the intervention of any gear. In lieu of the usual dog clutch the two portions of the first motion shaft are made one by a pinion being fixed to one half, which engages with internal teeth on the other part. The change gear is on the now popular gatechange system; the advantage of this over the notched quadrant is that it is a more certain method of locking the gears; it also reduces the length of the gear-box, and enables the driver to slam the change-speed lever forward or backward safe in the knowledge that he has no notches to feel and possibly to overrun. Those who, with the quadrant variety, have through carelessness notched and spoilt their dog clutch on the top speed by letting the clutch in before getting the lever right home, will appreciate this. throttle is controlled by a foot pedal situated near to the clutch; a spare control, working on a sector on the dash, is also fitted. Two independent sets of metal to metal brakes are provided: the foot one acts on the main shaft and the hand one on the hubs of the two back wheels; both are thoroughly protected from dust

^{3 &}quot;On the Span of Life," Midsessional Address, delivered before the Abernethian Society, June 24th, 1909, St. Bartholomew's Hospital Journal, August, 1909.

and mud, and an accessible method for adjustment by hand This is very important, as I have noted on many cars that the brakes are frequently not maintained in a state of efficiency, merely because the adjustment is difficult to get at. The frame is of channel section steel, narrowed at the forward end to give clearance for the two front steering wheels. The springs are of the semi-elliptical type, are long, and very flexible. Artillery pattern wheels are supplied, but in lieu of these detachable wire wheels may be had; personally I prefer the former and a Stepney wheel. 810×90 tyres are used for both the back and front wheels. Considering the weight of the car it would, I think, be cheaper in the long run if the 810×100 , which fit the same rims, were supplied.

I took the 15 h.p. car for an eighty-mile run, first through London traffic, which is a good test of an engine's flexibility, and the way the car could be slowed down and could pick up speed when a course through the stream of vehicles could be found was most delightful, and this nearly always on the direct (top) drive-merely a release of the throttle pedal, and without slipping the clutch, we had a crawl; the depression of the throttle pedal, and we had a dart forward. The change gear worked easily and the clutch was smooth, and picked up sweetly. On hills she behaved very well, doing Reigate and a nasty climb near Burford Bridge with five up and a heavy landaulette body on the second speed, which is certainly good for so loaded a 15-h.p. engine. The steering was easy and did not affect one's shoulder muscles even after a long drive, which has not been the writer's experience with some other makes of cars. The brakes were tested both on up and down gradients, and were found to be of ample power. As to the springing, luxurious is the only word for it. Personally I am in the habit of driving frequently in a single cylinder, short chassis, rather rapid, runabout, and the difference was immense. Altogether this latest production of Messrs. S. F. Edge, Limited, is an extremely pleasing vehicle, and one well fitted for the medical profession, either with a landaulette body for town use, or a two- or four-seated touring body for the country. The chassis price of the 15-h.p. is £350, and that of the 10-h.p. £250. Messrs. Edge must have great faith in their productions, for whereas most makers merely give a guarantee of six, or perhaps 12, months, they give one extending over three years from the date of delivery

A Point Worth Remembering.

Recently I was called professionally to see a street accident. A chauffeur had some difficulty in starting his car, and after lifting up the bonnet he flooded his carburettor, and then being in doubt as to whether his sparking plugs were all working, when the engine was running he shorted one with a screw-driver on to the frame; the result was that the petrol which had escaped when he flooded his carburettor exploded with the external spark he got when testing the plug. The moral, of course, is to be careful not to test the plugs if there is any petrol or petrol vapour about. Probably most motorists are aware of this danger, but the fact that a professional chauffeur learnt the lesson by a week's rest in a cottage hospital is my excuse for mentioning the point.

Oil-economisers.

In these days of buying oil in bulk, rather than in gallon cans, considerable saving of time and appearance of clothing may be effected by employing an oil-pump, by means of which the oil can be drawn from the cask and forced into a jug or convenient receptacle for handling. Recently while touring I noticed a neat form of pump for this purpose, which has been put on the market by a Warwickshire motor agent, but any pump with suitable pipe can be made to answer.

A Petrol Pourer.

With a great many of the cans in which petrol is sold there are difficulty, waste, and loss of time in getting the fluid into the tank. Messrs. Riches, of Store-street, London, have on sale what they call the perfect petrol pourer. It has various adapters, so that it can be fixed pretty well on any make of petrol can, is provided with a strainer, and as an air-tube is attached, it will be found a rapid and easy method of filling the petrol tank, especially if the latter is in an inaccessible position.

Good and Bad Cars.

De Dion Bouton, Limited, of 10, Great Marlborough-street, London, will be pleased to send to anyone interested. booklet contains a reprint of an article which was published in the Autocar under the title of "Good and Bad Cars," emphasises the difference, on more than one occasion brought out in these articles, between really good cars and more or less indifferent ones. Both classes of car may be of good value, probably, for the money asked, but the lower priced chassis will not, as its novice owner fondly believes, be as good as the one which may cost, say, £100 more. cheaper car may go as well at first as the other, but, as this brochure points out, after 5000 miles the more expensive one will need much less repair. In other words, this pamphlet professes to show that first-class cars are the cheapest in the end and that inferior cars are unreliable and unsatisfactory.

THE OPENING OF THE LONDON MEDICAL SCHOOLS.

Charing Cross Hespital Medical School.—The session opened on Oct. 4th, when Sir T. Clifford Allbutt presented the prizes. The Dean, Mr. F. C. Wallis, in his report made the following interesting remarks concerning a "London degree for London students":—"With regard to the new Royal Commission on the London University a letter, signed by all the medical schools, was sent to the Prime Minister in the sense of the following resolution:

That the Royal Commission, which the Senate of the London University has requested the Government to appoint, should be allowed to take evidence as to the means by which the medical degrees of the University might be made more accessible to London students.

This is a matter of grave, even vital, interest to the existence of the London medical schools, and I am quite sure if the public only could appreciate what it means a lively and profitable interest in this most important matter would be taken. At any other teaching school in the United Kingdom, outside this metropolis, any student can obtain a doctor's degree for the same amount of time and money that it takes the London student to get the double qualification, which, although an excellent one, does not carry with it the allimportant title of 'doctor.' It may be said that it does not matter what a man's qualifications are if the man himself is good. But this is not true in practice, especially when a man is starting his career. In common with many others, I have received various letters from former students complaining bitterly of the fact that they are surrounded by men with doctor's qualifications obtained at either a provincial, Scotch, or Irish University, at no greater trouble and expense than it has taken the London man to obtain his double qualification, and, moreover, it has actually occurred that in advertising for candidates for posts at small provincial hospitals it has been stated that a doctor's degree is essential, thus effectively barring the London man with the double qualification. There is no doubt that the absolute medical examinations themselves for the London M.D. degree do not present any unusual difficulties to the ordinary examinee. The whole trouble lies with the matriculation examination, concerning which I could say much, but this is not the time or place to do so. The fact, however, is known to all of us, and will, I hope, be dealt with by the proper people when the evidence is taken at the Royal Commission. Now the practical result of all this, as it at present stands, is that our old students say, and one cannot blame them, that, much as they like their old school, and although they know of the many advantages in other ways which a student gets in London, still this stumbling block of a doctor's degree is so great that they neither send their own sons nor those of their friends to London, but recommend them to some provincial school where the facilities for obtaining a doctor's degree are made as easy as they are made impossible here in London. I say made impossible in London, for I am afraid that is what has been going on for years with regard to the London University, which, in this matter, has been held in subjection by a small body of men whom one would credit with larger minds and greater foresight than they seem to possess. Instead of such being the case, with a narrow and selfish outlook they cling to all the old difficulties of the London Some matters worthy the consideration of all car purchasers are dealt with in a little booklet which Messrs. rapidly ruining London as a teaching medical centre.

And thus all the splendid wealth of chinical material, all the facilities of obtaining the best medical education in the world, are being lost, ruined, and thrown away, because of the selfishness of a few and the apathy of the many. These things have been frequently written about in the medical press, but it is vitally necessary for the public to take up this matter and to do their best to protect their own interests by helping the medical schools of London to have the power to offer to the London medical student a degree which can be obtained with equal facility to any of the other degrees already mentioned. By this, and this alone, will London regain her lost position as the best medical school in the world." As regards the work of the school Mr. Wallis said: "Various changes have been made in the teaching in the surgery department, and a new departure has been made in the method of teaching surgery which I think will be most successful and will probably be adopted by other schools. It has been obvious for some time that the old method of imparting knowledge by a set of stereotyped lectures is ineffective, and that having regard to all that a student has to do in these days the less lectures of the old-fashioned type he has to attend the better, as he will have so much more time to give to clinical and other work which is of the first importance. Without wearying you with the details of the scheme, the practical result is that the minimum number of lectures will be given on the principles and practice of aurgery and much more clinical surgery will be taught. As regards medicine, there have not been any particular changes in the method of teaching, and, indeed, it would seem as though none were required, as in the last examination 100 r cent. of the candidates from Charing Cross passed in this subject." Sir T. Clifford Allbutt delivered an address which we report on another page. In the evening a dinner of the past and present students of the hospital was held under the chairmanship of Dr. William Hunter. 100 were present, the principal guest being Sir Clifford **▲llbatt.**

King's College Hespital.-No opening ceremony was held at the College, but the annual dinner of the past and present students took place at the Waldorf Hotel on Oct. 1st, Mr. T. Hugh Smith, of Farningham, being in the chair. Of the hospital consulting and active staff the following were present: Dr. I. Burney Yeo, Dr. D. Ferrier, Professor W. Rose, Sir W. Watson Cheyne, Mr. A. B. Barrow, Dr. N. Dalton, Mr. A. Carless, Dr. Urban Pritchard, Dr. J. F. W. Silk, Dr. John Phillips, Dr. A. Whitfield, Dr. H. J. M. Playfair, Dr. G. B. Flux, Dr. R. H. Steen, Dr. J. C. Briscoe, Mr. F. F. Burghard, Mr. C. E. Wallis, and Mr. V. Cargill. Amongst the others present were Dr. J. Walters, Dr. C. H. Allfrey, Dr. S. Short, Dr. P. Lewis, Dr. G. E. Shuttleworth, Dr. C. P. Childe, Dr. W. J. Essery, Dr. E. Wood, Mr. Val. Matthews, Dr. J. Davidson, Dr. E. Thurston, C.I.E., and the secretaries, Dr. StClair Thomson, Mr. Peyton Beale, Dean of the School, and Dr. H. W. Wiltshire. There were 106 present. Mr. Smith proposed the toast of the evening, and in his remarks pointed out the immense amount of work which the student of the present day had to carry out in comparison with the student of past times, and also how much more strenuous his career had become. He also alluded to the fact that this was the first year of the school's existence as the Medical School of King's College Hospital. Previously it had been part of the Medical Faculty of King's College, London, but owing to the incorporation of that body with the University of London the medical school of the hospital, though still a school of the University, became independent. This was also necessary in view of the impending removal of the hospital to South London. He also alluded to the excellent examination results of the last few years. Dr. Walters, in replying, said that he was a student in the year 1853, and he gave some idea of the work of the hospital and its staff at that time, mentioning the names of Farre, Todd, and Partridge as great teachers He said that he had no doubt whatever when the hospital was rebuilt at Camberwell and was able to expand its special departments, which were at present hopelessly cramped, its work would be better than it had ever been, and would come to occupy a premier position amongst London hospitals and medical schools. Thanks were returned to the committee and secretaries of the dinner, which was voted a great success by all present.

London Hospital Medical College. - The opening of the ssion was marked by a staff reception of old students in the library of the College on Oct. 1st. In the evening the annual dinner was held at the Savoy Hotel. Dr. F. J. Smith presided and was supported by Dr. Percy Kidd, Dr. A. H. N. Lewers, Dr. H. Russell Andrews, Mr. C. W. Mansell Moullin, Mr. E. Hurry Fenwick, Mr. T. H. Openshaw, Mr. Roxburgh, and other members of the London Hospital staff. A large The occasion company of old London men were present. marked several new departures: the usual musical accompaniment was conspicuous by its absence, as was the common long list of toasts and speeches, both welcome omissions, judging from the evident enjoyment of all who attended. After the usual loyal toasts had been given from the chair, Dr. Smith made the one and only speech, the "London Hospital." Having read various letters of apology from those prevented from attending, including one from the Hon. Sydney Holland, and another from an old student who had attended on these occasions for 54 years and now on account of failing eyesight was unable to do so, he referred to the losses which the hospital had sustained by the death of two of its most promising young members of the staff, and to the fact that Mr. Mansell Moullin was shortly joining the consulting staff. After a few words congratulating Sir Jonathan Hutchinson on his recent honour, Dr. Smith drew attention to the continued need for money to further medical education, so as to enable men to undertake research work, which they could not do if they had to earn their own living. Mention was made of the London Hospital Medical Club and its need, now that it was a medical benevolent institution, for support. There is no annual subscription, merely an entrance fee of £1, and during the year it has been the means of affording relief to various necessitous cases. Dr. Smith concluded his humorous speech by advising all "to play at musical chairs" and to walk round and renew old friendships.

Middlesex Hospital.—The seventy-fifth winter session of the Middlesex Hospital was opened on Oct. 1st by Lieutenant E. H. Shackleton, C.V.O., and Mrs. Shackleton. They were received in the board room of the hospital by members of the weekly board of governors and the honorary staff of the hospital. A guard of honour com-posed of the Middlesex Hospital Cadets of the University of London Officers' Training Corps was drawn up in the hospital garden. A large marquée erected over the tennis-court was filled to overflowing with the past and present students, the nurses and their friends, to the number of over 1000. introductory address was delivered by Dr. J. Strickland Goodall on "Walking the Hospital" (see p. 1061). After the Dean, Dr. H. Campbell Thomson, had read his report for the past year Lieutenant Shackleton presented the prizes to the students and Mrs. Shackleton gave the Fardon Memorial medals to the nurses. Lieutenant Shackleton in a brief speech alluded to the medical department of his own expedition. He said they had three doctors with them, and they had come through without any deaths owing to their help. One man lost an eye, and for the purposes of the operation he had been stretched on a board among the ice. Another man lost a toe through frost-bite, and he still carried the toe about with him as a trophy. He mentioned the strange observation that in these extremely cold regions the rotifers were able to live and to multiply, and that observations on them since had shown that they continued to do so through very wide ranges of temperature. regard to the temperatures of the members of the expedition, he stated that they suffered some ourious changes. On the plateau they were often down to 93° or 94° F., but they became normal again after meals. It had been said that people never caught a cold in the Polar regions, and the members of his expedition did not do so until they opened a bale of clothing which had been packed up in England. The germs were there and they caught. but the cold disappeared when they went out, while those remaining in the hut continued to suffer. He and Mrs. Shackleton appreciated the welcome they had received, and he mentioned the Nimrod Exhibition which he hoped they would visit as the proceeds were to be given to charities. Lord Cheylesmore, chairman of the weekly board, proposed a vote of thanks to Dr. Goodall and to Lieutenant and Mrs. Shackleton. Prince Frances of Teck, who seconded, also entreated those present to go and see the Nimrod Exhibition, for part of the proceeds were to go to that hospital. He congratulated Lieutemant Shackleton on

returning safe and sound to this country and also upon his having chosen the South Pole instead of other places so that he had returned not only with honour but in peace. The annual dinner was held at the Empire Hall, Trocadero Restaurant, on the same evening, Mr. John Murray being in the chair. A large number of old stadents were present, and several members of the lay board, including H.S.H. Prince Francis of Teck, Lord Cheylesmore, Mr. W. E. Gillett, chairman of the school council, Mr. Charles Davis, and Mr. Felix Davis, the total number present being ower 170. After the usual loyal toasts had been honoured the Chairman proposed the toast of "Success to the Middlesex Hospital and Medical School." referred to the air of vitality and activity which characterised the school, and alluded to the interest taken by the students in Mr. Haldane's Officers' Training Corps, to which they contributed 30 cadets. He also described the recent negotiations, now practically concluded, to secure jointly with St. Mary's Hospital a permanent athletic ground, and mentioned the recent generous donation from Mr. J. Bland Sutton of £1000 to the fund for this purpose. Lord Cheylesmore, chairman of the weekly board, replied on behalf of the hospital. Dr. H. Campbell Thomson, the dean, replied on behalf of the school. He referred to the establishment of a special schoolarship for students from New Zealand and announced that the outlook as regards entries at the school was even better than that of last year. Mr. Thomas Carwardine of Bristol replied on behalf of the old students, and Mr. H. G. Kilner, the senior Broderip scholar, on behalf of the present. The toast of "The Visitors" was proposed by Mr. Andrew Clark and responded to by Chevalier Wilhelm Ganz, who has for more than 42 years assisted at these dinners. The health of "The Chairman" was proposed by Mr. Bland-Sutton, and in his reply Mr. Murray expressed his gratification at the reception accorded him. The proceedings throughout were marked by great enthusiaem, and the frequent references to the growing prosperity of the school and to its increasing numbers were received with acclamation. In particular, allusions to the kenerous donation made by Mr. Bland-Sutton to the athletic ground fund, and to the untiring energy of the chairman in looking for a suitable ground, were accorded a werm reception, especially by the present students, who were present in considerable numbers and contributed in no small degree to the general enthusiasm and to the success of the evening. In response to general demands the healths of Prince Francis of Teck, Mr. Bland-Sutton, and the resident medical officer, Mr. A. E. Johnson, were informally toasted. An excellent musical programme was arranged by Chevalier Ganz, assisted by Mr. M. Sterling Mackinlay and Mr.

St. George's Hospital Medical School .- The opening ceremony was held on Oct. 1st, when Dr. H. D. Rolleston delivered an address on "St. George's and the Progress of Physic," which we published in our last issue. The annual students' dinner was held on the same evening at Prince's Restaurant, under the chairmanship of Mr. A. Marmaduke Sheild, consulting surgeon to the hospital, and proved a very successful function. A large gathering of old students was present, representing entries that in an appreciable number of cases must have been as much as 40 years apart. Mr. Sheild, whose presence among his old friends after his long and trying illness was welcomed by them with the greatest possible enthusiasm, achieved the difficult task of making a sympathetic, witty, and new speech in proposing the Royal toasts. Captain St. Leger Glyn proposed the toast of "St. George's Hospital Medical School," in reply to which the Dean, Dr. E. Ivens Spriggs, was able to report a continuance of the movement upward in the schools, and to lay upon the table an imposing list of honours and appointments gained by St. George's men during the year. Both these speeches were of good cheer for the future, while both showed the difficulties and anxieties which the authorities of the hospital, lay and medical, fiscal and educational, have had to surmount. Squire Sprigge proposed the health of Dr. Rolleston Square sprigge proposed the neath of Dr. Rolleston is the character of the orator of the day. Dr. Arthur Latham proposed the toast of "The Past and Present Students of St. George's Hospital," which was session was marked by the annual old students dinner which took place at the Hotel Cecil on Oct. 1st. Mr. adequately responded to by Dr. C. D. B. Hale and Mr. J. B. Lawford was in the chair, and the company of the assembly in his speech proposing Mr. Sheild's health, Surgeon-General W. L. Gubbins, A.M.S., Mr. C. T.

in which he expressed the great pleasure it was to St. George's men to see among them again their brilliant and popular surgeon, so long laid aside by illness incurred in the discharge of his hospital duties. Mr. Sheild's brief reply brought a very successful dinner to a conclusion.

St. Mary's Hospital Medical School.-The session was opened on Oct. 1st by the distribution of prizes which was performed by Dr. H. A. Miers, Principal of the University of London, who delivered subsequently an address on "Theories." In the evening the annual dinner of past and present students was held at the Café Royal, where over 130 past and present students assembled and spent a very pleasant evening, the enjoyment of which was heightened by the unusual brevity of the speeches and the uncanny behaviour of that caustic magician Dr. Byrd-Page. Dr. Milner M. Moore, who occupied the chair, in proposing the toast of his old hospital and medical school, recalled the fact that he was one of the oldest of St. Mary's students, since he passed his hospital days in the early "sixties," a confessionin which it was difficult to believe. The toast was replied to-by Mr. H. A. Harben, chairman of the hospital board, and Mr. W. H. Clayton-Greene, Dean of the Medical School. Mr. Harben alluded to the harmonious relations existing between the hospital and the school and the desirability of the present arrangements which allowed the teachers of the preliminary sciences to keep in close touch with the clinical work of the hospital. Whilst he rejoiced at the recent opening of the Clarence wing for 31 patients under therapeutic inoculation, he referred to the not far distant prospect of a State or municipal subsidy of the voluntary hospitals. The Dean outlined in a quick and lucid speech the recent progress of the school. He was able to announce a satisfactory entry for the coming session and an excellent record of achievement in the past year. The most notable success was gained at the last examination for the Fellowship of the Royal College of Surgeons of England, when five men went up and were all successful. The Henriques operating theatre had been in use for a year and the fund which had been raised by the students for the permanent endowment of a cot had attained its object. Probably the most important feature of the year from thepoint of view of the school's future was the successful issueof the negotiations to purchase an athletic ground at Park Royal in conjunction with Middlesex Hospital; the desirability of this arrangement was guaranteed by the happy relations which had existed between the two schools during their joint tenancy of a ground at Wormwood Scrubbs for the past four years. The schoolwas in the enjoyment of a prosperity somewhat remarkable in relation to the size of its hospital, and its future might be faced with considerable hope and confidence. Clayton-Greene expressed his warm thanks to Mr. Harben for his continual devotion to the interests of the medical school, and to Mr. B. E. Matthews, the secretary, who put such good work into its administra-tion, and finally he alluded in sympathetic terms to the illness of Dr. H. A. Caley, his predecessor, who had laboured unsparingly in reorganising the school during the most critical period of its existence and to whom its present state was so largely due. He hoped that before long St. Mary's would welcome Dr. Caley back to his work again, a wish warmly endorsed by his audience. The "Health of the Visitors" was proposed by Mr. J. E. Lane in a witty little speech, and responded to by Dr. H. A. Miers, the "opening lecturer" of the afternoon, who said that such a gathering was encouraging to him, since it showed him the real existence of a collegiate life in the University of which he was principal. He also alluded to the recent renewal of negotiations between the Royal Colleges and the University in the endeavour to make the London degree more accessible to all London medical students. The last toast, that of the Chairman, was given by Dr. Sidney P. Phillips, and after Dr. Milner Moore's response the gathering split itself up into groups of contemporaries who were not silent concerning old times at St. Mary's.

Harris, J.P., the Rev. A. O. Hayes, Mr. J. A. Jennings, Professor W. Osler, Dr. J. Priestley, Mr. G. Rendle, Mr. G. Q. Roberts, Mr. G. S. Saunders, and Colonel D. Wardrop, A.M.S. After the usual Royal toasts, the chairman, in proposing "St. Thomas's Hospital and Medical School," referred sympathetically to the absence, owing to illness, of Mr. Wainwright (the treasurer) and Mr. H. H. Clutton (the senior surgeon). He also deplored the untimely death of our late editor, Thomas Wakley, a distinguished St. Thomas's man, who was in the chair at last year's dinner. The toast was responded to by Mr. C. T. Harris (almoner to the hospital) and by Mr. Cuthbert S. Wallace (Dean of the Medical School). Mr. Harris congratulated the hospital on the opening of the new female medical ward, amongst other improvements, and on the near prospects of the opening of the new maternity ward. He also hinted at the possibility of further improvements in the out-patient department. Mr. Wallace, in a short but racy speech, recounted the numerous successes of the hospital year, both academic and athletic. The last toast of the evening was that of "The Chairman," proposed eloquently by Dr. H. R. Hutton and Chairman," proposed eloquently by Dr. H. R. Hutton and received with acclamation. In the course of the evening Mr. Barclay Gammon gave a humorous sketch, which was highly appreciated.

University College Hespital and Medical School.—The session was opened on Oct. 1st, when Sir John Tweedy delivered an introductory address (see p. 1060). In the evening the annual dinner of the old and present students was held at the Gaiety Restaurant, Strand. Mr. A. Pearce Gould, senior surgeon of the Middlesex Hospital, occupied the chair. 126 diners were present. After the toast of "The King," Mr. A. E. Barker, senior surgeon of the hospital, proposed the toast of "The Navy, Army, and Auxiliary Forces," to which Major C. G. Spencer, R.A.M.C., professor of military surgery at the Royal Army Medical College, responded. Major Spencer, in his speech, gave a short but very interesting outline of the scheme with regard to the Special Reserve service. At the beginning of his speech, in which he proposed the toast of "The University College Hospital and Medical School," Mr. Pearce Gould referred in touching terms to the recent sad death of Dr. Radcliffe Crocker, for many years physician in charge of the skin department at the hospital. His remarks, which were full of reminiscences of his old school and teachers, were listened to with rapt attention. Dr. H. Batty Shaw, Dean of the medical school, replied in suitable terms. The toast of "The Chairman" was proposed by Sir Thomas Barlow, senior physician of the hospital.

Other Hospitals.—At St. Bartholomew's Hospital and the Westminster Hospital Medical Schools, although the usual annual dinners of past and present students were held, there were no opening addresses nor other formal inaugural proceedings of the school session.

INFANTILE MORTALITY IN ALEXANDRIA.1

An exceedingly interesting and instructive report on infantile mortality in Alexandria has recently been presented to the municipality by Mr. E. G. Carpenter, medical officer of health of the city. The first paragraph of the report is calculated to convince one of the necessity for such an investigation and to bring home to the most sceptical the appalling waste of infant life in one of the most Europeanised towns of Egypt. We read that " between January 1st, 1902, and December 31st, 1907, 83,404 children were born, and of this number 24,948 died," or, as Mr. Carpenter aptly puts it in the original French, "were moved down [fauchés] in their first year of life." These figures represent a mortality of 30 per cent., and an instructive comparison is made with statistics of other countries on the same subject. For this purpose the several years are examined in detail, and it is found that the average mortality for the six years is 288 per 1000 births. This figure is only exceeded by Chili with 326. Then follow Russia with 268, Austria with 224, Roumania with 218, England 150, Scotland 126, Ireland 103, down to New Zealand, which has the

best record with 79. Further, as compared with some of the larger cities in England, Alexandria with her 288 compares very unfavourably with London 141, Manchester 177, Birmingham 184, and even with Preston 244 and Blackburn 207. The two last named are notorious for their infantile mortality, due, it is said, to the large number of women employed in the cotton mills. Similarly, the poorest quarters of London show a better average than Alexandra; thus Whitechapel is 123. Mile End 126, St. George 141, and Limehouse 168.

Turning now to the period of infancy in which death occurs, tables are given showing in detail the mortality in the first month, between the first and the third month, between the third and the sixth month, and between six and 12 months. It has been noted that there is a severe mortality in the first month, with a decrease in numbers between the first and third month, and after that a further increase. Comparatively again, in 1904, for every 1000 births, 29 died in the first month in New Zealand, as against 78 in Alexandria; and, in the period from six to 12 months, whereas only 14 died in New Zealand, the mortality in Alexandria amounted to 129. This figure does not vary appreciably in the different years under review, and approximately 40 per cent. of the deaths occurred before three months, 20 per cent. between three and six months, and 40 per cent, between six and 12 months. In January the deaths under one month are high in comparison and those between six and 12 months are low, but in July exactly the contrary is the case. The death-rate of infants under one month steadily diminishes from January to July and then progressively increases to the end of the year, while the mortality between six and 12 months increases from January to July and then diminishes month by month. deaths between one and three months remain almost stationary throughout the year, but tend to follow the same variations as those under one month, and those between three and six months more closely follow the curves of the period between six and 12 months. Taking the totals of the six years, 10.6 per cent. died in January and 5.15 per cent. in June, the birth-rate at the same time being respectively 9.77 per cent. and 6.75 per cent.

Putting the results in the form of curves, it appears that the curves of births, still-borns, and deaths below one month are identical; but there is a diminution of the curve in the middle of the first year and an increase towards the end. This is natural, as the birth-rate increases and there is more likelihood of still-born or premature births. In England the births are more or less evenly distributed throughout the year, with a slight increase in June and July; but in Alexandria more children are born in November, December, and January than in any of the other months, and fewest of all in May, June, and July-a curious fact for which Mr. Carpenter cannot offer any explanation. The proportion of still-births is 4.15 per cent., as compared with 4 per cent in England. The curves for the periods from three to six months and from six to 12 months show an appreciable increase during the summer months, attaining their maxima in July, owing to the prevalence of diarrhoea. A similar rise occurs between the first and third year of life. Taking a total of 21,852 deaths under ten years, 11,483 were boys and 10,369 were girls, being in the proportion of 1.10 to 1.

Coming now to the diseases contributing to this excessive mortality, Mr. Carpenter gives further lengthy tables which bring him to the conclusions that the majority of deaths are due to (1) prematurity, lack of development, and marasmus; (2) diarrhœa of various forms; and (3) bronchitis and pneumonia, especially the two former. Of 12,653 deaths during 1905-07, 10,899 were due to these three causes. Comparing the general causes of mortality with English figures for the same period, Alexandria stands fairly well, and has also only one-third as much tuberculosis as England; but, on the other hand, there is three times as much mortality from diarrhoea, twice as much from marasmus, three times as much from rachitic diseases, and twice as much from bronchitis. In the three years in question, of a total of 7994 deaths 3892 were due to diarrhœa. Mr. Carpenter ascribes the mortality arising from prematurity, feeble development, and marasmus to ignorance and neglect of the hygiene of pregnancy on the part of the mother. The bad effects of this neglect as a factor in infantile mortality are particularly noticeable in the first month of life, diarrhea becoming more prominent as a cause in the later months. Mr. Carpenter finally recommends

¹ Rapport sur la Mortalite Infantile. Addressed to Professor Gotschiich, sanitary inspector of the municipality of Alexandria, by E. G. Carpenter, D.P.H. Cantab., F.R.C.S. Eng. Société de Publications Égyptiennes, Alexandria. 1909.

the establishment of a maternity home and a stricter supervision of midwives, by whom almost every native woman is attended, and the appointment of lady health visitors, who shall be qualified midwives, specially trained in the principles of infant feeding and general management of infants, whose duties shall be to visit each lying-in mother and give such advice on these matters as may be necessary. He considers that the cause of the diarrhea is contamination of the food, either by flies or dust, and recommends the establishment of gouttes de lait throughout the town for the supply of good and clean milk, as well as certain improvements in the sanitary administration of the town generally.

The report is a very valuable statistical record and must have entailed an enormous amount of work. Many will hold that Mr. Carpenter's recommendations for the prevention of this awful mortality are not practical measures, taking into consideration the people with whom he has to deal. It is the old story of the Ethiopian who cannot (and will not) change his skin (or his customs engrained in him for centuries). The absolutely filthy habits, both personal and domestic, of the lower class native, and their colossal ignorance of, and indifference to, all matters hygienic and sanitary, render reasonable recommendations for their improvement nearly futile; while their deep-rooted objection to soliciting medical help till the case is in extremis makes the question of their salvation even more difficult. has to be remembered, for it is true that so long as "Kismet" ("It is the will of God") continues to be the solace for all earthly sorrow or disappointment of any kind, our crusade against the awful waste of infant life in Egypt will be altogether unavailing. But vigorous endeavour will in the end, it is to be hoped, lead to good result.

Looking Back.

PROM

THE LANCET, SATURDAY, Oct. 8th, 1881.

The mass of the middle classes of society has begun a reat movement in the acquisition of knowledge, in the discovery of rights, in the conviction of absurdities, and in virtue and liberality of sentiment. The higher orders see the impossibility of arresting this progress, and titles and decorations will no longer command even notice unless supported by real excellence. Among the higher ranks are some who, so far from viewing this movement of other ranks with dread, step forward to promote it, and the share taken by some of exalted rank and office in the founda-tion of this University demonstrates a liberality and generosity which will ever do honour to England, and which are worthy of all imitation. So ought physicians to act towards the general practitioner, to make every effort to improve his general education and his professional knowledge. In fact, all those who lecture or practise at public institutions act, whether they will or not, contrary to the narrow views of interest. For they are occupied in imparting knowledge to the rising generation of general practitioners; occupied in making them as learned as themselves. In me such narrow views would be the height of baseness and ingratitude; for I hesitate not to avow,—I rejoice in this public opportunity of declaring, that to the general practitioners of England, Scotland, and Ireland, I am indebted for my professional success. When I commenced my professional career, I determined upon trusting for success to working hard, and to conducting myself as well as the infirmity of human nature would allow. I determined, however long I might wait for success, never to fawn upon and run after my superiors, nor to stoop meanly to my inferiors; never to intrigue for an advantage, nor to employ trumpery artifices for making myself known to the public. For many years I toiled and saw many of my contemporaries, nay of my juniors, who worked less but were wiser in their generation, pass by me. I published work after work, edition after edition, and paper after paper was honoured with a place in the Transactions of the first medical society in Europe: I was physician to a large metropolitan hospital, and had attended there and gratuitously out of doors above 20,000 patients. But in vain. In 1828, my profession was no more

lucrative to me, was as short of my actual expenses as it had been in 1818. At that time THE LANCET was pleased, now and then, to publish a clinical lecture delivered by me at St. Thomas's, and my practice at once doubled. The following year it published the greater part as I delivered them, and my practice doubled again. Last season THE LANCET published them all, and my practice was doubled a third time. This astonished me the more, as my clinical lectures were generally delivered with little or no premeditation, while all I published myself had cost me great labour, many a headach, and much midnight oil. It was through the general practitioners in the large majority of instances, and through general practitioners for the most part with whom I had not the honour of any acquaintance, that the publication of those lectures accomplished my success. To the body of general practitioners, therefore, I owe a debt of gratitude. They have called me forth spontaneously, from no interested motive, and I cannot exert myself too much in the education of their successors.

Public Bealth.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On the Appointment of the Medical Officer of Health and on the Sanitary Circumstances and Administration of Gravesend, by Dr. R. J. REECE.2—The old borough of Gravesend, which in 1851 had a population of 16,600, has now about 30,000 inhabitants, of whom a small portion live on the water and some 800 in the garrison and fort. The population consists to a large extent of pilots, seamen, and bargemen, together with dock labourers who work on the opposite side of the Thames at Tilbury. There appears to be an adequate supply of working-class dwellings, and of a total of 6067 houses in the borough some 60 per cent. are rated under £15 per annum. The sanitary history of Gravesend has been well recorded in previous reports to the Local Government Board, notably by Mr. Netten Radcliffe in 1877 and by Sir Shirley Murphy in 1885, and is now brought to date in a comprehensive report by Dr. Reece. This report, like its predecessors, lays stress upon the various disadvantages, from a sanitary point of view, which result from the cesspool system. Gravesend is one of the few large towns remaining in England where practically every house has its cesspool and where new cesspools are dug as new dwellings are erected. Many years ago a material proportion of the houses obtained water from wells sunk into the chalk by the side of the cesspools, but in more recent times all these wells have been disused, or in some cases have been themselves turned into cesspool overflows. The water of the town is supplied by the Gravesend and Milton Waterworks Company from wells sunk into the chalk at Windmill Hill, the highest point in the borough. In these wells water is reached at a depth of 114 feet from the surface, and the supply is augmented by various lateral adits which have been driven at the bottom of the wells. Judged from chemical analysis the water is of high organic purity, but in view of the extensive contamination of the chalk in the neighbourhood the underground water which reaches these wells cannot be regarded as free from risk. On this view Dr. Reece speaks with approval of the present intention of the company to construct new wells about three miles from the borough. Calculating from the daily consumption of water per head, and allowing for the fact that rain from roofs gains access to many of the cesspools, Dr. Reece estimates that a total of over 220,000,000 gallons of sewage reaches these receptacles each year. From local data regarding the emptying of cesspools, however, it appears that only some three or four million gallons are annually removed by pumping and scavenging; the balance must find its way into the Thames or remain in the chalk to the danger of the wells of the water company. These considerations are, of course, not the only or the most obvious of the sanitary

¹ Excerpt from Introductory Address to a Course of Lectures on The Principles and Practice of Medicine by Professor Elliotson, M.D., delivered at the University of London, on Wednesday, Oct. 5th, 1831.

2 Reports on Public Health and Medical Subjects. New series. No. 15. London: Wyman and Son, Fetter-lane; Edinburgh: Oliver and Boyd; Dublin: B. Ponsonby. Price 52.

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objections to the system, and on review of the circumstances generally the report strongly recommends the abolition of the cosspools and the substitution of an efficient system of sewers in those parts of the town which are at present unsewered. The present sewers, which convey mainly surface water but also receive the discharges from some house drains and waterchosets, have an outfall into the river. Adherence to the cesspool system has not saved the Gravesend authorities from difficulties in regard to sewage disposal, and an appeal is now pending to the High Court in an action taken by the Thames Conservancy against the town council for polluting the Thames. Among other points to which the report directs attention is the need for closing various insanitary dwellings and demolishing those which are incapable of repair; the state of the slaughter-houses, not one of which, "either from position, construction, or condition, is fit for the slaughtering of animals for the food of man"; and the need for improvements in arrangements for dealing with cases of infectious disease. The most pressing need of the town appears to be that of securing the services of a medical officer of health who is free from the trammels of private practice and who will be responsible for the direction of the work of the sanitary staff. The latter needs strengthening by the appointment of an additional inspector whose qualifications should include experience in food inspection. A good opportunity of making the desired reform will shortly be afforded, as the present medical officer of health of Gravesend is about to retire from the office, and the appointments for the neighbouring areas of Northfleet and Strood are due for reconsideration by the local authorities concerned. By combined action in these districts the appointment of a medical officer of health to give his whole time to public duties could readily be secured. In the neighbourhood of Gravesend a practical example of the advantage of this course is to be found in the Milton combination, which some years ago was in similar circumstances effected, at the instance of the Local Government Board, for the purpose of the joint appointment of a medical officer of health

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

Report on the Health of Belfast for 1908 .- Mr. H. W. Bailie, superintendent medical officer of health of Belfast, has just issued his report on the health of the city of Belfast for 1908, the main facts of which may be summarised as regards figures as follows: The area of the city is 16,504 acres, the population 380,344, and the density 25.8 persons to an acre. The birth-rate was 29.7 per 1000 and the total mortality 19.5 per 1000. The infantile death-rate was 147 per 1000, the zymotic 1.8, and the phthisis death-rate 2.3 per 1000. The number of cases of infectious diseases notified was 3.6 per 1000 of the estimated population, which is less than in 1907, and much less than the average for the ten years 1898— The death-rate is 1.8 below that of 1907 and 1.7 1907. below the average of the previous ten years; that is, a saving of 684 lives as compared with 1907. Although the zymotic death-rate is higher than in 1907, there is a reduction in mortality from each of the principal zymotic diseases as compared with 1907, except typhus fever, pertussis, and diarrhea. 82 fewer cases of enterio fever were notified than in 1907. It is interesting to read that while there has been a slight fall in the birth-rate in Belfast for several years, it has not been so marked as in many of the great cities of Great Britain, the average rate for the 76 great towns of England and Wales having fallen to 27.0 per 1000. The rate in Belfast for 1908 (29.7) is the lowest ever recorded for the city, the average rate for the 10 years ended 1908 being 31 · 1. Of the total deaths—7523 there were 1258 from tuberculous diseases (880 from phthisis and 378 from other forms of tuberculosis), 1210 from diseases of the respiratory system (exclusive of pneumonia), 753 from pneumonia, 281 from cancer, 260 from diarrheea, 186 from measles, and 137 from whooping-cough. There were only 57 deaths from typhoid fever, 33 from diphtheria, 10 from typhus fever, and four from scarlet fever. It is a remarkable fact that while the deaths from scarlet fever, diphtheria, typhoid fever, phthisis, and other forms of tuberculosis were less in 1908 than in 1907, there was an excess in diarrhoea, pneumonia, diseases of the respiratory organs (exclusive of pneumonia), and cancer. Indeed, during the last three years malignant disease is steadily increasing. It is a most deplorable fact-rendering this report in many respects useless-

that while the causes of 4356 deaths are briefly reviewed, "the causes of the remaining 3167 deaths, with the exception of 66 due to cerebro-spiral meningitis, are not accounted for, nor is there any means at my disposal for obtaining these necessary details, and there is no official method for obtaining the name, address, or nature of the filness which caused the death of any individual during the past year" (p. 23 of the report). This lamentable state of affairs, so strongly animadverted upon by the Belfast Health Commission and so frequently pointed out by the late medical superintendent in his reports, still continues. Every excuse is put forward by the corporation for such a culpable state of ignorance of the very A.B.C. of public health but the real one, which is the fact that by promoting a Parliamentary Bill on the question they could have made matters right at any time during the past ten years. In reference to infantile mortality (147 per 1000 births) there is plenty of work to be still done, but it is regrettable to read that "the difficulty of analysing closely the causes of the excessive infantile mortality-rate is rendered impossible by the exceptional circumstances existing in Irish cities, that is, that the medical officer of health does not receive returns showing the number of deaths, with addresses and causes, whereas in English and Scotch cities these returns are made weekly (p. 89 of the report). It is satisfactory to record that the very high death-rate from infantile mortality in 1908 is diminishing in 1909 so far, but we know the cause largely from returns of the registrar of city cemeteries (pp. 92 and 93 of the report), and generalisations based mainly on such statistics alone do not give the scientific accuracy that is needed to adopt preventive measures. The details in the report as to national schools show that marked improvements have been effected in their sanitary condition. The report contains a great deal of interesting information, but is sadly vitiated by the want of knowledge of the causes of death in so many instances, a state of affairs for which the medical officer of health is not responsible; but it is a disgraceful condition of matters that in a great city like Belfast, with a population of 380,344, out of 7523 deaths occurring in 1908 the causes of 3167 (with the exception of 66 due to cerebro-spinal meningitis) are not accounted for, while the medical officer of health has no means at his disposal for obtaining these details.

VITAL STATISTICS.

HBALTH OF BNGLISH TOWNS.

In 76 of the largest English towns 7626 births and 3879 deaths were registered during the week ending Oct. 2nd. The annual rate of mortality in these towns, which had been equal to 13.0 and 12.6 per 1000 in the two preceding weeks, further declined to 12.3 in the week under notice, and was lower than in any week since the middle of August. During the 13 weeks of the past quarter the annual deathrate in these towns averaged only 11.9 per 1000, and in London during the same period the rate did not exceed 11.4 per 1000. The lowest annual rates of mortality recorded in the 76 towns last week were 4.9 in Hornsey, 5.6 in Rotherham, 6.5 in Willesden, and 6.9 in Walthamstow; the rates in the other towns ranged upwards, however, to 17.6 in Great Yarmouth, 18.7 in Huddersfield, 19.1 in Burnley, and 20.0 in Oldham. In London the recorded death-rate last week did not exceed 11.6 per 1000. The 3879 deaths in the 76 towns last week showed a further decline of 94 from the numbers returned in the two preceding weeks, and included 431 which were referred to the principal epidemic diseases, which were referred to the principal epidemic diseases, against numbers declining steadily from 849 to 509 in the five preceding weeks; of these 431 deaths, 263 resulted from diarrhoea, 55 from whooping-cough, 43 from diphtheria, 32 from scarlet fever, 21 from "fever" (principally enteric), and 17 from measles, but not one from small-pox. The 431 deaths from these epidemic diseases last week were equal to an annual rate of 1.4 per 1000, a lower rate than in any week since the middle of August. No death from any of these epidemic diseases was registered last week in Kast Ham, Hornsey, Aston Manor, West Hartlepool, or in five other smaller towns; the annual death-rates therefrom ranged upwards, however, to 3.3 in Sunderland, 3.5 in Rhondda, and to 5.3 both in Bootle and in Hanley. The deaths attributed to diarrhoes in the 76 towns, which

had in the five preceding weeks declined from 676 to 348, further fell last week to 263, but caused annual deathrates ranging upwards to 2.2 in Handsworth, 2.3 in Hull, 3.1 in Rhondda, and 4.5 in Bootle. The fatal cases of whooping-cough, which had been 73, 59, and 51 in the three previous weeks, rose again to 55 last week; the highest annual rates from this disease during the week being 1.1 in Swansea and 1.2 in Wigan. The 43 deaths from diph-theris showed a further increase on the numbers returned in recent weeks, and included 14 in London and its suburban districts, three in Hanley, three in Birmingham and King's Norton, and three in Manchester and Salford. The 32 fatal cases of scarlet fever also showed an increase; 13 occurred in London and its suburban districts, three in Bir-mingham, four in Manchester and Salford, and two in Stockport. The 21 deaths referred to "fever" exceeded the number in the previous week by four, and included three in Manchester and Salford, three in Sheffield, and two in Sunderland. The 17 fatal cases of measles showed a further considerable decline, and were fewer than in any previous week of this year. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospitals, which had steadily increased in the five preceding weeks from 2347 to 2686, had further risen to 2737 on Saturday last; 373 new cases of this disease were admitted to these hospitals during last week, against numbers increasing steadily from 245 to 438 in the six preceding weeks. Of the 1079 deaths registered in London last week, 132 were referred to pneumonia and other diseases of the respiratory system, against 130 and 149 in the two preceding weeks, and were equal to the corrected average number in the corresponding week of the five years 1904-08. The causes of 28, or 0-7 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death registered during last week were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Hull, and in 55 other smaller towns; the 26 uncertified causes of death in the 76 towns last week included seven in Birmingham, five in Liverpool, and two in St. Helens.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 814 births and 470 deaths were registered during the week ending Oct. 2nd. The annual rate of mortality in these towns, which had been equal to 12 · 1 and 13 · 8 per 1000 in the two preceding weeks, declined again to 13.1 in the week under notice. During the 13 weeks of the past quarter the annual death-rate in these Scotch towns averaged 12.6 per 1000, and exceeded by 0.7 the mean rate during the same period in the 76 large English towns. The annual death-rates last week in these Scotch towns ranged from 8.5 and 9.4 per 1000 in Perth and Greenock to 17.6 in Paisley and 17.9 in Dundee. The 470 deaths from all causes in the eight towns showed a decline of 24 from the number returned in the previous week, and included 48 which were referred to the principal epidemic diseases, against 47 and 52 in the two preceding weeks. These 48 deaths were equal to an annual rate of 1.3 per 1000, which was slightly below the mean rate from the same diseases last week in the 76 English towns. The 498 deaths from these diseases in the Scotch towns last week included 22 from diarrhosa, eight from diphtheria, seven from "fever," six from scarlet fever, and five from whoopingcough, but not one either from measles or small-pox. deaths attributed to diarrhosa in the eight towns, which had steadily declined in the five preceding weeks from 47 to 20, rose again to 22 last week, of which nine occurred in Glasgow, eight in Edinburgh, and three in Leith. The eight deaths from diphtheria corresponded with the number in the previous week, and included four in Glasgow and two in Edinburgh. Of the seven deaths referred to "fever," of which five occurred in Glasgow, and one each in Aberdeen and Paisley, five were certified as cerebro-spinal meningitis, and one each as enteric and typhus. The six fatal cases of scarlet fever included two both in Glasgow and in Edinburgh; and three of the five deaths from whooping-

exceeded by five the number in the corresponding weeks of last year. The deaths returned in the eight towns last week included 22 which were referred to different forms of violence, of which eight occurred in Glasgow, five in Edinburgh, three in Dundee, and two in Greenock. The causes of 24, or 5-1 per cent., of the deaths in the eight towns last week were not stated or not certified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0.7 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 16.8, 17.3, and 19.5 per 1000 in the three preceding weeks, declined again to 17.5 in the week ending Oct. 2nd. During the 13 weeks of the past quarter the death-rate in the city averaged 17 2 per 1000, whereas the mean rate during the same period did not exceed 11 4 in London and 12.3 in Edinburgh. The 134 deaths of Dublin residents during last week showed a decline of 15 from the number returned in the previous week, and included nine which were referred to the principal epidemic diseases, against numbers declining steadily from 37 to 10 in the five preceding weeks. These nine deaths were equal to an annual rate of 1.2 per 1000, the rate from the same diseases last week being 1.3 in London and 2.2 in Edinburgh. Of these nine deaths from the principal epidemic diseases in Dublin last week, five resulted from diarrhoea, two from "fever," and two from whooping-cough, but not one from measles, scarlet fever, diphtheria, or small-pox. The fatal cases of diarrhoes in Dublin have steadily declined in the last six weeks from 30 to five. Of the 134 deaths at all ages in the city last week 20 were of infants under one year of age and 44 of persons aged upwards of 60 years; the deaths of infants showed a marked decline from the recent weekly numbers. Four inquest cases and four deaths from violence were registered during the week, and 56, or 41.8 per cent., of the deaths occurred in public institutions. The causes of three, or 2.7 per cent., of the deaths in Dublin last week were not certified either by a registered medical practitioner or by a coroner; in London the cames of all but one of the 1079 deaths were duly certified, while in Edinburgh the proportion of uncertified causes was equal to 9.2 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

In accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Fleet-Surgeon Charles Geekie Matthew has been placed on the Retired List at his own request (dated Sept. 30th, 1909).

The following appointments are notified:—Surgeon: W. Bradbury to the Vulcan, additional, lent temporarily. Civil Practitioner: T. Derrick to be Surgeon and Agent at Dysart.

ARMY MEDICAL SERVICE.

Lientenant-Colonel Edward Butt, from the Royal Army Medical Corps, to be Colonel, vice J. G. Harwood, retired (dated Sept. 15th, 1909).

ROYAL ARMY MEDICAL CORPS.

Major G. Dansey-Browning has been appointed to the Aldershot Command as Assistant Sanitary Officer. Lieutenant C. Cassidy has been selected for employment with the Egyptian Army. Major H. O. B. Browne-Mason and Captain H. Simson have been appointed to India. Captain Francis Spring Walker has been appointed medical officer in command of effective troops at Crownhill (Plymouth). Captain Arthur Henry MacNeill Mitchell has been appointed medical officer in command of effective troops at Plymouth.

INDIAN MEDICAL SERVICE.

and Paisley, five were certified as cerebro-spinal meningitis, and one each as enteric and typhus. The six fatal cases of scarlet fever included two both in Glasgow and in Edinburgh; and three of the five deaths from whooping-cough occurred in Edinburgh. The deaths referred to diseases of the respiratory system in the eight Scotch towns, which had been 25, 41, and 59 in the three preceding weeks, further rose to 66 in the week under notice, and

Captain (dated Feb. 1st, 1909): William Anderson Mearns. To be Lieutenants (dated Jan. 30th, 1909): Henry Charles Gustavus Semon, Andrew Monro Jukes, Gwilym Gregory James, William David Keyworth, Berkeley Gale, John Howard Horne, Harold Holmes King, Richard Edward Flowerdew, Mozaffer Din Ahmed Kureishi, John Glendinning Bryden Shand, and Alfred John Lee.

The King has also approved of the transfer to the temporary Half-pay List of the following officers: Captain Richard Francis Chetwynd Talbot (dated July 24th, 1909).

His Majesty has also approved of the following retirements:—Lieutenant-Colonel Terence Humphreys Sweeny (dated March 1st, 1909), Lieutenant-Colonel Francis Frederick Perry, C.I.E. (dated June 14th, 1909), Lieutenant-Colonel Stephen Little (dated June 22nd, 1909), Lieutenant-Colonel Richard John Baker (dated August 12th, 1909).

TERRITORIAL FORCE.

King's Colonials: Surgeon-Lieutenant William S. Henderson to be Surgeon-Captain (dated April 1st, 1908).

Royal Army Medical Corps.

1st Welsh Field Ambulance: Lieutenant Thomas Smyth resigns his commission (dated Sept. 3rd, 1909).

3rd Wessex Field Ambulance: Captain Herbert J. Godwin resigns his commission (dated August 25th, 1909).

1st Western General Hospital: Llewellyn Arthur Morgan to be Captain, whose services will be available on mobilisation (dated Sept. 22nd, 1909).

Attached to Units other than Medical Units.—Lieutenant Alan Ayre-Smith to be Captain (dated May 22nd, 1909). Captain Edmund P. I. Coke resigns his commission (dated Sept. 13th, 1909).

For Attachment to Units other than Medical Units.—John Orton Hollick to be Lieutenant (dated August 12th, 1909).

DEATHS IN THE SERVICES.

Brigade-Surgeon William Pearson Ward (late Royal Artillery), recently at Hove, in his 86th year. He joined the medical staff of the army in 1847 as assistant surgeon, became surgeon in 1855, surgeon-major in 1867, and retired in 1880. He served through the Crimean campaign of 1854-55, and was present at the affair of McKenzie's Farm, the battles of Alma, Balaclava, Inkermann, and the siege of Sebastopol, including the assault on the Redan. He was also present at the bombardment and surrender of Kinburn (medal with four clasps, a Knight of the Legion of Honour, and Turkish medal).

TUBERCULOSIS IN THE NAVY.

Replying to Mr. Summerbell in the House of Commens on Oct. 5th. Mr. McKenna said that the number of officers and men finally invalided from the service (including Marines) for tuberculosis for the years 1899 to 1908 was 2673, made up as follows: 1899, 207; 1900, 165; 1901, 232; 1902, 288; 1903, 334; 1904, 353; 1905, 331; 1906, 214; 1907, 266; 1908, 283. No special provision was made for their treatment on their discharge from a home or hospital. In reply to a further question, the First Lord of the Admiralty said that all men before being accepted for service were medically When they were discharged suffering from tuberexamined. culosis no notification was sent to the medical officer of any particular town.

A DIRECTORY OF THE PUBLIC HEALTH SERVICE. -Acting on suggestions from many quarters, the Editor of the Medical Officer will publish early in the new year a directory of the whole Public Health Service in England, Scotland, and Wales. The directory will be on entirely new lines, and will include full particulars of the whole staff of sanitary authorities and school inspection officials. If any medical officer has not received a form for filling up he is requested to communicate with the Editor at 36, White-friars-street, E.C. It is hoped that the forms will be returned at once, as otherwise the labour of compiling the directory will be greatly increased. We have received a special number of the *Medical Officer* containing the bound and indexed records of the Health Congress held in Leeds in July as they appeared daily during that Congress, of which the Medical Officer was the official journal. Copies can be obtained for 2s. post free from the above address.

Correspondence.

"Audi alteram partem."

THE TREATMENT OF SYPHILIS BY INTRA-MUSCULAR INJECTIONS OF INSOLUBLE PREPARATIONS OF MERCURY.

To the Editor of THE LANCET.

SIR,—With reference to Major H. C. French's paper in THE LANCET of Sept. 25th, pp. 920 st seq., entitled "The Treatment of Syphilis by Intramuscular Injection of Insoluble Salts of Mercury as Contrasted with the Inunction Method," and which purports to be a critical rejoinder to a paper of mine read last June before the American Medical Association at Atlantic City, I would point out, in the first place, that the use of the term insoluble satts of mercury is not applicable to grey oil, the mercury in that preparation being in a metallic state.

I will now reply to Major French's criticisms and contradictions. As to my statement that many British dermatologists gave evidence before the Army Commission of Inquiry adverse to the use of mercurial cream, although apparently they had no actual experience of the method, it

is correct, and I maintain it.

Major French says that I omitted the deaths on record in the British army in the report of the above Commission of I did omit them, although they bear out my contention and would have lent further support to my argument, and for a very good reason. I did not consider it necessary to refer to our army in the matter, and I limited myself to oft-quoted fatal cases that had occurred abroad. As Major French has thought fit to publish the British army cases in the columns of THE LANCET, cases which, I should like to add, date from 1900-01, when the method was not perfected and men were feeling their way, I am bound to examine them. With regard to those cases reported by Surgeon-General Fawcett, R.A.M.C., it would certainly be interesting to have details as to the condition of the patients, previous illnesses, and also the state of the mouth and teeth, urine, &c., before and during the treatment by means of injections of mercurial cream. I take this opportunity of saying that I have never myself used the mercurial cream as employed in the British army, but French preparations of huile grise only.

Major French says he "never gives more than six weekly injections of 10 minims each of the standardised mercurial cream (Lambkin's formula)." He adds: "This contains one grain of metallic mercury in each dose. I allow an interval of from two to three months, then another course as above,

and so on for two years."

Before taking Surgeon-General Fawcett's four first cases seriatim I would point out in limine that doses of two grains of metallic mercury were injected each time, double the dose mentioned by Major French. This is definitely stated for Cases 1, 2, and 4 in the details published in THE LANCET by Major French himself, which I have before me. As to Case 3, the dose is not definitely stated, but I think I may assume, going by the dates, that the same preparation was

used for this patient also.

Now as to the cases. Case 1: The patient had, it is stated, 36 grains in a period of 30 weeks—viz., 18 injections of two grains of mercury each. In Case 2 the patient received 32 grains of metallic mercury in injection (16 injections in all of two grains Hg each) from Dec. 18th, 1900, to May 1st, 1901—that is to say, 18 weeks. As to Case 3, the patient had 19 injections of standardised grey oil, but the doses given are not mentioned. I think I am justified, however, in assuming, and Major French will correct me if I am mistaken, that the amount of mercury was $17 \times 2 = 34$ grains over a period of 32 weeks (June 6th, 1900, to Feb. 7th, 1901), followed on March 13th and 27th by two more, making a total of 38 grains. This case was not fatal, but the patient was very ill. Case 4: This patient received nine injections of mx. (gr. 2 of Hg) = 18 grains from January 19th to

¹ The Intramuscular Treatment of Syphilis, with Special Reference the Insoluble Preparations of Mercury: a Critical Review, HE LANCET, July 24th, 1909, pp. 212 et seq. to the Insoluble Preparations of Mercu THE LANCET, July 24th, 1909, pp. 212 et seq.

April 10th, 1901, that is, say, 12 weeks. This patient recovered.

Summarising these four cases, two of which terminated fatally, the patients received weekly quantities of mercury which work out as follows:—Case 1: 36 grains over a period of 30 weeks = 1_1 grains a week for 30 weeks. Case 2: 32 grains over a period of 18 weeks = 1_2 grains a week for 18 weeks. Case 3: 34 grains over a period of 32 weeks = 1_1 grains a week for 32 weeks. Case 4: 18 grains over a period of, say, 12 weeks = 1_2 grains a week for 12 weeks.

Let us compare these figures with those based on Major French's six weekly injections of one grain each followed by from two to three months rest. Here we have, allowing two months rest, six grains of Hg over a period of 14 weeks = \frac{3}{2} grain a week; or allowing three months rest, six grains of Hg over a period of 18 weeks = \frac{1}{2} grain a week. Comparing the latter with the period of 18 weeks of Case 2, during which the patient received 32 grains in all, or 1\cap{7} grains a week, nearly two grains, the discrepancy is great.

Taking two of the periods recommended by Major French, we have, with two months rest, 12 grains of Hg given over a period of 28 weeks = $\frac{5}{2}$ grain a week; and allowing three months rest we have 12 grains of Hg over a period of 36 weeks = $\frac{1}{2}$ grain a week. Compare this with Case 1, in which the patient received 36 grains in 30 weeks, or 1_{1}^{1} grains a week; or with Case 3, in which 34 grains were injected over a period of 32 weeks, or 1_{1}^{1} grains a week; or, again, with Case 4, in which 18 grains were given in 12 weeks, or $1_{\frac{1}{2}}$ grains a week. If it be objected that the periods should be reckoned from the first injection to the twelfth, and that is making a concession of time to Major French, we have with two months rest 12 grains of Hg distributed over a period of 20 weeks = $\frac{3}{2}$ grain a week; or, with three months interval, 12 grains over a period of 24 weeks = $\frac{1}{2}$ grain a week.

On Major French's own showing the amount injected should be somewhere about half a grain a week. It is a pity that Major French in his obvious desire to crush me with his critical rejoinder did not examine these four cases a little more critically before quoting them. I repeat I did not include them in my American paper, although these cases would have supported my contention that in fatal cases and in bad cases of stomatitis the doses of mercury had been too large. Indeed, when I was preparing my paper I decided to leave out all references to cases occurring in British army practice, and I limited myself to the examination of cases recorded in civil practice, so that Major French's contradiction of my statement that intramuscular injections of insoluble mercurial preparations are not employed to any extent in England and the United States does not amount to anything. Incidentally in my paper I did refer to the fact that the method was used in the British army, thanks to the efforts of Colonel Lambkin, whose pioneer work deserves every recognition. Perhaps Major French overlooked this when he read my paper, but I think that before contradicting me so categorically he might have done me the honour of making sure of his ground.

I do not mind meeting Major French half way by

I do not mind meeting Major French half way by examining the four cases reported by Surgeon-General Fawcett and which occurred in Egypt, but I refuse to follow him to India and to go east of Suez. Syphilis among soldiers in India needs to be taken very much on its merits. East is East and West is West,

"And the wildest dreams of Kew are the facts of Khatmandhu, And the crimes of Clapham chaste in Martaban."

Major French misquotes me when he says that I state: "I have only employed the intramuscular injections in my private practice. No ill-effects ensue after 10-12 consecutive weekly injections of doses varying from 1-10 centigrammes." What I really did say is this: "As far as my own work goes, I may say I have only employed the intramuscular injections of insoluble preparations in my private practice. I have never seen any complications arise. My results have been very satisfactory and I consider the method a most valuable one, especially when any serious syphilitic complication threatens. My experience of the carly abortive intense (italics are in my paper) treatment has been from the nature of private practice very limited, and I have not felt justified in applying it to its full extent. But where full control of the patient could be obtained I have found no ill-effects ensue after 10 or 12 consecutive weekly injections of doses varying from 7 to 10 centigrammes."

I would insist here that my reference to the use of 10 to 12 injections relates to the so-called early intense abortive treatment of syphilis, and not to ordinary treatment. Major French's mangled quotation of my printed words is a missepresentation of my views and practice. To take two sentences totally unrelated to each other and quote them in direct consecutive order—that is, without any indication that there were other sentences between them—is an unwarrantable procedure. The matter is made worse by the remarks of Major French which immediately follow his misquotation of what I said and wrote. I insist on this, as such a way of putting it must necessarily create prejudice.

As to other points, I may tell Major French that in his references to severe mercurial dermatitis he is sending coals to Newcastle as far as I am concerned.

His remarks as to Professor Fournier's attitude in the matter of insoluble preparations are not up to date. I know Professor Fournier and his son, Dr. Edmond Fournier, personally. They both employ huile grise in intramuscular injection. Indeed, it is not so long ago that a patient was directed to me with a request from Professor Fournier himself that I should continue injections of huile grise in the case. I have habitually used Dr. Edmond Fournier's syringe specially devised for huile grise, to which I alluded in my paper.

With regard to the two fatal cases following inunction treatment, one of which I took from the practice of Dr. Mayer of Aix-la-Chapelle,² the fact remains that the inunctions led to a fatal issue. These are not the only two cases that might be brought forward against the inunction treatment, but I was careful to add in my paper that "that would surely be no reason for damning a method that is valuable."

In my American paper I dealt fairly and squarely with the whole matter, as far as the limits of time would allow me. I stated distinctly that in the treatment of syphilis I was eclectic as to the method to be employed; all methods had their place. Moreover, I insisted on the importance of not treating cases by intramuscular injections of insoluble preparations in a routine way, adding that in certain circumstances which I enumerated, insoluble preparations were absolutely contra-indicated. I did not advocate their use for all and sundry, but put in a plea for a better recognition of a valuable addition to our armamentarium in fighting syphilis. I looked at all sides of the question and did my best. I may say that at Atlantic City, although many among my audience were not favourably inclined to insoluble preparations of mercury, they quite appreciated the fact that I had dealt with the method frankly and fairly, and that I had pointed out its dangers as well as its advantages.

I am, Sir, yours faithfully, Harley-street, W., Sept. 27th, 1909. GEORGE PERNET, M.D.

IS SNOW-WATER UNWHOLESOME?

To the Editor of THE LANCET.

SIR,—If I may add a few words to the discussion upon the influence of snow-water that has been taking place in your columns recently I should like to draw attention to some interesting though almost forgotten observations made amongst the Cree Indians in North-West Canada in the year 1819-20, by John Richardson, M.D., F.R.S., F.L.S., who accompanied Captain John Franklin, R.N., F.R.S., upon the first and second of his voyages to the shores of the Polar seas in search of the North-West passage.

Dr. Richardson's observations in his own words are as follows: "Bronchocele, or goitre, is a common disorder at Edmonton. I examined several of the individuals afflicted with it, and endeavoured to obtain every information on the subject from the most authentic sources. The following facts may be depended upon. The disorder attacks those only who drink the water of the river. It is indeed in its worst state confined almost entirely to the halfbred women and children, who reside constantly at the fort, and make use of river water, drawn in the winter through a hole cut in the ice. The men, being often from home on journeys through the plain, when their drink is melted snow, are less affected; and, if any of them exhibit during the winter some incipient symptoms of the complaint the annual summer voyage to the sea-coast generally effects a cure. The natives who confine themselves to snow water in the

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winter, and drink of the small rivulets which flow through the plains in the summer, are exempt from the attacks of this disease. These facts are curious, inasmuch as they militate against the generally received opinion that the disease is caused by drinking snow-water—an opinion which seems to have originated from bronchocele being endemial to subalpine districts. The Saskatchawan, at Edmonton, is clear in the winter, and also in the summer, except during the May and July floods. The distance from the Rocky Mountains (which I suppose to be of primitive formation) is upwards of one hundred and thirty miles. The neighbouring plains are alluvial, the soil is calcareous and contains numerous travelled fragments of limestone. At a considerable distance below Edmonton, the river, continuing its course through the plains, becomes turbid, and acquires a white colour. In this state it is drunk by the inmates of Carlton House, where the disease is known only by name. It is said that the inhabitants of Rocky Mountain House, sixty miles nearer the source of the river, are more severely affected than those at Edmonton. The same disease occurs near the source of the Elk and Peace Rivers; but, in those parts of the country which are distant from the Rocky Mountain Chain, it is unknown, although melted snow forms the only drink of the natives for nine months of the year. A residence of a single year at Edmonton is sufficient to render a family bronchocelous. Many of the goitres acquire great sise. Burnt sponge has been tried and found to remove the disease, but an exposure to the same cause immediately reproduces it. A great proportion of the children of women who have goitres are born idiots, with large heads, and the other distinguishing marks of cretins. I could not learn whether it was necessary that both parents should have goitres, to produce cretin children; indeed, the want of chastity in the half-bred women would be a bar to the deduction of any inference on this head."

I am, Sir, yours faithfully

Wimpole-street, W., Oct. 5th, 1909.

HERBERT FRENCH.

DOMICILIARY MEDICAL TREATMENT UNDER THE POOR-LAW.

To the Editor of THE LANCET.

Sire,—With your permission I should like to say a few words about the "two most cogent reasons" that Dr. H. Beckett-Overy refers to in his letter published in your issue of Oct. 2nd, p. 1026, which he objects to being defined as "mere negations." The first reason I specifically dealt with, and pointed out the impossibility of recovering charges by any legal process from "poor persons," where the first requisite under any enactment would be to prove ability to pay. I instanced the failure in the past to recover anything beyond the most trivial proportion of the relief granted "on loan" under the present system, the principle of which is indistinguishable from that recommended by both the Majority and Minority Commissioners. The restatement of these recom-mendations without any reference to my criticism Dr. Beckett-Overy does not consider a "mere negation." In his last letter he states that £300,000 have been recovered in various ways by all the authorities having any connexion with the Poor-law. That this is an attempt to meet my criticism I am quite ready to admit, but I demur to its cogency. For aught I know, the £300,000 recovered may be as trifling a proportion of the amount expended as the "relief on loan" recoveries. The inclusion of lunacy institutions nullifies any value it might have as a comparison, as it is notorious that the great bulk of the middle classes of the country make use of these instead of private institutions, with the full knowledge that they must pay for their relatives. From many of these no doubt the cost could be readily recovered. With regard to the second reason-viz., the effect that inability to choose their doctor would have in preventing abuse of gratuitous medical attendance—nothing was said in Dr. Beckett-Overy's first letter, unless it is to be inferred from the general approval of the views of the Minority Commissioners. I admit I called it a mere negation, and do not see why I should alter my opinion. The suggestion now made that this would be a sufficient check is, in my opinion, a very weak argument. No doubt, among the large class of poor persons to whom I refer, most would prefer to choose their doctor, but I have no hesitation

in saying from the experience of a lifetime among that class that the choice would be largely swayed by the cost to them-Where State-guaranteed medical attendance could be had for nothing it would show very unusual belief in a particular doctor for the patient to prefer the latter if he had to pay him. It is a fact only too cognisant to practitioners among the poor that a difference of sixpence in the fee will detach a patient from a doctor who has attended him for years and send him to an unknown new-comer.

I am, Sir, yours faithfully. London, Oct. 2nd. 1969.

MAJOR GREENWOOD.

DISPENSERS IN PUBLIC INSTITUTIONS FOR THE SICK.

To the Editor of THE LANCET.

SIR.—I am instructed to forward you a copy of a letter dealing with the question of dispensing in public institutions which has been drawn up by the National Union of Assistant Pharmacists and which is to be sent to those concerned as occasion arises. - I am, Sir, yours faithfully,

EDW. S. FRANCIS, M.P.S., 9. Honorary General Secretary. Birmingham, Sept. 29th, 1909.

[COPY.]

[COPT.]

The National Union of Assistant Pharmacists has considered the question of dispensing in public institutions and has decided that it in the public interest that the attention of public bodies and others having the appointing of a dispenser should be drawn to the following facts and for which we respectfully ask your consideration:—

(1) The Pharmacy Act restricts the open sale of poisons to duly qualified "chemists and druggists" who have been trained and examined by the Pharmaceutical Society, so that they are fully informed as to the nature and properties of poisons. We submit that it is a necessity for the public safety that poisons which are dispensed in large quantities in public institutions should be under the control of a fully qualified individual, and we therefore ask you to appoint a registered "chemist and druggist" (i.e., a pharmacist) as dispenser.

(2) The remuneration officred for the services of a dispenser is frequently such as to admit only of securing persons holding certificates other than the diploma of the Pharmaceutical Society (the recognised standard of efficiency), and as the training for the diploma is long and expensive, we consider £130 per annum to be the minimum salary, irrespective of sex, for the professional and responsible services of a dispenser.

We seek your support in securing to us these rightful conditions in

dispenser.

We ask your support in securing to us these rightful conditions in recognition of the fact that it is necessary for us to undergo special training in the interests of the safety and service of the community.

Signed on behalf of the National Union of Assistant Pharmacists.

THE BENHAM TOP.

To the Editor of THE LANCET.

Sir,—In Dr. F. W. Edridge Green's valuable paper on the Theory of Vision, published in THE LANCET of Oct. 2nd, brief reference is made to the Benham top, and an explanation is offered to the effect that the lines appear red because this is the contrast colour to the green which is seen as the after-image of the black half of the disc. Assuming that black does give an after-image of green to normal sight in a bright light, Dr. Edridge-Green seems to overlook the fact that the lines being themselves black should have an after-image of green. In a paper by Mr. F. Peake Sexton published in the Illuminating Engineer last May what has seemed to me a complete explanation of the colour effects in the Benham top has been offered. His theory is based on the fact that the duration of the impression of light on the retina varies for different wave lengths, and he shows how this circumstance completely accounts for all the colour effects of the top and their reversal on reversing the direction of rotation. It is a question of the rate both of growth and decay of colour sensation.

Colchester, Oct. 1st, 1003.

I am, Sir, yours faithfully, CHARLES E. BENHAM.

CHRISTIAN SCIENCE IN RELATION TO THE WORKMEN'S COMPENSATION ACT.

To the Editor of THE LANCET.

SIR.—What is the doctor's duty in the following case? very intelligent artisan, whom I had been treating some two years ago for syphilis, came to me recently complaining of giddiness, reeling, and other cerebral symptoms which I concluded were caused by a syphilitic tumour. Having plainly expressed my opinion, I told him that it was probable he would be cured if he continued treatment long enough. "I came to you," quoth he, "for diagnosis, not for treatment.

I have joined the Christian Scientists and cannot take any of your medicines. I believe I shall be cured by prayer treatment." In reply, I stated that as his work involved going up and down ladders constantly there would be grave danger that the tumour would result, if untreated, in his falling off the ladder, with perhaps fatal results. I hinted that although he might have made up his mind to chance his own life, still it would not be fair to have his employer mulcted for a fatal accident which was the result of his own obstinacy. Hence I suggested it was his duty to inform his employer of the fact that he had a cerebral tumour and declined treatment.

The man candidly confessed that the employer, although insured, would certainly dismiss him if he know the truth, but he refused treatment. Does any duty lie on the practitioner to inform the employer, either to save the man's life or the employer's pocket? In my opinion the duty of the doctor is only to the patient, but I should like to hear other opinions on the case.—I am, Sir, yours faithfully,
J. C. McWalter, M.D. Brux., F.F.P. Glasg.

Dublin, Oct. 3rd, 1909.

DEATH CERTIFICATION AND CORONERS. To the Editor of THE LANCET.

SIR,—Referring to the case of the coroner and Dr. F. C. Coley, published in THE LANCET of July 24th, p. 243, I should like to give you particulars of a similar case which came under my notice in which the coroner told me to give a certificate. An electrician to a pit was attending to my electric bells one evening, when he asked me to examine his chest on account of a pain from which he was suffering. I diagnosed heart disease and told him that he should rest for three months. I had never seen the man before and did not see him alive again. One morning some months afterwards I was called up to the pit where he worked to see a man who had died suddenly. The deceased turned out to be the electrician. I happened to mention the fact that I had advised him to rest, and so on, which information was retailed to the coroner's officer when he reached the pit, and in due course came to the ears of the coroner, who telephoned me asking me to give the certificate, though a period of some months had elapsed since I had seen him the one and only time.

Only recently I gave a certificate of death "due to ptomaine poisoning," at the same time out of courtesy telephoning the coroner that I had done so, and that the primary cause was probably ice-cream. I was much surprised to hear from him that I ought not to have given a certificate, though the patient had been visited three times in 24 hours by my colleague and myself, thus establishing attendance during last illness, and on asking if I should do a post-mortem examination was told that if I were able to give a certificate I could surely satisfy the jury as to the cause of death without a post-mortem. I hold that there should not have been any inquest, or, if one was deemed necessary, a post-mortem examination should also have been made. I am, Sir, yours faithfully,

THE BOOTS OF THE TERRITORIAL ARMY.

To the Editor of THE LANCET.

SIR,-Your correspondent, in his interesting article on the Territorial Medical Service in THE LANCET of Sept. 25th, draws attention to some of the disabilities which cause bad marching amongst the troops. Whilst endorsing all he says as to the importance of keeping the feet clean, I think the necessity for adequate covering for them requires an equal amount of consideration. As the result of a "foot inspection parade," and from cases which reported sick, I found a great number of the men suffered after the first day or two of marching during the late camp on Salisbury Plain from "blisters on the soles of the feet," abrasions, and cracks about the heels and over the dorsum of the foot, due chiefly to the unsatisfactory boots worn by most of the troops. I found these lesions frequently present even amongst those of the men who were particular in keeping the feet clean.

allowed to each man is of little use to him in obtaining a good pair. The result is that in many of the regiments a great variety of "foot-wear" is in use, and a lot of the boots fit badly and are evidently of a peer quality. Since my return from camp I have been shown by a practical bootmaker a cheap and very commonly used form of brown boot, cut down the centre from top to toe. Under a thin leather sole there is a pad consisting apparently of brown paper; this readily, on wet roads and from the heavy dew on the grass noticed at each early morning parade, gets soaked through and remains sodden. As the men have no means of drying their boots they are obliged to wear them in this condition, resulting, I feel sure, in chills and an unhealthy state of the skin of the soles of the feet, causing them easily to blister and crack. The plucky way a great many of the men continued to march with their feet in the painful condition I frequently noticed is another proof of the general keenness mentioned in most of the daily papers. I am told that it is possible to supply an excellent brown boot made of good leather, and treated by a new process, whereby it is rendered absolutely and permanently waterproof; my bootmaker informs me this process is known as the "Forbec." Boots made of this leather can be obtained for 10s. per pair. The objection, I suppose, to issuing boots to the men is that they might use them for other purposes than service use, but surely this could be got over, as I believe it is in the regular army, by making a man either produce the boots issued (in the case of a Territorial before he goes to camp) or getting himself a similar pair and deducting the cost from his pay if necessary.

I am, Sir, yours faithfully,
LIEUTENANT, R.A.M.C.T.

Oct. 2nd, 1909.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

The University: Reception of Students.

THE University session opened on Sept. 30th with Sir Isambard Owen's address, and on the evening of Oct. 2nd a reception was held at the University for students and staff. Mr. Lewis Fry, on whose behalf the invitations were issued, was unwell and could not be present; but the guests were received by Lady Owen, Professor and Mrs. Lloyd Morgan, and Professor and Mrs. Michell Clarke. Music was provided by the University Musical Society, under the direction of Mr. Cedric Bucknall, the University lecturer in music. All round the hall in which the reception was held were ranged tables at which various student societies, over 20 in number, were represented. These will, it is hoped, be united into a guild of undergraduates, which was provided for under the charter. In the centre of the room was a stand exhibiting various objects of interest brought home by Lieutenant Shackleton's Antarctic Expedition. These were kindly provided and supervised by Mr. R. E. Priestley, who was geologist to the expedition, and whose brother is lecturer on botany to the University. There was a very large number of students present, and the staff was well represented also.

Hostel for Bristel University.

Clifton Hill House, formerly the residence of Dr. Symonds, has been purchased as a hostel for Bristol University. Two ladies have subscribed £2000 towards the cost of the undertaking.

The Glowcestershire Royal Infirmary.

At the quarterly general meeting of the governors of the Gloucestershire Royal Infirmary held on Sept. 30th the chairman (Colonel Curtis Hayward) stated that the expenditure of the institution last year exceeded the income by £1000. He added that the committee had decided, unless it had increased financial support, that it would reduce expenses by closing a ward and reducing the number of nurses. Colonel Hayward added that this would be a calamity for the city and county, but he was afraid the present generation did not quite appreciate its duty towards the infirmary, the work and cost of which were ever increasing.

The Declining Birth-rate.

It appears that no boots are issued to the Territorial A member of the Bristol education and health committees coldier on enlistment, and the 2s. 6d. boot money has drawn attention to the declining birth-rate at Bristol. A member of the Bristol education and health committees The matter was alluded to at a recent meeting of the health committee, when it was stated that in 1884 the birth-rate was 32.6, a year ago it was 24.2, and now it is as low as 23.

Medical Inspection of School Children.

At a meeting of the Tavistock (Devon) school attendance sub-committee held recently it was reported that some parents had objected to their children being examined in an elementary school by the county medical officer of health. It was stated that the law allowed the parents to act in this manner, and the sub-committee, after some discussion, decided to recommend the county authority to take steps, if possible, to get the law amended so as to prevent parents being able to withdraw their children from medical inspection.

The Devon County Council and the Prevention of Consumption.

The Devon County Council at its last meeting decided to purchase and circulate pamphlets of the National Association for the Prevention of Consumption. The council further determined that the education committee be requested to consider the question of providing instruction as to the means which should be adopted to secure protection against tuberculosis, and the council also suggests that the scheme of instruction should include the giving of demonstrations and the holding of exhibitions.

Bristol Royal Infirmary.

Mr. Francis Tagart has promised £1000 towards the extinction of the adverse balance remaining over from the infirmary accounts of the last financial year.

Oct. 4th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

'The Work of the Corporation Sanitary Committee.

THE general work of the sanitary committee has been very considerable. It has during the year dealt with, in one way or another, 14,272 houses, warehouses, and other buildings, 1582 lodging-houses, 3176 dairies and milkshops, 4644 infectious cases, drainage, the sanitary accommodation of beerhouses, 3257 houses under the Factory Acts, 510 bake-houses, fire-escape provision in factories and workshops, the hours of work in shops, the provision of seats for assistants, and many other things. During the year 2335 insanitary dwellings were certified to the committee. Of these 2164 were ordered to be closed, while the decision on 171 was adjourned, but as the owners of 1695 agreed to make the required alterations 469 summonses only were actually served. The corporation has a municipal lodginghouse, which has been well attended during the year, the number accommodated averaging over 343 per night. The number accommodated averaging over 343 per night. The cubicles number 353, a small margin, and it has been decided to extend the accommodation by the addition of 123 more cubicles. As regards the adulteration of food, it is not satisfactory to find a slight increase from 3.42 per cent. last year to 3.74 this year. This is accounted for chiefly by the increased number of samples of adulterated coffee and spirits. Presumably the increased tax on spirits has stimulated fraudulent ingenuity. As regards butter adulteration, it is so profitable to the dealer that it will be difficult to prevent it till the justices see fit to deal more severely with the cases brought before them. It is a sordid, mean thing to adulterate food, and those who suffer from it are the poorer classes who ought to obtain more protection from it than the law seem willing to give.

Black Smoke.

One of the difficult tasks the sanitary committee of the city council endeavours to accomplish is the diminution of the black pall of smoke usually hanging over Manchester, and it cannot be said that so far its efforts have been crowned with success. In the year ending in April last 178 cases were reported where black smoke had poured forth from chimneys for two minutes or more in the half-hour. Of these, 131 were referred to the magistrates to be dealt with, and in the other cases the offenders were cautioned. There have been great complaints of the evilsmelling black smoke given out by railway and road locomotives, and in several instances prosecutions have been

The penalties usually imposed are too trifling to necessary. check, much less to suppress, this nuisance; or to put it more euphemistically in the words of the report, the penalties "are not such as to assist the committee in the suppression of smoke nuisances." These small penalties will not, perhaps, seem so remarkable when it is remembered that most of the magistrates have been accustomed to the sight of black smoke issuing from tall chimneys since they were first able to open their eyes and to look upon this filthy emanation as an ideal part of the landscape. appeals to their commercial instinct, for many of them are interested in mills and their chimneys, and think, moreover, that black smoke is a sign of prosperity, not having been educated up to the fact that this enormous waste of fuel is unnecessary and avoidable. Manchester also suffers from the sins of her neighbours, for she is almost surrounded by a ring of tall chimneys beyond her jurisdiction, sending forth black smoke as if their existence depended on their efficiency in that variety of manufacture. Salford has for years been among these creators of a most hurtful nuisance. The tall mill chimneys are well backed up by the lower ones of various works, hotels, &c., all over the city. Of course, the black smoke and smuts pervading the town cause serious loss to those who deal in or manufacture light delicate fabrics, to say nothing of the depressing effects of constantly dwelling in such an atmosphere, or of its pernicious influence on those who have sensitive throats or chests.

Ladies as Workhouse Medical Officers.

At the meeting of the Prestwich guardians on Sept. 30th a discussion arose as to the suitability of a lady being appointed to the position of assistant workhouse medical officer. This was in consequence of five out of the six answers to the board's advertisement for applications being from ladies. It was eventually decided, however, that the board should advertise again, and that it should be made clear that the appointment could only be held by a man.

Oct. 5th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Appointments at the Western Infirmary, Glasgow.

AT a meeting of the directors of the Western Infirmary, Glasgow, held last week the following appointments were made:—Dr. J. Wyllie Nicol, physician to the wards for diseases of the skin; Dr. J. Goodwin Tomkinson, dispensary physician for diseases of the skin; Mr. A. H. Edwards, dispensary surgeon; and Dr. Roy Young, extra-dispensary surgeon.

An Epidemiological Study of Measles in Glasgow.

In his report on the severe measles epidemic which occurred last year in Glasgow, Dr. A. K. Chalmers, the medical officer of health of the city, affords food for thought to medical men and also to those interested in school board affairs. Seldom if ever before has there been opportunity for watching the rise and fall of a serious epidemic of measles in a large city owing principally to the fact that the disease is not notifiable. For some years past, however, there has been an increasing interchange of information with the school boards, and by this means in the recent epidemic the medical officer of health was informed of the names and addresses of scholars who were absent owing to the occurrence of infectious disease in themselves or other members of the family. Following upon the receipt of this, house-to-house visits were made and many other cases were thus discovered. The desire on the part of parents for disinfection also brought many cases to the notice of the sanitary department, and thus the whole volume of the disease present may be regarded to have been fairly represented in the cases dealt with, and particularly in that portion which occurred at school ages. In past experience the outbreak usually became considerably abated after the New Year holidays, but in last year's outbreak its prevalence in February and March equalled that of November and December, while in January the numbers exceeded that of any other single month. The whole duration of the epidemic was from October until April, and a notable and unusual feature was the numerous districts of

the city over which the prevalence was maintained simultaneously for a considerable time. In reviewing a chart of the death-rate from this disease for the last 50 years Dr. Chalmers points out that since the year 1871 the deathrate for individual years more frequently falls below the mean than in the years preceding the "seventies." In the period between 1855 and 1873 every second year almost shows the deaths from the disease to have been in excess of the mean. There then occurs an interval of ten years between 1873 and 1883, during which the death-rate falls below the mean for the period. But, again, from 1883 to 1897, six years only of the 14 have the death-rate below the mean, after which there follows the interval of low death-rates which was brought to a termination by the cyclical prevalence of 1907-08. According to Dr. Chalmers, if one were disposed to suggest that the general lowering of the measles death-rate in the last 30 years has been the result of active sanitary administration, there comes in the interval between 1883 and 1897 to suggest that other factors are at work, and what seems more likely is that the organism of measles undergoes fluctuation in infective power and that periods of increased prevalence correspond with the development of a high degree of infectivity. At the same time it has to be observed that even after a twelve years' interval the death-rate in 1908 is considerably below the rate which obtained in 1883, which marked the termination of the former interval of similar duration. The attack-rate during the recent outbreak was at least 17 per 100 living at ages of three to five years, compared with 5 per 100 at ages of five to 15 years. Of the 22,033 cases dealt with no fewer than 13,646, or 62 per cent., were at ages under five years. The influence of school association in the spread of measles is beyond dispute, but the contrast between the attack-rate in the first five years of life with that at ages of five to 15 years, which includes the school age, definitely raises the question, according to Dr. Chalmers, whether school closure in any form can be expected to interrupt materially the current of an epidemic, which is attacking the earlier ages at more than three times the rate prevailing among children in the period which includes those who are attending school. This gains support from a com-parison of the distribution of the disease before and after the New Year holidays. For the future it is to be hoped that medical inspection under the Education Act will help in the early recognition and exclusion of children who are displaying the first symptoms of invasion of the disease. Oct. 5th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Quarterly Report of the Dublin Public Health Committee.

THE report of the public health committee of the corporation of Dublin for the second quarter of the present year (ending June 30th) has just been issued. Sir Charles Cameron reported that the necessity of making a fully detailed statement in his statutory certificate regarding the Cook-street insanitary area had been legally indicated to him. Accordingly, he had not only prepared a full statement regarding the conditions of the houses in that area (as he had done in former reports), but he included the houses (Nos. 1 to 13) on the east side of Michael's-lane, as these were all in a very bad state, and any scheme of improvement which allowed them to stand would necessarily be incomplete. A letter from the Women's National Health Association was discussed which expressed its warm approval of the plans for utilising rooms during disinfection and for the isolation of some of the worst cases of disinfection in tenement houses. An interesting section of the report is that which deals with the baths and wash-houses, to which 36,986 persons had paid for admission during the quarter. Of this number, 19,492 were visitors to the swimming-baths, of whom 777 were members of ladies' aquatic classes. The reclining baths were visited by 11,949 persons, of whom 1779 were females, including 331 Hebrew matrons, who used the special plunge bath. The private reclining bath had realised a sum of £227 12s. The public wash-house had been utilised by 5285 women during the quarter, who had paid £28 12s. 6d. for the accommodation. An invitation has been received by the

Congress of Hygiene and Demography, which is to be held at Washington next year, to appoint representatives to attend its meetings. In response to the invitation, the chairman (Alderman Thomas Kelly) and assistant executive sanitary officer (Mr. Patrick Nally) were selected, subject to the approval of the municipal council.

Glasnevin Cemetery: its Pit Burial of Paupers.

The municipal corporation of Dublin has at length decided to effect a permanent improvement in the conditions of Glasnevin Cemetery, the great central burial-ground of the Irish race. It is but too well known that two of the characteristic features of the Irish metropolis are its large number of paupers and the high rate of its mortality, two factors which are to some extent interdependent. But in this century the practical application of the time-worn maxim that "prevention is better than cure" has become an accomplished fact, for the first time in the history of medicine. And in keeping with the progress of sanitation it is gratifying to record that two of the notices of motion to be brought before the next meeting of the corporation deal with the subject of the burial of the poor. The first of these demands an expert decision (by the superintendent and district medical officers of health) of the question whether the "pit" burial at Glasnevin constitutes a public nuisance, and if so that the necessary steps be taken to stop it. The second is more comprehensive:

That the Local Government Board be requested to hold a sworn inquiry to investigate the charges made to the Corporation of Dublin that the system of burial provided for the poorer classes is neither sanitary nor decent, and that pending the result of this inquiry no further steps be taken to found a municipal cemetery.

This motion, which was partially discussed on Monday. Oct. 4th, surely deserves the best attention of the governing body of a community which has long prided itself (not without cause) on its ready sympathy with poverty and pain. It may be added that the co-existence of the colossal monuments of Glasnevin, erected in memory of individuals of more than doubtful benevolence, with its paupers' "pit" hardly claim to be worthy of either democracy or Christianity

Dublin Sanitary Association: View of the Action of the Opponents of the Iuberculosis Campaign.

At the meeting of the council of the Dublin Sanitary Association which was held last week the members discussed "the grave danger to the public health" arising from the operations at present in progress at the main drainage works, at Burgh Quay and the vicinity, and it was decided to interrogate the corporation on the subject. The debate on the prevention of tuberculosis, which had taken place at the meeting of the guardians of the South Dublin Union on the previous day, was then discussed with a keen degree of interest. The opinion was unanimously expressed that the views put forward by several of the speakers were "extraordinary, as coming from members of a sanitary authority to which the law had entrusted the safeguarding of the public health and the duty of adopting measures to control the prevalence and spread of dangerous infectious disease, to which category tuberculosis is admitted on all hands to The continuous discussion of the tuberculosis belong." problem is rapidly enlightening the general public on the importance of the questions connected with sanitation in general, as well as of those which are specially associated with the prevention of tuberculous disease.

National Maternity Hospital: Annual Charity Sermon.

The annual charity sermon in aid of the National Maternity Hospital (Holles-street) was preached on Sunday last in the Church of St. Andrew, Westland-row, and was heard by a large and representative audience, the members of which responded liberally to the appeal of the eloquent preacher. There is certainly no institution which has a higher claim on the appreciative sympathy of the public of Dublin and of Ireland. It not only receives patients in its wards, and treats them in its dispensaries, but it sends skilled nurses and medical men to the homes of the destitute poor who are prevented by unavoidable circumstances from presenting themselves at the institution. In this respect it has taken a meritorious leadership which has not up to the present been fully followed by any other of the maternity hospitals of this city. The fact that during the past year 10,432 visits of this kind were paid to the poor of the surrounding district is sufficient evidence of the extent committee from the secretaries of the Fifteenth International of its sphere of usefulness. The number of patients attended

during the past year, intern and extern included, was 1970, while 4433 gynæcological cases were treated in the dispensary. The hospital now occupies the third place in size and importance among similar institutions in the British Islands.

Health of Belfast.

During the discussion of the report presented to the meeting of the Belfast city corporation on Oct. 1st on the health of the city between August 22nd and Sept. 18th, a very curious state of affairs was disclosed in reference to the importation of a quantity of lard into Belfast from the United States in barrels with, at the ends, the words "inedible" or "non-edible." In some cases it was found that these words had been whitewashed over, and in some cases actually the officer of the public health committee watched a consignment of this stuff from the quay to the stores, and subsequently noticed men engaged in obliterating the warning words from the heads of the barrels and substituting other words. There were 140 or 150 tons of such stuff in Belfast or in course of transit at the time, and the health committee agreed that if the consignees undertook that the material should in no form be manufactured for human consumption it would remove the embargo and permit it to be used for other purposes. The firm affected agreed to this, and they also undertook never again to import or use in their works any lard or grease from the United States unless it bore the official certificate of the Government to the effect that it had been inspected and was not to be used as human food. This "inedible" grease is used in the manufacture of soap and lubricants.

Death of W. J. McDade, M.B. R. U. 1.

Great regret has been felt in Belfast at the announcement of the death in Preston of Dr. W. J. McDade, which took place in that town on Sept. 29th, in his forty-seventh year. He began to practise in Preston about six years ago, and became a member of the borough council and vice-chairman of the public health committee. Dr. McDade in his early life in Belfast was engaged in the great firm of Grattan and Co., pharmaceutical chemists, and he left them to take charge of the compounding department of the old Royal Hospital in Frederick-street, where he remained from December, 1884, to July, 1893. At the same time he pursued his medical studies at Queen's College, Belfast, and graduated M.B. of the Royal University of Ireland in 1893. A man of great energy and industry and an excellent afterdinner speaker, Dr. McDade made a great number of friends, and as an experienced practitioner he will be greatly missed in Preston. He leaves a widow. Previous to settling down in practice in Preston Dr. McDade had filled appointments in London, Lincoln, and Manchester. Oct. 5th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Sickness in the Army.

THE average of 269 sick per 1000 of total strength of the army is higher than in previous years. This average represents the proportion of men admitted into the military hospitals, the actual number being 134,631 according to the latest statistics. These 134,631 patients were under treatment for 3,101,126 days. Algeria and Tunis supplied 25,126 hospital patients, giving a proportion of 360 sick per 1000 of the total strength, a number which is higher than in previous years. These patients were under treatment for 648,601 In the home army there were 200,686 admissions to the infirmary, giving in that respect a sickness-rate of 478 per 1000 of the total strength. This proportion This proportion is decidedly above that of previous years. These patients were under treatment for 1,954,365 days. In Algeria and Tunis the number of admissions to the infirmary was 21,876, or a proportion of 377 men per 1000 of the total strength, which is about the same as in previous years. These patients were under treatment for 258,605 days. According to the military authorities this rapid increase in sickness is due, not so much to the sanitary state of the barracks and the conditions of a soldier's life, as to the fact that men whose health was indifferent at the time of enlistment (incorporation) are placed on active duty.

Precautions against Cholera.

On account of the prevalence of cholera in Russia and Holland the President of the Council (Minister of the Interior) has laid down the following regulations with a view to prevent the importation of the disease into France. Every person who comes from a place infected with cholera and on arrival at the French frontier presents possible symptoms of this disease shall be detained at the railway station by the officer (commissaire) appointed for the purpose and shall be isolated until seen by a medical man. If the case is then considered not to be one of cholera the person shall be allowed to continue his journey, but if the case is found to be one of cholera the commissaire, acting in concert with the municipal authority, shall convey the patient to some place where, in the opinion of the medical man, isolation may be carried out under favourable conditions for the patient and for the prevention of infection. The prefect will also send a representative (délégué départmental) or a specially appointed medical man who will take all the steps that may be necessary. Similarly any person coming from a place infected with cholera and presenting suspicious symptoms shall be isolated in a compartment of the train by which he is travelling. All railway servants are bound to act in accordance with this regulation. On the train coming to a station where a commissaire resides the patient shall The carriages which have been occupied by persons suffering or supposed to be suffering from cholera shall be emptied and disinfected. Dirty linen and soiled clothing or bedding are forbidden to be brought into France by land from infected districts unless as luggage. When lodgings are taken by persons who either come direct from infected places or have left such places within the preceding eight days, the householder shall within 24 hours of their arrival notify the fact to the Maire of the commune. Every case of illness suspected to be cholera shall be immediately notified at the Mairie. Every person suffering from an illness which is either recognised or suspected to be cholera must be immediately isolated, and all measures of prevention carried out with respect both to the patient and to those who have been associated with him.

Oct. 5th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Precautions in the Granting of Medical Diplomas.

THE Vienna Professoren Collegium, which is composed of the teaching staff of the University, has informed the responsible authorities that the existing arrangements are very favourable for those who are willing to obtain a medical diploma by fraudulent means. In particular, the ease with which foreigners are allowed to obtain diplomas is full of danger, as there is no special obligation on these candidates to satisfy the degree-granting body as to the course of instruction which they claim to have had in This appeal to the authorities their own country. is directed principally against medical students from Russia, Roumania, and Servia, who can finish their studies here, obtain a diploma, and settle down here in practice, although they are not allowed by law to do so unless they become naturalised Austrian subjects. In several instances brought to the notice of the Ministry of Education lately diplomas have been obtained merely on production of documents written in a foreign language testifying that the holders had been studying during one or more terms of a medical curriculum, without saying anything about their examinations. The Ministry has accordingly instructed the medical councils to submit a scheme by which such unlawful proceedings may be stopped without inconvenience to ordinary students or to those who attend post-graduate courses of instruction.

Healthy Dwellings for the Poorer Classes.

The erection of healthy dwellings for the poorer classes has been brought into a very satisfactory condition by the exertions of a small body of medical men and philanthropists, and the jubilee of the venerable Emperor Francis Joseph last year prompted many persons to aid the scheme, so that at present there are two "colonies" of this kind in Vienna. One consists of a cluster of cottages with 400

dwellings for 2000 persons, and the other of one large building, capable of accommodating 1000 single men. The leading idea is the obtaining of light and air and comfort for as little money as possible. The minimum air-space for persons has been fixed in these dwellings at 40 cubic metres (about 1200 cubic feet), and a special point has been the absence of backyards with their universal dirt and darkness. Careful observation by the medical officer of health of the district has proved that the health of the inmates of these houses is far better than it was before they came there to live. An important point is that the health of the children has been very satisfactory. This scheme affords a proof on a large scale that money spent in raising the personal comfort of the population saves the outlay which would otherwise be necessary to pay for the hospital treatment of patients belonging to the class in question. Not only have diseases of the respiratory organs been diminished considerably, but also the mortality of children has fallen by 31 per cent., showing the value of fresh air and light in the maintenance of health. Another colony with accommodation for 600 families is now in course of construction, since the results are so very favourable.

Annual Meeting of the Society of German Neurologists.

The German neurologists held their annual meeting in Vienna this year and on the two days (Sept. 17th and 18th) which it occupied a great amount of useful scientific work was accomplished. Professor Erb and Professor Oppenheim were presidents and a large number of eminent neurologists from German-speaking countries were present. Among the papers that were read one on Poliomyelitis attracted unusual attention, as there has been an epidemic of this disease in nearly all parts of Austria within the last two years. The wealth of clinical material at the disposal of the Vienna neurologists and the excellent papers contributed by them were duly appreciated by the guests from abroad, who for their own part had also much to communicate.

Reorganisation of the Chief Board of Health.

The Oberste Sanitätsrath, or chief board of health in this country, has by an ordinance of the Minister of the Interior, or Home Secretary, now received its final constitution and will in future consist of the heads of the medical faculties in Austria, a number of eminent medical and technical and agricultural specialists, and numerous well-known general practitioners. The main intention of the reform is to enable this body to deal in a thorough manner with all questions arising in connexion with public health.

As all arrangements pertaining to social hygiene, to
dwellings, to the care of children, and to the protection of the working classes have been brought within the scope of this organisation, there has been formed amongst the members a series of special committees which, after coming to an understanding as regards any given question, will offer their opinion to the President of the Sanitätsrath. A very welcome feature of the new body is the large number of general practitioners connected with it; about 25 per cent. of the members belong to this class. For this reason the medical profession will in future be able to make its voice better heard than has hitherto been the case. The office of a member of the Oberste Sanitätsrath is an honorary one. The eligibility of general practitioners for membership is the result of the agitation carried on by the medical organisation for economical progress and has created great satisfaction in all medical circles.

Oct. 1st.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Music in the Treatment of the Insane.

"BETTER than barrels of medicine and much more effective than straps or strait-jackets." These words of Dr. Podstata are the motto of Dr. Berkes, general superintendent of the asylum for the insane at Gyula, and he recently expressed himself to this effect after observing for two hours the effect of music upon an audience composed of insane male and female patients. The concert given for the inmates of the Gyula asylum was more pretentious than any previous entertainment there. Of the 600 patients under the charge

of Dr. Berkes, 200 were assembled in the large hall of the institution and sat there paying more attention than many an audience of persons supposed to be possessed of their full mental faculties. Many of the listeners came from the wards set apart for violent patients; they were constantly under the watchful eyes of the attendants, but none of them gave any cause for anxiety. From the moment of the first number of the programme until the conclusion the audience sat in a state of eager attention and vocifer-ously applauded each selection. Patients who in their wards are continuously restless, muttering, and gesticulating sat quiet and subdued. One patient known to be violent made no more serious demonstration than to rise and move his lips at each outburst of applause. A few of the dull faces did not respond to the charm of the music, but these were rare, and the features of most of the listeners plainly displayed interest and admiration.

Sanitation on the Hungarian Railways.

At the last meeting of the Sanitary Board of the State Railways the executive officer was instructed to draw up certain rules and regulations regarding car sanitation, these to be considered in conference with various railway officials and reported upon at the next regular meeting of the board. In carrying out its inquiry four points are emphasised by the Sanitary Board—namely, (1) a sufficient amount of fresh air properly distributed; (2) cleanliness of the car and its contents, including closets; (3) the proper heating of the car; and (4) overcrowding. The board also inquires whether the above points have received sufficient consideration from the private companies owning railways in Hungary, and the question is asked whether the board shall undertake to secure better sanitary conditions by formulating certain regulations. Circular letters have been sent out to a number of leading medical men, and the character of the replies will influence the board in its decision.

War upon Flies and other Insects.

At a recent meeting of the Nagyvarad Board of Health the following resolutions were adopted:—

Resolved, that the chief inspectors of nuisances, milk, meat, and cattle are hereby directed to visit all retail dealers exposing for sale in front of their premises meat, fish, vegetables, fruit, confectionery, and cake, and to instruct the proprietors that covering of some suitable material must be provided to protect the goods so exposed from files and insects generally.

Resolved, that the chief medical inspector and the chief inspectors of

Resolved, that the chief medical inspector and the chief inspectors of milk, meat, and cattle be and they are hereby directed to instruct their respective subordinates to inspect regularly all manure pits of all stables, whether private or livery, that exist in their districts, and to give instructions to owners or keepers thereof that stables and manure pits must be kept in a clean condition, and where the pit is on the exterior of the premises it must be kept tightly closed or screened with gauze. If a stable is connected with the premises an inspection and report must be made. All places designated in the resolutions must be visited by the inspectors, and they have to make a thorough inspection of the establishments referred to therein, as well as direct the owners or agents that they will have to comply with the new regulations.

Oct. 4th.

THE HUNTERIAN SOCIETY.—The Hunterian Society's first lecture of the session will be delivered at the London Institution, Finsbury-circus, on Wednesday, Oct. 13th, at 8.30 P.M., by Dr. Sidney Martin, on "Certain Infective Processes in the Intestine, their Results and Treatment." All members of the profession are invited to attend.

LITERARY INTELLIGENCE.—Messrs. Baillière, Tindall, and Cox announce that they have ready for immediate publication a new edition of Jellett's "Manual of Midwifery," which forms one volume of the excellent "University Series" published by the firm. The manual has been for the most part rewritten and many new and original illustrations have been added.—Amongst the works issued by the Hungarian Ministries on the occasion of the recent Sixteenth International Medical Congress is a book on the "Protection of Children" which will be issued in the course of the next month. This will be edited by Zoltán Bosnyák and the Count Leopold Edelsheim-Gyulay; it will consist of four parts, dealing with the Forsaken Child, the Hungarian System of State Protection for Children, the similar work of the Child Protection Society, and the subject of Culprits of Minor Age respectively. The preface has been written by Minister Count Julius Andrássy. Members of the Congress will receive this work with the second part of the Proceedings of the Congress.

Obituary.

SIR THOMAS SMITH, BART., K.C.V.O., F.R.C.S. ENG., HONORARY SERJEANT-SURGEON TO H.M. THE KING; CONSULTING SUR-GEON TO ST. BARTHOLOMEW'S HOSPITAL AND THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET, W.C.

"Sir Thomas Smith is dead, and in him we have lost not only a great surgeon, but a king among men. We add up all the honours that he received, and all that he did for the advancement of surgery; and we still find ourselves thinking not of them but of him, the sight of his face, the sound of his voice, the happiness of his presence, the help of his good example. He was like St. Luke, 'the beloved': and there is nobody left in our profession able to take his place." Thus writes one of Sir Thomas Smith's pupils and friends, to whom we owe most of this obituary notice, and the words will strike all those who knew the subject of the memoir as quite apposite.

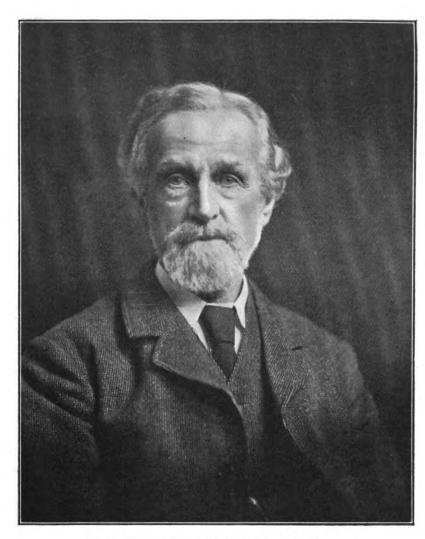
Sir Thomas Smith was born on March 23rd, 1833. His father was Mr. Benjamin Smith, of Great Lodge, Kent. Of his many brothers and sisters, one outlives him, Canon Maberly Smith, Rural Dean of Rochester. He was educated at Tonbridge School. About the time that he left school, his father died. He entered St. Bartholomew's Hospital in 1850; he was apprenticed to Mr. (Sir James) Paget, and was one of the last of the apprentices at the hospital. Other new students, that year, were Sir William Turner, Sir Jonathan Hutchinson, Dr. Hack Tuke, Mr. Bickersteth, and Mr. F. A. Humphry. In 1854, he obtained the Membership, and in 1858 the Fellowship, of the Royal College of Surgeons of England. In 1859, he published his "Manual of Operative Surgery on the Dead Body," illustrated with woodcuts from photographs taken from the body during the operations: it is an admirable book, and was greatly needed, for the examination boards were beginning to require the practice of these operations as a part of medical education. (A second edition of the book, by the help of Mr. Walsham, was published in 1876.)

In 1862 he married a daughter of Mr. Frederick Parbury, of Lancaster-gate. From 1862 to 1868, they lived at 7, Montagu-street, Russell-square. In 1868, they moved house to 5, Stratford-place. It was a venturesome move, for Stratford-place, 40 years ago, was not a "medical street": but, in the later years of his life, Sir Thomas Smith might have said, as Sir James Paget said of Harewood-place, that he had taught the London cabmen to find the street where he lived. For many years, he assisted Sir James Paget in private practice, and was, then and always, like a son to him. In 1879, came the death of his wife. She died after a few days' illness, leaving him with nine children. At St. Bartholomew's Hospital, he was for many years a demonstrator of anatomy and operative surgery: and, on Reb. 24th, 1864, was appointed an assistant surgeon. On July 11th, 1871, he was appointed lecturer on descriptive anatomy, conjointly with Mr. Callender. On Jan. 22nd, 1873, he became surgeon. On July 10th, 1879, he resigned his lectureship in anatomy. On March 10th, 1898, he resigned his surgeoncy: and was appointed to be honorary consulting surgeon, and a governor of the hospital. At the Great Ormond-street Hospital for Sick Children, where he had been a house surgeon in 1854, he was appointed assistant surgeon in September 1861, and surgeon in June 1868. He resigned his surgeoncy in November 1883, and was appointed consulting surgeon. He was consulting surgeon, also, to King Edward VII. Hospital, and to the Alexandra Hospital for Diseases of the Hip. By his death THE LANCET Relief Fund loses its honorary auditor, Sir Thomas Smith having succeeded Sir Henry Pitman in the office. Though discharging the duties for a short time only, he showed keen interest in the work of the Fund, and brought a keen business instinct to bear upon it.

From 1880 to 1900, he was a member of the Council of the Royal College of Surgeons: and was a Vice-President in 1887-8 and 1890-1. In 1900, he was appointed a Trustee of the Hunterian Collection, but he is understood not to have desired to be made President of the College. In 1895, on the death of Sir William Savory, he was appointed Surgeon Extraordinary to H.M. Queen Victoria. He attended many honour of a baronetcy. On the King's Accession, he was appointed Surgeon in Ordinary to His Majesty. In 1901, he In 1901, he assisted Sir Frederick Treves in the operation on the King, and was appointed Honorary Serjeant-Surgeon to His Majesty, and Knight Commander of the Victorian Order.

His writings on surgical subjects show clearly his greatness, his originality, and his wonderful mastery of the facts of each case. It is of no use to wish that he had written more: he had no great liking for long formal text-books. "It's the men who don't get the cases," he once said, "who write the books about them." But there is the making of more than one book in some of his short papers. They stand out, in a very remarkable way, in the old volumes of the transactions of this or that society. In 1868, his paper, "On the Cure of Cleft Palate by Operation on Children," was read before the Royal Medical and Chirurgical Society: it makes a landmark in the history of that operation. To assist him over a bad cleft palate, was to get a lesson in surgery not soon to be forgotten. In 1869, his paper was read, before the same society, proposing "Nephrotomy as a Means of Treating Renal Calculus." It illustrates what we mean by the phrase "a born surgeon." He had not performed the operation: he could find no account of it, except that a certain "Dominicus de Marchetti, a physician of Padua," had once done it: still, he believed that the operation might be safely done. "I owe the Society an apology," he says, "for bringing before it a paper on a some-what novel method of treatment, without, at the same time, detailing some experience of the proceeding the paper discusses. Having, however, waited in vain for more than two years for an opportunity of putting the operation of nephrotomy to the test of experience, I am induced to publish the following short and incomplete com-He gives the most exact rules for the operamunication. tion: he discusses carefully every possible danger: he foresees everything. Especially, he says, the operation must not be attempted till it has been done on the body of one who has died with a stone in the kidney. "I hope that this experience may shortly be forthcoming, either by others performing the operation themselves on patients who may have died with renal calculus, or by the kindness of some surgeon giving me an opportunity of operating under similar circumstances." In 1870 he operating under similar circumstances. In 1970 he brought before the Clinical Society one of the very first cases of vaccino-syphilis recorded in this country. In 1872, he reported to the same society a case of gastrostomy for cancer of the cosophagus: the seventh case thus treated in this country. In 1876, he read before the Pathological Society the first recorded case, in this country, of scurvy-rickets. These five short papers should be carefully studied: they were of more value than many which are ten times longer. Though we may wish that he had written more, yet there was, perhaps, no man in our profession who taught He never accepted the presidency of any of the societies; but he often spoke at the meetings, and always men loved to hear him, for it was impossible not to feel that the man himself was greater than the greatest of his works.

He was curiously like Ambroise Paré. Thanks to le Paulmier, and to Paré's own writings, we know Paré well: and the likeness between the two men, though more than 300 years are between them, is wonderfully close. same directness or simplicity of purpose, the same independence, the same way of "treating not the disease but the patient": in these, and in many other aspects, the two lives reflect the same light. In operating, and in the general management of his cases, Sir Thomas Smith rather distrusted complex and elaborate methods and apparatus, and preferred the exact use of all that he had proved good by long experience: but he was so ingenious, so quick in finding resources and adaptations, that nothing of his work was ever old fashioned. He neither approved of novelties, nor disapproved of them; he went to Edinburgh, to study Listerism for himself, and was the first to employ the Listerian method in St. Bartholomew's Hospital; and he gave careful thought to every proposed new operation: but always with his mind set on the patient, no less than on the operation. "Of all that one remembers of him," writes his pupil and friend, "nothing is more vivid than his passionate desire to do the right thing for the patient. And, by that, I mean not only that he gave profound attention to every point of the members of the Royal Family, and in 1897 received the treatment, and watched very gravely the course of the case,



SIR THOMAS SMITH, BART., K.C.V.O., HONORARY SERJEANT-SURGEON TO H.M. THE KING.

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and made frequent use of consultation with his colleagues, and weighed the pros and cons of every major operation: but he also gave to his hospital patients immeasurable sympathy. To go round the wards with him, was to learn his compassion and humility. It was no bedside manner; he had no other manner; it came natural to him, if one may call such gifts natural: he would just sit by the bed, and take the patient's hand, and the thing was done, in a moment, absolutely perfect. There never was, nor ever will be, more gentleness, more pity, given to hospital patients. He was compassionate, not with any superficial sentiment, but with emotion: he was 'moved to pity.' He despised, of course, all solemnity, book-learning, theorising, and guessing. If he did not know what was the matter with a patient, he said so, and rather enjoyed saying it. 'The more you see of these cases,' he once said, of acute abdominal cases, 'the less you know about them.' At the weekly consultations at the hospital, he was inclined rather to be silent than to speak, if he found his colleagues talking vaguely. His clinical lectures were short, vivid, personal: and they were, assuredly, among the most original and memorable lectures ever heard at the hospital. He had no equal in the art of putting a case in plain well-chosen direct words: he made you feel the human side of practice, the responsibilities of surgery, the patient's risk, the anxiety of the day's work, the happiness of saving a life. He got students to see what grave and urgent affairs were waiting for them, so soon as they were qualified: he taught them the habit of thinking of operations as patients think of them.

"I had the honour of assisting him, for many years, in his private practice. What he was to the poor, that he was to the rich. I do not mean that he ignored, or pretended to ignore, the difference between ranks: he was far above that. I mean that he was so kind, so sympathetic, to the poor, that he could not be kinder, nor more sympathetic, to the grand people. Whether his patients came from Leather-lane, or lived in Park-lane, it was all one to him, one way of going about doing good. Wherever he happened to be, virtue went out of him. That was part of his profound influence: he saw straight into the hidden life. He understood men and women, as if he had created them: and all their little secrets were bare, when he looked into their hearts. 'He saw life steadily, and saw it whole'; without sentimentality, and without illusions: for he had gone through the valley of the shadow of death, and could enjoy the relief of laughter. And, of course, many of us think of him chiefly because of his delightful humour, his wit, his fanciful talk, his irony, his inimitable way of wrapping up wisdom in chaff. To hear him talk, at a dinner-party, was like the sudden coming out of a stuffy room into the open air, with the wind in your face and the sound of the sea in your ears. He alone could have summed-up another great surgeon thus: 'the mildest-looking man that ever scuttled a ship.' He alone could have said, of an eminent surgeon's son, that he was born with a silver director in his mouth.' But what is the good of remembering two jests out of ten thousand? Only, they who did not know the tragedy of his life, missed the whole beauty of its comedy. It is not too much to say, that he never recovered from the grief of his wife's doubt. death. For all the love that his children have given him, he was still longing for her love: and, for all the crowd of us who were proud to be his friends, he was lonely. He carried his loss about with him for thirty years: it is in every line of his face. That is what set his laughter and his humour so high above the complacent smiles and measured witticism of lesser men. He had come out of such grief as nearly killed him, and he has taken the scars of it to his Yet, so great was his humanity, so inexhaustible his sympathy, that he seemed, always, in love with life. And, indeed, so he was. For he heartily enjoyed a holiday: he was a keen fisherman, he delighted in a day's shooting, in half-a-day's golf, in a game of bridge. He enjoyed, in short, ordinary amusements, though they were now and again wearisome to him: and, wherever he went, happiness came with him."

Till a few months ago, Sir Thomas Smith seemed in good health. Then, he began to lose strength, and was compelled, by the weakness of the heart, to resign all work, and to be an invalid. He was attended, in his last illness, by his son-in-law, Dr. Garrod. He had little pain, and no great distress of breathing: and he died, in his sleep, on Friday, Oct. 1st. He is succeeded in the baronetoy by his eldest son, Mr.

T. Rudolph Hampden Smith, F.R.C.S., of Stockton. His body was buried, on Wednesday, in the Finchley Cemetery: the funeral service was read by the Bishop of Oxford. A memorial service held, at the same time. in St. Mark's, North Audley-street, was conducted by the Dean of Salisbury, assisted by the Rev. H. J. Watters. His Majesty the King was represented by Sir Frederick Treves, and there was a large attendance of relatives and friends, including Sir Richard Douglas Powell, President of the Royal College of Physicians of London, and Mr. Butlin, President of the Royal College of Surgeons of England.

Our illustration is a reproduction of a photograph by

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DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. J. Cartellieri, who effected many discoveries of ancient pile dwellings in Bohemia.—Dr. Alber H. Marvin, lecturer on rhinology in the Cleveland College of Physicians and Surgeons.—Dr. Henry C. Chapmay, formerly professor of forensic medicine in the Jefferson Medical College, Philadelphia.—Dr. E. A. Chevassu, inspecting medical officer in the French army.

Medical News.

Examining Board in England by the Royal COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF England.—At the First Professional Examination of the Examining Board in England held on Sept. 28th, 29th, 30th, and Oct. 1st, the following gentlemen were approved in the undermentioned subjects :-

Chemistry and Physics.—Cecil Bluett, Sydney University and London Hospital; Ernest Richard Gordon Greville, Birkbeck College; Leon Kahan, London Hospital; John Lyon, London Hospital; Kenneth Holl McMillan, St. Thomas's Hospital; Pierre Joseph François Louis Rathler du Vergé, Guy's Hospital; and Hugh Gordon Sparrow,

Holl McMillan, St. Hollas Hospital; and Hugh Gordon Sparrow, King's College.

Chemistry.—Alma Percy Ford, London Hospital; Arthur Causton Freeth, St. Mary's Hospital; Frank Sykes, Leeds University; Arthur Geoffrey Turner, St. Bartholomew's Hospital; Algernon Randolph Upton, St. Bartholomew's Hospital; George William Watson, Leeds University; and Kim Glen Wee, St. Thomas's Hospital and University College.

Physics.—Hallowes Lloyd Addison, King's College; Paulin Rogar Chevreau, Guy's Hospital; Basil Anderson Cooke, Sheffield University; Thomas Sacheverell Greenaway, Westminster Hospital and King's College; John Casper Münch, London Hospital; and Henry John Hugh Symons, King's College.

Biology.—William Thomas Bell, University College; Edward Henry Brien, Liverpool University, Alma Percy Ford, London Hospital; Harold Percy Gabb, University College; Stanley Victor Percy Pill, St. Mary's Hospital; Sydney William Gardiner Ratcliff, Birkbek College; Khan Sahib, Bombay University; William Henry Arthur Douglas Sutton, Guy's Hospital; Frank Sykes, Leeds University; Oscar Ramsay Unger, University College; and George William Watson, Leeds University.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—

ROYAL COLLEGE OF SURGEONS OF ENGLAND. At the Preliminary Science Examination for the Licence in Dental Surgery of the Royal College of Surgeons the following gentlemen were approved in the subjects indicated

chemistry and Physics.—Sidney Adams, City of London College; Francis Edward Stuart Brailsford, Charing Cross Hospital; Harold Bridgewater Bramley, Liverpool University; Arthur Caspar Stevenson, Cottam, Charing Cross Hospital; Richard Cowell, University College, Bangor; Robert Lister Donn, Guy's Hospital; Francis Arthur Everett, Charing Cross Hospital; John Stanley Frank Horton, Polytechnic Institute; Ernest Victor Jones, Charing Cross Hospital; Percy King, Technical College, Pottsmouth; Lancelot Turtle Montgomery, Guy's Hospital; and Frank Bedford Stradling, Technical School, Gloucester.

Chemistry—Frank Lodge, Municipal Technical School, Halifax.

Physics.—Aurelius Percy Kincald-Smith, Charing Cross Hospital; and Roy Oswald Shilton, Birmingham University.

UNIVERSITY OF CAMBRIDGE.—The following appointments have been made:—Demonstrator of Comparative Anatomy: F. A. Potts, M.A., Trinity Hall. Demonstrator of Animal Morphology: L. A. Borradaile, Demonstrator of Annual morphology. In Property of Chemistry: F. W. Dootson, M.A., Trinity Hall. Senior Demonstrator of Botany: F. T. Brookes, M.A., Emmanuel College. Junior Demonstrator of Botany: D. Thoday, M.A., Trinity College. -The following have passed the Examination in Tropical Medicine and Hygiene:

P. H. Bahr, Trinity; C. S. Bowle-Evans, Emmanuel; J. C. Kennedy; J. L. Lanham; and H. Macfarlane.

University of Glasgow.—The following have ssed the first professional examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (B., Botany; Z., Zoology; P., Physics; and C., Chemistry):—

Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (B., Botany; Z., Zoology; P., Physics; and C., Chemistry):—

Robert Armstrong (B., P.), George Plett Barr (B., P.), Andrew Duffield Blakely (P.), Abraham Blashky (B.), William Branest Boyd (B., P.), Robert William Brander (B., P.), William Adam Brechin (B., P.), David Peebles Brown (B., P.), William Hunter Brown (B., P.), David Peebles Brown (B., P.), William Hunter Brown (B., P.), David Peebles Brown (B., P.), William Hunter Brown (B., P.), William Brander Graname Buchanan (E., James Wilson Burton (C.), James Campbell (B., P.), William Loonard Cassells (C.), James Campbell (B., P.), William Loonard Cassells (C.), James Grander (B., P.), William Conley, M.A. (B., P.), George Gibson Cooper (B., Z.), Thomas Mulr Crawford (B., P.), Nathaniel Crichlow (B., P.), Lawrence Cromble (B., Z., P.), Gabriel Daniel de Kock (Z., C.), William Donald (P.), Thomas Ingram Dun (P.), Thomas Ferguson (B., P.), James Bryan Fotheringham (Z.), James Fraser (P.), Ian Grant (B., P.), Robert Masson Greig (B., P.), William John Henry (B., P.), George Hislop (B., P.), William Hornsby (B., P.), Thomas Cameron Houston (Z.), John Ferguson Hutton, M.A. (B., Z., C.), David Johnston (B., P.), John Finlayon Lang, M.A. (B.), Alexander Lindssy (P.), Carel Johannes van Lingen (Z., P.), Reginald Lyon (Z.), Douglas M'Alpine (Z., P.), Daniel Steel M'Bean (B., P.), John Bowes M'Dougall (B., P.), John Molie (C.), John Maclinnes (B., P.), Charles Robertson Milntosh (B., P.), Robert Hugh M'Killop (C.), Donald Mackinnon (B., Z., P., C.), James Robertson (Cowper Mackintosh (B., P.), Kenneth Norman MacLean (B., Z., P.), William (B., P.), Robert M'Lean (B., P.), Neil Macleod (P.), Freierick William M'Millan (B., P.), Robert Martin M Millian (B., P.), Robert Milliam Martin (B.), William Luddington Peacock (B., P.), Alexander Dryden Mortat (B., P.), William Luddington Peacock (B., P.), Alexander Robertson (B., P.), Stuart Robertson (B., P.), Stuart Robertson (B., P.), Stuart Ro

The following have passed the Second Professional Examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (A., Anatomy; P., Physiology; and M., Materia Medica and Therapeutics):---

Anatomy; P., Physiology; and M., Materia Medica and Therapeutics):—

Mark James Aitken (A., M.), James Browning Alexander (A.), John Campbell Hill Allan (A., P., M.), James Wallace Anderson (A.), Alexander John Archibald (A.), Charles Averill (M.), Archibald MacAllister Blackwood (M.), Simon Harry Bloom (P., M.), John Bower (A.), David Sands Brough (A., M.), James Turner Brown (M.), Robert Archibald Brown (M.), William Murdoch Buchanan (A.), George Cochrane, M.A. (A.), Robert Corbett Corbett (A.), Alexander Moffat Dunlop (A.), Walter Elliot Elliot (P.), Philip Figdor (P.), James Findlay, M.A. (A.), Robert Findlay (P.), Hugh Forrest (A.), Alexander Fraser (A.), Leander Lowrie Fyfe (A.), Adolph Robert Hanns Geyer (P.), John Gibson (M.), Cecil William Fletcher Groenhill (M.), Andrew Smith Hannay (A.), Alexander Gibson Henderson (A., P., M.), James Hendry, M.A. (M.), Andrew Gray Holms (A.), William Hunter Howat (A.), Felix Arthur Kerr (A., P.), Thomas Joseph Kirk (A.), Alexander Kirkhope (M.), Norman Veitch Lothian (A., P.), Norman M'Farlane (A.), James David Mackinnon (A.), Archibald M'Leod (A.), Murdoch Hugh MacLeod (A., P.), William Wyllie MacNaught (M.), Stephen Anderson MacPhee (A.), George Hanson M'Robert (A., P., M.), Osborne Henry Mavor (P., M.), Stuart Spence Meighan (M.), Andrew Mulr (P.), Arthur Alexander Murlson (P.), Andrew Nellson (M.), Hugh Paterson (A.), Henry Charles Deans Rankin (A., M.), Hugh Young Riddle (A.), James Gordon M'Gregor Robertson (M.), John Livingstone Scott (P.), William Logan Scott (A.), William Sneddon (A.), Roderick Alexander Steven (A.), John Alexander Stewart (P.), Lawrence Tweedie Stewart (A.), Edward Napler Thomson (A.), Archibald Wilson (P.), and Douglas Wilson (M.).

Women.—Isabel Inglis (A., M.), Katherine Stewart MacPhail (M.), Lucy MacBean Ross (A., P.), Christina Hamilton Shearer (A., M.), and Isabel Jane Stark (P.).

The following have passed the third professional examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch,B.) in the subjects indicated (P., Board led to the adoption of the present hospital. The total

Pathology; and M., Medical Jurisprudence and Public Health)

Health):—

Thomas Adam, M.A., M.R.C.S. (P., M.), John Andrew Aitken (P., M.), Robert Richmond Archibald, M.A., B.Sc. (P., M.), John Bruce Baird, B.Sc. (M.), Charles Stewart Black (P., M.), John Bruce Black (P., M.), Alexander Hogg Brown (P.), James Rillot Black (P., M.), Alexander Hogg Brown (P.), Peter Drummond (M.), William Deanburn Dunlop (P.), Thomas Scoular Fleming (P., M.), Joseph Graham (P.), John Reid Haldane (M.), William Hamilton (M.), Angus Macaulay (P., M.), John Gladstone Mackenzie (M.), Thomas Jones Mackie (M.), Murdo Mackinnon (M.), Alexander Thomson M'Whirter (M.), Frank William Martin (M.), Robert Stewart Miller (M.), Clark Nicholson, M.A. (P., M.), Arthur Stanley Richmond (P., M.), John Ivison Russell (M.), John Torrance Weir Stewart (P.), John Norman Macdonald Sutherland (P., M.), William Osamuel Waterhouse (P., M.), James Lachlan Ure (M.), William Samuel Waterhouse (P., M.), James Lachlan Ure (M.), William Samuel Waterhouse (P., M.), James Lachlan Ure (M.), Women.—Mary Alexander, M.A. (P., M.), Marie Alexina Annette Beard (P.), Louisa Emma Dodge (P.), Mary Amelia Pilliet (M.), Jemina Wallace (M.), and Marion Altken Wylie, M.A. (M.).

The following passed with distinction in the subjects

The following passed with distinction in the subjects indicated:-FIRST EXAMINATION.

Botany.—Robert Horatio Williamson and Marguerite Wilson.

Physics.—John Bowes M'Dougail, James Robertson Cowper Mackintosh, Thomas Murray Newton, Stanley Robertson, Stuart Robertson, Marion Thompson, Sarah Adam Watson, and Joseph Bannister Williamson. Chemistry.—John Sillars.

THIRD EXAMINATION.

Medical Jurisprudence and Public Health.—Thomas Jones Mackie and James Lachlan Ure.

Foreign University Intelligence. Bologna: Dr. Bernardino Lunghetti has been recognised as privat-docent of Anatomy.—Breslau: Dr. Georg Lenz has been recognised as privat-docent of Ophthalmology.— Bucharest: Dr. Stanculeanu has been appointed Professor of Ophthalmology. Dr. Kubinyi has been recognised as privat-docent of Midwifery.—Buffalo: Dr. Robert F. Sheehan has been appointed Professor of Hygiene, in succession to Dr. Henry R. Hopkins, resigned.—Chicago (Northwestern University): Dr. J. A. Abt, of the Rush Medical College, has been appointed Extraordinary Professor of Children's Diseases.—Cornell (New York): Dr. William B. Dr. Kubinyi has been recognised as Coley, Lecturer in the College of Physicians and Surgeons, New York, has been appointed Professor of Surgery.— Florence: Dr. Ferruccio Schupfer has been promoted to the Ordinary Professorship of Internal Pathology. - Freiburg: Dr. B. Salge of Göttingen has been appointed Extraordinary Professor of Children's Diseases.—Genoa: Dr. Aldo Fabris has been appointed Extraordinary Professor of Pathological Anatomy.—Harvard: Dr. Elmer E. Southward has been appointed to the chair of Neurology, Dr. Myles Standish to the chair of Ophthalmology, and Dr. Milton J. Rosenau to that of Hygiene and Preventive Medicine.— Pisa: Dr. Giuseppe Tusini has been appointed Extraordinary Professor of External Pathology.—Prague (German University): Dr. Karl Walko, privat-docent of Medicine, has been granted the title of Extraordinary Professor.—Rome: Dr. L. Concetti has been promoted to the Professorship of Children's Diseases.—Tübingen: Dr. Alfred Busch has been recognised as privat-docent of Psychiatry. Würzburg: Dr. Gerhard Hotz has been recognised as privatdocent of Surgery.

KING EDWARD'S HOSPITAL FUND FOR LONDON. Amongst the latest contributions received at the Bank of England for King Edward's Hospital Fund for London are the following: Annual subscriptions—Alderman Sir W. Vaughan Morgan, Bart., £50; Rev. A. W. Davies, £25; Messrs. Tattersalls, £25. Donations—Mr. C. W. Drabble, £105; Home and Colonial Stores, Limited, £26 5s.

Worthing Isolation Hospital.—The borough of Worthing now possesses a good modern isolation hospital, which was formally opened on Sept. 29th. Situate at Swandean, the site is in every way excellent for such an establishment. For a good many years there has been accommodation there for infectious cases, but under cramped conditions of space it has been found exceedingly difficult to isolate different kinds of cases. The erection of two ward pavilions allows accommodation for 32 patients in all, and one ward is to be set apart for diphtheria and the other for scarlet fever. Originally the idea was to erect one pavilion for 14 beds, but consultation with the Local Government cost, together with the necessary land, has been £10,000, and this provision should meet the requirements of the borough for many years.

THE GUILD OF ST. LUKE.—The annual meeting and festival of the Birmingham Ward will be held on Wednesday, Oct. 27th, at 8 P.M., at Holy Trinity Church, Coventry, when the festival sermon will be preached by the Lord Bishop of Worcester. All medical practitioners in the district are invited to attend.

INSTITUTE OF HYGIENE.—The progress of the Midland Counties branch during the two years of its existence has been so encouraging that it has been thought wise to acquire a hall to provide accommodation for the delivery of lectures, the holding of examinations, and especially for the establishment of a permanent exhibition of hygienic products. This exhibition was opened last week by Sir William Bennett.

THE SALISBURY INFIRMARY.—The 142nd anniversary service of Salisbury Infirmary was held at the Salisbury Cathedral on Sept. 28th. The members of the corporation, wearing their robes of office, joined the procession from the infirmary, which included the Earl of Pembroke (visitor to the institution), Earl Radnor (the President), the court of governors, and the medical staff. The sermon was preached by the Dean, Dr. Page Roberts.

Ptomaine Poisoning from Shrimps.—After partaking of some shrimps purchased from a street vendor at Shoreham (Sussex) a little girl of six years was seized with abdominal pains and died within a very short time. At the inquest on Sept. 29th Dr. W. A. Kinloch said that death was due to exhaustion following ptomaine poisoning, and a verdict was returned accordingly. The jury added a rider calling the attention of the urban council to the hawking and selling of food which was unfit for consumption, and the coroner, Mr. F. W. Butler, said that he would bring the matter before the notice of the police.

THE HOSPICE OF THE LITTLE ST. BERNARD.—
The Order of St. Maurice, to which the hospice belongs, in view of the increasing numbers of well-to-do visitors of all nationalities who pass the night at it, has decided to charge from 3 fr. to 5 fr. for the use of a room and 2 fr. 50 c. for board per diem. This decision it has come to in the interests of the many humble and needy wayfarers for whom the hospice was primarily founded, and who not seldom have been "crowded out" by others well able to pay for the accommodation and the nourriture they have hitherto been not above accepting gratuitously.

University of London.-A course of eight lectures on "Recent Researches on Chloroform Anæsthesia" will be given during the first term of the present session by Professor G. A. Buckmaster and Mr. J. A. Gardner in the Physiological Laboratory of the University on Tuesdays at 5 P.M., beginning on Oct. 12th. During the second term a course of eight lectures on a subject to be announced will be given by Mr. W. B. Hardy, F.R.S., on Tuesdays at 5 P.M., and during the third term a course of eight lectures on "The Physiology of the Peripheral Nerves" will be given by Dr. N. H. Alcock on Tuesdays at 5 P.M. Details of these courses will be published at a later date. The lectures are addressed to advanced students of the University and to others interested in physiology. All the courses have been recognised as courses of advanced lectures which a candidate at the B.Sc. (honours) examination in physiology may name for part of his practical examination. Any member of a London school of medicine, whether an undergraduate of this University or not, is entitled to a card of admission on application to the academic registrar. In addition a course of eight lectures on "Recent Advances in the Physiology of Digestion," by Professor E. H. Starling, F.R.S., will be given at University College, on Fridays at 5 P.M., beginning on Oct. 15th; a course of six lectures on "The Pineal and Pituitary Bodies" will be given by Professor A. Dendy, F.R.S., and Professor W. D. Halliburton, F.R.S. at King's College, on Mondays, at 4.30 P.M., beginning on Nov. 1st; and a course of eight the Chief Constituents of Urine" will be given by Dr. E. L. Kennaway and Mr. J. H. Ryffel, at Guy's Hospital, on Thursdays, at 5 P.M., beginning on Oct. 7th. For further

information application should be made to the authorities of the different Colleges.

KING'S COLLEGE (UNIVERSITY OF LONDON).—A public inaugural lecture will be delivered on Oct. 12th, at 4 P.M., by Professor C. A. Barkla, D.Sc., on "Röntgen Rays." The chair will be taken by the Vice-Chancellor of the University of London.

FLAG RANK FOR A NAVAL PHYSICIAN.—Überall, the organ of the German Navy League, announces amongst recent promotions to the rank of rear-admiral in the German navy the name of Dr. Runkwitz, "Naval General Physician," lately principal medical officer of the High Sea Fleet.

St. Bartholomew's Hospital and College (University of London).—The following scholarships have been awarded on the results of a recent examination: (1) senior entrance scholarship in science (value £75), A. G. Evans, B.A., Trinity College, Cambridge; (2) senior entrance scholarship in science (value £75), A. C. Roxburgh, B.A., Trinity College, Cambridge, and G. Sparrow, B.A., Caius College, Cambridge (equal); (3) junior entrance scholarship in science (value £50), P. O. Ellison and D. H. D. Wooderson (equal); (4) entrance scholarship in arts (value £100), C. Cooke, Magdalen College School, Oxford; and (5) Jeaffreson exhibition in arts (value £50), G. C. Linder, Brighton Grammar School.

GUY'S HOSPITAL MEDICAL SCHOOL.—The following entrance scholarships and certificates have been awarded: Senior Science Scholarship for University Students, £50, Trevor Brady Heaton, B.A., Christ Church College, Oxford. Junior Science Scholarships: £150, Charles Hamilton Gould, Preliminary Science Class, Guy's Hospital, and Christchurch, New Zealand; £60, James York Moore, Preliminary Science Class, Guy's Hospital; equal certificates, Allen Noel Minns, Thetford Grammar School, and Cyril Henry Edwards, St. Paul's School, West Kensington, W. Entrance Scholarships in Arts: £100, Henry Francis Thomas Hogben, Bedford Grammar School, and William Morris Lansdale, St. Olave's and St. Saviour's Grammar School, equal; £50, James Kyle, University Tutorial College.

THE HEALTH OF MALTA.—Sir E. M. Merewether. K.C.V.O., C.M.G., Chief Secretary to the Government of Malta, reporting on the Blue-book of the colony for 1908-09, Malta, reporting on the Blue-book of the colony for 1908-09, states that the estimated population on April 1st this year was 212,888, an increase of 2914 on the previous year. The birth-rate in 1908-09 was 38-22 per 1000, as compared with 39.57 per 1000 in 1907-08. The death-rate of the civil population in 1908-09 was 23.4 per 1000, as against 23.09 per 1000 in the previous year. The general state of the public health was on the whole good. There were 471 case of Mediterranean fever with 50 deaths, as against 520. of Mediterranean fever, with 50 deaths, as against 520 cases, with 45 deaths, in the previous year. There were only eight cases in the fleet and garrison, none of which proved fatal. In the Central (Civil) Hospital the use of unboiled milk has been discontinued since 1907-08, and a remarkable diminution in the number of cases contracted in that institution has been the result. The number of cases of Mediterranean fever contracted in the Civil Hospital in 1905-06 and 1906-07 was 23 and 11 respectively, while only five cases were reported in 1907-08 and none at all in 1908-09. In May, 1908, a committee was appointed to consider the steps to be taken for the suppression of Mediterranean fever among the civil population, the report of which was received in January last. Regulations were drawn up on the general lines indicated by the committee and were brought into force on July 1st, 1909. There was a considerable abatement in the measles epidemic, but there was a serious epidemic of influenza, 440 cases with 16 deaths being reported. All but one of the 23 deaths from diphtheria occurred among the civil population. The percentage of deaths to the number of cases was 15.6, as against 23.3 in 1907-08 and 32.2 in 1906-07. Owing to the ignorance or carelessness of parents in feeding and nursing their infants, infant mortality continues to be excessive. The infants, infant mortality continues to be excessive. number of deaths which occurred among children under 12 months was 1824, or 224 per 1000 births, while the number of those who died before reaching the age of five years was 2569, or 316.57 per 1000 births. For the reason given,

enteritis is the disease which causes the greatest number of deaths amongst infants, the total number of children who have died of that disease in the past ten years being 10,347.

ROYAL COLLEGE OF SURGEONS OF ENGLAND: MUSEUM DEMONSTRATIONS.—The following demonstrations of specimens in the Museum will be given in the theatre of the College in Lincoln's Inn-fields for medical practitioners and advanced students by Professor Arthur Keith and Professor S. G. Shattock alternately:—Oct. 15th, 5 P.M. (Professor Keith): Specimens illustrating Various Forms of Constrictions and Occlusions found in the Course of the Alimentary Canal. Oct. 18th, 5 P.M. (Professor Shattock): Osteoma. Oct. 22nd, 5 P.M.: Specimens illustrating Various Forms of Congenital and Acquired Diverticula of the Alimentary Canal. Oct. 25th, 5 P.M.: Adenoma and Papilloma. Oct. 29th, 5 P.M.: Specimens illustrating Malformations of the Abdominal Wall and Irregularities in the Fixation of the Viscera. Nov. 1st, 5 P.M.: Sarcoma.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Parliamentary Session.

THE Parliamentary session, it now seems probable, will extend into the middle of November. If the majority of the peers carry out the intention which is more and more freely attributed to them, of refusing to pass the Finance Bill, a General Election is inevitable. This, of course, is the dominating factor in politics at present. If a General Election does become necessary, it will in all probability take place in January rather than at the end of the year.

The Housing and Town Planning Bill.

The House of Lords has considered the Housing and Town Planning Bill on report, but the drastic amendments made in committee remain for the most part. No alteration has been made in Clause 69, which deals with the appointment of county medical officers. In committee two subsections were cut out at the instance of Lord Belper. One of these subsections gave the Local Government Board power by order to prescribe the duties of medical officers of health appointed by a county council. The other rendered these medical officers irremoveable except with the consent of the Local Government Board. No attempt was made to reintroduce these provisions, and accordingly the Bill now goes forward for third reading without them. The Lords occasionally exercise the privilege of amending a Bill on third reading, but after their attitude in committee on these points any revision of the text of the clause as it now stands is quite improbable.

HOUSE OF LORDS.

MONDAY, OCT. 4TH.

District Medical Officers of Health.

During the consideration on report of the Housing and Town Planning Bill,
The Earl of HARROWBY moved to amend Clause 69 (appointment of

The Earl of Harrowby moved to amend Clause 69 (appointment of medical officer by county council) by introducing into it the following subsection: "A medical officer of health of a district who is not in private practice shall not be appointed for a limited period only and shall be removeable by the electing authority with the consent of the Local Government Board and not otherwise." He said that the district medical officers of health should have the protection of this provision, which they were anxious to obtain. It was said that the Government intended to bring in a Bill next year to deal with such matters, but the present President of the Local Government Board might not be in office then to bring it in, or there might be no time to deal with it.

Earl BEAUCHAMP (who had charge of the Bill on behalf of the Government) expressed sympathy with the object of the amendment, but deprecated the introduction of such a provision in a clause dealing exclusively with the medical officers of counties. It might be better to take the matter up next session in a Public Health Bill.

The Earl of Harrowby withdrew his amendment.

HOUSE OF COMMONS.

THURSDAY, SEPT. 30TH.

Lavatory Accommodation for Workmen.

Lavalory Accommodation for Workmen.

Mr. Wardle asked the Secretary of State for the Home Department whether his attention had been called to the practice extensively carried on in Germany and America whereby wardrobe and lavatory accommodation was provided for workmen at the place of their employment; and whether, in view of the benefit in public health and cleanliness to be derived from such a practice, he would consider the advisability of securing the extension of the practice in this country.—Mr. Gladstone replied: My attention has been called to this matter and in connexion with mines it has received the consideration of the Royal Commission on Mines. The honourable Member will find their recommendations on the subject in Part XVIII. of the recently issued report. In the case of a number of trades where the conditions of work make the provision of lavatory and cloak-room accommodation especially important for the health of the workpeople, the employer is now required under the Factory Acts to workpeople, the employer is now required under the Factory Acts to

provide it, and in many other cases such accommodation is supplied voluntarily by employers. The report of the chief inspector of factories for 1908 notes, I am glad to say, a growing tendency to provide improved facilities for washing in many districts, and the question is receiving the constant attention of my department.

The Medical Treatment of Suffragist Prisoners.

Mr. Snowden asked the Secretary of State for the Home Department whether he had any information as to the state of health of the women suffragist prisoners and whether they were still being fed by force.—Mr. GLADSTONE answered: I am glad to say that the improvement of the health of all the suffragist prisoners continues. I am not absolutely able to answer the question as to whether they are still fed by force. "Force," however, is hardly the right word to apply, because I understand that although three of them are being fed by the medical officers they are in a sense fed without any resistance on the part of the prisoners. I may say that in no case has the stomach-pump been used. Mr. Snowden: May I ask whether it is not a fact that the women are handcuffed during the time food is being administered?

Mr. GLADSTONE: No, sir; there is no truth whatever in that statement. Mr. Snowden asked the Secretary of State for the Home Department

statement.

Mr. A. Lynch: May I ask why the right honourable gentleman so ostentatiously puts forward the medical aspect of the case, and whether the medical officers in the prison have acted under his instructions and

by his directions?

Mr. Gladstone: I put forward the medical officers in a prominent position because it is a medical question, and a very heavy responsibility

sets upon them.

Mr. Lynch: Is it usual for medical officers to act on the instructions of the right honourable gentleman or on their own initiative in such

Mr. Gladstone: What authority has the honourable Member for saying that I have given instruction to the medical officers? It is the duty of the medical officers to attend to the health of prisoners in their charge and that is precisely what the medical officers have been doing

FRIDAY, OCT. 1ST.

The Medical Treatment of Suffragist Prisoners.

The Medical Treatment of Suffragist Prisoners.

Mr. Keir Hardie asked the Secretary of State for the Home Department whether he had received any report from the medical officer at Winson Green Gaol, Birmingham, detailing the method adopted to administer food by force to the women suffrage prisoners; whether the instrument used was Blandford's casophageal instrument, or whose; whether a screw gag was used to prise the teeth apart and keep the jaws open; whether the prisoners were strapped down, or, if not, how many attendants took part in the operation; and whether he could give the names of the women who had been subjected to this treatment.—Mr. Gladstone wrote in reply: I have received several reports from the medical officer. I find that Blandford's casophageal tube has not been used; in those cases where a tube was required the ordinary soft rubber feeding-tube used in hospitals was employed. No screw gag was used, and the prisoners were not strapped down. The number of attendants present varied from one to five. I do not think it is desirable that I should mention the names of the prisoners. I am satisfied that everything has been done with the utmost gentleness possible in the circumstances, and the prisoners themselves have borne witness to the kindness of the officers.

Monday, Oct. 4TH.

MONDAY, OCT. 4TH.

The Medical Treatment of Suffragist Prisoners.

The Meilical Treatment of Suffragist Prisoners.

Mr. Keir Hardie asked the Secretary of State for the Home Department whether the medical officer of Winson Green Gaol, Birmingham, reported any injury to the teeth, throat, or other parts of the body of those women prisoners who had undergone the special hospital treatment known as administering food by force, and whether the medical officer had said for how long this treatment could be continued without serious injury to the patients.—Mr. MASTERMAN replied (on behalf of Mr. GLADSTONE): The medical officer reports that no injury to the throat, teeth, or other parts of the body has been sustained by any of the prisoners who have undergone the special hospital treatment mentioned in the question. My right honourable friend is advised on good medical authority that no serious injury is to be apprehended in any case of this kind, even if the treatment has to be prolonged for some considerable time. considerable time.

case of this kind, even if the treatment has to be prolonged for some considerable time.

Mr. Kfir Hardif: Has the Home Office seen the report by eminent medical authorities to the effect that this treatment produces permanent injury and very often fatal results?

Mr. Masterman: I have seen no such report.

Mr. Kfir Hardif asked further how often during the past 12 months prisoners in Winson Green Gaol, Birmingham, had had food administered to them by force; whether, in the case of the women suffragists who had undergone this treatment, the operation was performed by the prison doctor or, if not by him, by whom; and what was the method adopted in connexion with the operation.—Mr. Masterman replied: With the exception of these women prisoners there have been no cases in Birmingham Prison during the past 12 months in which it has been accessary to feed any prisoner forcibly. This treatment has been administered in some cases by the medical officer and in other cases by a medical practitioner who has been called in to assist him. The method has been, where practicable, feeding by means of teaspoon or from a feeding cup, but where necessary the soft rubber tube in use in hospitals has been employed.

Mr. Belloc: Has not this been the constant practice in regard to men for many years past?

Mr. Masterman: It has been the constant practice with respect to men and women for many years past.

Mr. MASTERMAN: It has been the constant practice with respect to men and women for many years past.

Mr. Keir Hardle asked whether the Home Secretary had received a petition from the parents or other relatives of some of the women suffragist prisoners in Winson Green Gaol, Birmingham, stating that they were anxious concerning the state of health of the prisoners, and praying to be allowed to send their own medical adviser to report on their condition; and, if so, whether he had been able to so far relax the prison rules as to comply with this request.—Mr. MASTERMAN answered: Applications to the effect indicated have been received, but my right honourable friend has been unable to accede to them. The prisoners mentioned are receiving full and constant attention from the medical officer of the prison, who has been in consultation with the medical authorities of the Home Office at the time when the

refusal to take food made the prisoners' state of health serious, and has had the assistance of a medical man in practice in Birmingham who has been present when food has been administered. According to the latest report received this morning the health of the prisoners continues to improve. Only one of them still refuses to take food without the use of

Meat Inspection.

Mr. Watt asked the President of the Local Government Board whether he was aware that uniformity of standard of meat inspection was enjoined and followed throughout the German Empire; and whether he proposed to adopt a similar course in this country, especially in view of the fact that cities and boroughs which adopted a high standard of inspection were pensilised by the trade being sent elsewhere.

—Mr. Burns replied: I am aware of the system adopted in Germany for securing uniformity of meat inspection. I do not think that it would be practicable to enforce a similar system in this country at the present time; but both by circulars which they have issued and by the inquiries made by its inspectors the Local Government Board has pressed upon local authorities and their officers the importance of uniform and efficient meat inspection. I am happy to say that in the country generally there has been a distinct improvement during the last few years in the qualifications of meat inspectors and the practice of meat inspection.

Tuesday, Oct. 5th.

TUESDAY, OCT. 5TH.

Tuberculosis in the Post Office Service.

Mr. Summerred from his department during the years 1899 to 1908 suffering from tuberculosis; and whether, on their discharge, any provision for the treatment of the disease in a home or hospital was made by his department on their behalf; and whether any money grant was made to such men.—Mr. Buxton replied: The number of established Post Office servants superannuated on account of tuberculosis during the past ten years is as follows:—

		Men.	W	omen.			Men.	Women.		
1899	********	72	•••••	11	1904	•••••	109	•••••	19	
1900		82		11	1905		96		18	
1901	••••••	9 5	•••••	21	1906		101	•••••	15	
1902	*******	76	********	6	1907		81	•••••	15	
1903	********	104	•••••	15	1908	•••••	90	•••••	20	

The established force to which these figures refer numbered in 1908 in round figures 90,000. There is no official arrangement for affording treatment to Post Office servants suffering from tuberculosis. Every established officer retiring on account of ill-health is entitled either to a penaion or a gratuity under the terms of the Superannuation Acts.

Tuberculosis in the Navy.

Tuberculosis in the Navy.

Mr. SUMMERBELL asked the First Lord of the Admiralty to state the number of men discharged from the navy during the years 1899 to 1908 suffering from tuberculosis; whether, on their discharge, any provision for the treatment of the disease in a home or hospital was made by his department on their behalf; and whether any money grant was made to such men.—Mr. McKenna answered: The number of officers and men finally invalided from the service (including marines) for tuberculosis for the years 1899 to 1908 is 2573 made up as follows: 1899, 207; 1900, 185; 1901, 232; 1902, 288; 1903, 354: 1904, 353; 1906, 331; 1906, 214; 1907, 266; 1908, 283. No special provision is made for their treatment on their discharge in a home or hospital. They are paid gratuities or pensions according to their service under the ordinary regulations.

Lead Polassaina in Savanaea.

Lead Poisoning in Swansea.

Mr. Charles Duncan saked the Secretary of State for the Home Department what was the number of cases of lead poisoning during 1908 in the Swansea district in the spelter, lead, and silver works; whether such cases were on the increase; and, if so, whether any additional safeguards were to be introduced with a view to the prevention, as far as possible, of such cases in the future.—Mr. Gladstoner replied: The number of cases in 1908 was 38, as compared with nine in 1907, but in the first eight months of this year there were 24 cases, as compared with 28 in the corresponding period of 1908. A special inquiry had been made by one of the medical inspectors of factories in regard to lead smelting and certain allied industries, and his report, which includes recommendations for further precautions, has just been received and is under consideration.

Dundee Eastern Poorhouse.

Mr. WILKIE asked the Lord Advocate whether his attention had been drawn to the case of attempted suicide in the Dundee Eastern Poorhouse some five months ago; whether he was aware that the committee appointed by the Dundee parish council to inquire into this case expressed dissatisfaction with the investigation of the medical inspector of the Local Government Board; and whether, in view of the above facts and the assertions which had been made against certain officials in the Dundee Eastern poorhouse hospital as to the treatment of patients, he would institute a public inquiry, under the Local Government Board, to investigate into the assertions made.—Mr. Uku repiled: In April last the case of attempted suicide referred to was formally reported to the Local Government Board. The circumstances were at once inquired into by the Board's medical inspector, who, in view of the facts then elicited, formed the opinion that the accident was such as might have occurred in any institution, however well managed. The Board was not able to attach blame to any of the poorhouse staff. Two months after the accident, and a month after the death of the inmate a subcommittee of the parish council was appointed to inquire into certain allegations the accident, and a month after the death of the inmate a subcommittee of the parish council was appointed to inquire into certain allegations affecting the poorhouse administration, and, in particular, the actions of the resident medical officer. It is the case that the subcommittee, in its report of August 11th, expressed the view that the investigation made by the medical inspector into the suicide was not so full as the seriousness of the case required, and held that the resident medical officer was to blame. The facts elicited by the medical inspector and by the evidence taken before the subcommittee leave ground, in the opinion of the Local Government Board, for a legitimate difference of opinion; but on August 24th last the Local Government Board expressed its satisfaction with the adequacy of the subcommittee's inquiry into the various complaints, and, as the resident medical officer had resigned in

June, intimated that it did not propose to hold any supplementary inquiry. As the subcommittee has advanced good reasons for considering that the complaints, so far as substantiated, were all directly or indirectly due to the conduct of the resident medical officer, and, as he has long ago ceased to be a member of the poorhouse staff, the Local Government Board does not propose to reopen the inquiry.

WEDNESDAY, OCT. 6TH.

The Medical Treatment of Suffragist Prisoners.

Wednesday, Oct. 6th.

The Medical Treatment of Suffragist Prisoners.

Mr. Keir Hardie asked the Secretary of State for the Home Department (in the absence of the Prime Minister) whether he had received a memorial signed by Sir Victor Horsley and 116 other medical practitioners pointing out that the compulsory feeding of women prisoners was attended with the gravest risks, that unforeseen accidents were liable to occur, that the subsequent health of the person so treated might be seriously injured, and that, in the opinion of the memorialists, the action was unwise and inhumane, and praying him to use his influence to prevent the continuance of the practice; and whether he is prepared to accede to the prayer of the memorialists.—Mr. Gladstore replied: The memorial has been received. Though the statements it contains are not borne out by the prison medical authorities, whose experience of artificial feeding is necessarily much wider than that of the memorialists. I thought the right to refer the memorial to the President of the Royal College of Physicians of London, and I have this morning received the following letter from Sir Richard Douglas Powell:—"I beg to state that I do not agree with the opinion expressed in the memorial signed by some medical practitioners in protest against the artificial feeding of certain prisoners who refuse to take food in the normal manner. The statements contained in the memorial are inaccurate and greatly exaggerated. The method of artificial feeding is largely employed amongst those who from mental aberration refuse to take nourishment otherwise and also with those who are physically unable to take it. It would be an exaggeration to say that the method of artificial feeding is wholly free from the possibilities of accident with those who forcibly resist, but no such cases have come to my knowledge. Nor can it be said that the method is as convenient or as free from possible digestive allments or discomforts as a reasonable diet taken naturally would be. But it may be remarked th

BOOKS, ETC., RECEIVED.

HIRSCHWALD, AUGUST, Berlin.

Die Chirurgischen Krankheiten der Brust und ihre Behandlung.
Von Dr. Carl Beck. Aus dem Englischen übersetzt von Dr.
Schröder, Düsseldorf. Price M.12.
Spezielle Diätetik und Hygiene des Lungen- und KehlkopfSchwindsüchtigen. Von Dr. Felix Blumenfeld, Wiesbaden.
Zweite vermehrte und verbesserte Auflage. Price M.2.80.

The Theory and Practice of Medicine. By Frederick T. Roberts, M.D., B.Sc., F.R.C.P. Tenth edition. With Appendix, 1909. Price 12s. 6d. net.

LOCKWOOD, W., AND Co., London. (URBAN UND SCHWARZENBERG, Berlin und Wien.)

Pocket Medical Dictionary in Eight Languages (English, German, French, Italian, Japanese, Russian, Spanish, Hungarian). Edited by Dr. J. Meyer, Berlin, in Collaboration with D. O'C. Finigan, M.D. Berlin, M.R.C.P. Lond. Price 20s.

LONGMANS, GREEN, AND Co., London, New York, Bombay, and Calcutta.

Anatomy, Descriptive and Applied. By Henry Gray, F.R.S. Seventeenth edition. Edited by Robert Howden, M.A., M.B., C.M. Notes on Applied Anatomy, revised by A. J. Jex-Blake, M.A., M.B., M.R.C.P., and W. Fedde Fedden, M.S., F.R.C.S. Price 32s. net.

The Vegetable Proteins. By Thomas B. Osborne, Ph.D. Price 3s. 6d. net.

RLBOROUGH, E., AND Co., London.

Norwegian Self-Taught. With Phonetic Pronunciation. By C. A. Thimm. Fourth Edition. Revised and enlarged by P. Th. Hanssen. Price, wrapper, 2s.; cloth, 2s. 6d.

REID, ANDREW, AND Co., LIMITED, London and Newcastle-upon-Tyne.

Armstrong College, Newcastle-upon Tyne. (In the University of Durham.) Calendar. Session 1903-1910. Price 1s. Post free, 1s. 4d.

SPRINGER, JULIUS, Berlin.

Bericht über die Tätigkeit der zur Erforschung der Schlafkrankheit im Jahre, 1906-07, nach Ostafrika entsandten Kommission. Erstattet von Dr. R. Koch, Kaiserlicher Wirklicher Geheimer Rat, Dr. M. Beck, und Dr. F. Kleine. Price not stated.

University Press, Liverpool. (Constable, Archibald, and Co., LIMITED, London.)

Studies in Tuberculosis. By Henry Clarke, M.A., M.D. Cantab-Price 5s. net.

VINCENT MUSIC COMPANY, LIMITED, London. (DONLAN, THOMAS J., Boston, Mass., U.S.A.)

Science and Singing. A Consideration of the Capabilities of the Vocal Cords and Their Work in the Art of Tone Production. By Ernest G. White. Price 4s. 6d. net, or \$1.25.

Zypointments.

Successful applicants for Vacancies. Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANGET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

BEVIR, GEORGE, L.R.C.P. Lond., M.R.C.S., has been appointed District

BEVIR, GEORGE, L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer by the Clutton (Somerset) Board of Guardians.

COOKE, CHARLES JAMES, M.D., M.Ch., B.A.O.R.U.I., has been appointed Medical Officer to the Board of Trade at Plymouth.

DESPREZ, H.S., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the North Tawton District of the county of Devon.

DREW, J. HARMER, M.B., B.S. Lond., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

EDWARDS, A. H., M.B., C.M. Edin., F.R.C.S. Edin., has been appointed Dispensary Surgeon to the Western Infirmary, Glasgow.

GRANT, ROBERT, M.D. Aberd., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Cromer District of the county of Norfolk.

MORTON, R.FGINALD, M.D. Tor., F.R.C.S. Edin., has been appointed Medical Officer in Charge of the X Ray Department at the West London Hospital.

NICOL, J. W., M.B., C.M. Glasg., has been appointed Physician for Skin Diseases in the Western Infirmary, Glasgow.

NORMAN, VINCENT P., L.M.S.S.A. Lond., has been appointed Clinical Assistant to the Rye Department of the West London Hospital.

POIGNAND, R. N., M.B. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Littleport District of the county of Cambridge.

TOMKINSON, J. G., M.D., Ch.B. Glasg., has been appointed Physician to the Skin Dispensary of the Western Infirmary, Glasgow.

Pacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

AYLESBURY, ROYAL BUCKINGHAMSHIRE HOSPITAL.—House Surgeon nmarried. Salary £100 per annum, with board, washing, and

lodging.
BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried.

BIRMINGHAM GENERAL DISPANSABY.—Resident Surgeon, unmarried. Salary £200 per annum.

BLACKBURN AND EAST LANCASHIRE INFIRMARY.—Senior House Surgeon, also Junior House Surgeon. Salaries £110 and £30 per annum, with board, residence, &c.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—Two House Surgeons, for six months. Salary at rate of £75 per annum, with board and weddence.

board and residence.

BRIGHTON, HOVE, AND PRESTON DISPENSARY (Northern Branch).—
Resident Medical Officer, unmarried. Salary £160, with rooms, &c.
BRIGHTON, SUSSEX COUNTY HOSPITAL.—Third House Surgeon, unmarried. Salary £50 per annum, with spartments, board, and laundry.

BRISTOL GENERAL HOSPITAL.—House Surgeon, Casualty House Surgeon, and Assistant House Physician. Salaries £80 per annum, with board, residence, &c.

BRISTOL ROYAL INFIRMARY—Resident Casualty Company of the control

INFIRMARY.—Resident Casualty ROYAL

BRISTOL HOYAL INFIRMANY.—RUSHUGHY CASSAMRY, DANAIN, MORTHS. Salary at rate of £50 per annum, with board, lodging, and washing.

BURY ST. EDMUNDS, WEST SUFFOLK GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and lodging.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Physician, unmarried. Salary £70 per annum, with board, lodging, and washing. washing.
CARDIFF INFIRMARY (GENERAL HOSPITAL).—House Surgeon. Salary

260, with board and residence. ELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical

Assistant.
CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, R.—Physician to Out-patients.
COLCHESTER, ESSEX COUNTY HOSPITAL.—House Physician, also House Surgeon. Salary in each case £30 per annum, with board, residence,

Surgeon. Salary in each case £30 per annum, with board, residence, and washing.

Rast London Hospital for Children and Dispensary for Women Shadwell, E.—Assistant Surgeon. Also Second Medical Officer to the Casualty Department for six months. Salary at rate of £40 per annum, with luncheon and tea.

Edinburgh, Royal Edinburgh Asylum.—Junior Medical Officer. Salary at rate of £125 per annum, with board, residence, and laundry.

HALIFAL UNION POORLAND MEDICAL STATEMENT OF THE PROPERTY OF THE

Haundry.

HALIPIA UNION POOR-LAW HOSPITAL, Salterhebble.—Resident Medical Officer. Salary £130 per annum, with apartments, rations, and

washing.
Hospital for Consumption and Diseases of the Chest, Brompton.

Resident House Physicians for six months. Salary £25.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—
House Surgeon, unmarried, for six months. Salary £30, with board and residence. Also Honorary Amesthetist.

KING EDWARD VII. SANATORIUM, Midhurst, Sussex.—Junior Assistant Medical Officer. Salary £100 per annum, with board, lodging, and attendance.

attendance.
LINCOLM MENTAL HOSPITAL, The Lawn, Lincoln.—Assistant Medical
Officer, unmarried. Salary £150 per annum, board, &c.
LIVERPOOL DISPENSARIES.—Assistant Surgeon, unmarried. Salary £100
per annum, with board and apartments.
LIVERPOOL, STANLEY HOSPITAL.—Senior House Surgeon. Salary £100
por annum, with board, residence, and laundry.
LONDON HOSPITAL, Whitechapel, B.—Surgeon, Assistant Surgeon,
Medical Officer in charge of the Radiographic Department, and two
Assistant Ansethetists. Assistant Angethetists

LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—Assistant Surgeon and two Assistant Amesthetists. MERTHYR TYDFIL WORKHOUSE.—Assistant Medical Officer. Salary

£120 per annum, with apartments, rations, laundry, and attendance.

METROFOLITAN HOSPITAL, Kingsland-road, N.E.—Resident Ansesthetist.

Resident Medical Officers. Salary 2:100 and 2:50 per annum respectively, with board and residence.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—House Physician. Salary 2:50 per annum, with board, residence, and laundry.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—House Physician, unmarried. Salary 2:50 per annum, with board, lodging, and

washing.
NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160, with apartments, attendance, light,

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Physician. Salary £60 per annum, with board, lodging, and washing.

NOTTINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Medical

NOTTINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Medical Officer, unmarried. Salary £130 per annum, with apartments, board, washing, and attendance.

Paddington Green Children's Hospital, London, W.—House Physician, also House Surgeon, both for six months. Salary in each case at rate of 50 guineas per annum, with board and residence.

Paddington Infirmary and Workhouse.—Second Assistant and Medical Officer for six months. Salary at rate of £100 per annum, with board, lodging, and washing.

Poplar Hospital for Accidents, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

geon for six months. Salary at rate of £30 per annum, with board and residence.

POPLAR WORKHOUSE, High-street, Poplar, E.—Resident Medical Officer. Salary £300 per annum, with apartments, light, and coal.

PRESTWICH UNION INFIRMARY AND WORKHOUSE.—Assistant Medical Officer. Salary £140 per annum, with apartments, rations, &c.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—House Surgeon, House Physician, Junior House Surgeon, and Junior House Physician. Salaries of two former £75 per annum, and of two latter £40 per annum, with residence, board, and laundry.

QUEEN'S HOSPITAL FOR CHILDREN. Hackney-road. Bethnal Green, E.—Assistant Resident Medical Officer. Salary £75 per annum, with board, residence, and washing.

board, residence, and washing.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—House Physician and House Surgeon (males). Also House Physician and House Surgeon (females), for six months. Board, lodging, and washing

provided.

ROYAL Hospital for Diseases of the Chest, City-road, London,
E.C.—Assistant Physician.

Provided.

ROTAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, London, B.C.—Assistant Physician.

ROYAL WATERIOO HOSPITAL FOR CHILDREN AND WOMEN, Waterloo Bridge-road, S.E.—Junior Resident Medical Officer. Salary at rate of £40 per annum, with board and washing.

ST. Luke's Hospital For Menyal Diseases, Old-street, London.—Clinical Assistant, unmarried, for six months.

ST. Mark's Hospital For Fistula and other Diseases of the Rectum, City-road, E.C.—Three Clinical Assistants.

ST. PANCRAS GUARDIANS OF THE POOR.—District Medical Officer for Ward No. S. Salary £20 per annum.

SALFORD ROYAL HOSPITAL.—House Surgeon. Salary at rate of £60 per annum, with board and residence.

SHEFFIELD ROYAL INFIRMARY.—Assistant House Physician. Salary £50.

SWANSEA GENERAL AND EYE HOSPITAL.—House Physician. Salary £75.

WESTMINSTER GENERAL DISPENSARY.—Resident Medical Officer. Salary £120 per annum, with rooms, gas, coal, and attendance.

WOLVERHAMPTON AND STAFFORDSHIER GENERAL HOSPITAL.—House Surgeon. Salary £30 per annum, with board, lodging, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Salford (East), in the county of Lancaster; at Kirkpatrick-Durham, in the county of Kirkcudbright; at Windermere, in the county of Westmorland; and at Leslie, in the county

Births, Marriages, and Deaths.

COLLINGWOOD.—On Oct. 2nd, at Hong-Kong, the wife of Captain P. H. Collingwood, R.A.M.C., of a daughter.

HARMAN.—On Sept. 30th, at Harley-street, London, W., the wife of N. Bishop Harman, F.R.C.S., of a daughter.

MARRIAGES.

DICKSON—RHODES.—On Sept. 28th, at St. Leonard's, Bridgmorth, Louis Edington Dickson, M.D., B.S., to Margaret Helen, only daughter of the late William Rhodes, M.R.C.S., L.R.C.P., and Mrs. Rhodes of Bridgmorth.

ELDER—WAYCOTT.—On Oct. 2nd, at St. Mary's, Bryanston-square, W., Henry Adamson Fielden, M.D., of Shildon, Durham, to Winifred, eldest daughter of Bobert Waycott, Paignton, Devon.

DEATHS.

DEATHS.

MUSEETT.—On August 25th, 1909, at 143, Elizabeth-street, Hyde Park, Sydney, N.S.W., Philip Edward Muskett, L.R.C.P. et L.R.C.S. Edin., aged 52.

POLIOCK.—On Oct. 5th, at Park-street, Grosvenor-square, William Rivers Pollock, M.D. Cantab., F.R.C.P., aged 50 years.

SMITH.—On Oct. 1st, at Stratford-place, W., Sir Thomas Smith, Bart. K.C.V.O., F.R.C.S., Honorary Serjeant-Surgeon to H.M. the King, aged 76 years.

aged 76 years.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births. Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

AN INTERNATIONAL COLOUR CHART.

THE Secretary of the Royal Horticultural Society has recently addressed a letter to the press calling attention to the difficulty which his society has felt for many years in describing definitely the colour of any flower "in terms which shall be distinctly and definitely intelligible in New York and Paris, Berlin and Quebec, as in London." After pointing out the difficulty which all must feel who have to represent colour in words, his letter continues:

We determined, therefore, to endeavour to establish an international code by which anyone, anywhere, could convey to anyone else at a distance of time or place exactly and precisely the colour and shade he is speaking of. With this end in view we searched for a good colour chart, and have been successful in finding an excellent one containing 360 colours between white and black, with the name of each in French, German, English, Spanish, and Italian, together with four shades of each of the 360 colours, so that anyone wishing to describe to a friend at Calcutta the exact colour and shade of a flower or a silk or a painting need only refer to the colour chart number, quoting, if for "apricot," e.g., page 53, shade 3; or if for "rosypink," page 118, shade 4; and so on. The cost of production of so beautifully printed and so large a chart was, of course, very heavy, and it was issued at one guinea net, but our society, by adopting it as an international standard, and purchasing a very large number of copies from the publisher, is able to supply it to our Fellows and others at 14s. 6d., or if by post 15s.

Last week we discussed the number of colour shades appreciable by the human eye and recorded Dr. F. W. Edridge-Green's opinion that when the race has become more highly "evolved" that number will be considerably increased. Be this as it may, the time has long gone past since men were content to express their sense of all the hues of nature and art under a dozen or so of names.

The invention of the aniline dyes has added considerably to the shades of colour available for textural purposes, and the artist's colourman, even though he has lost the secrets which imparted an eternal youth to the pictures of Raphael's century, at least can present the modern painter with a range of pigments undreamt of by the great Italian masters. Of the new dyes fashion has been quick to take advantage, and has expended some ingenuity in finding names for the chameleo hues with which, as the seasons change, she decks her votaries. It is hues with which, as the seasons change, she decks her votaries. It is not to be expected that the average masculine mind will accustom itself to such titles as "nattier blue," and it would probably scorn familiarity with "crushed strawberry," "feuille mort" and colour terms of kindred origin, whilst the inconsequence which leads the creative milliner to label a shade of mauve with the name of a popular queen is not only absurd but aggravating. But the need of an accurate colour nomenclature is not limited to the description of frocks and flowers, and medical men must often have wished for a ready method of exactly translating into words some particular tint. Such a chart as we have mentioned might, for instance, be of the utmost service to the descriptive dermatologist. who could convey by its aid an accurate word picture of a given skin lesion to anyone possessing a copy of the chart much more readily than to another. The idea is not entirely new to medicine, as it has been adopted on a limited scale in various devices for the estimation of hæmoglobin, but such special colour charts only represent the shades of red. The chemist may well find the new chart welcome in placing on record such colour reactions as are commonly employed in many branches of his analytical work. When we consider its various utilities we feel that many branches of science owe a debt of gratitude to the Royal Horticultural Society for its energy in seeking to establish a chart of International Colour Reference, the production of which, we may add, is an extraordinary tribute to the perfection of modern printing in colour. The address of the society is Vincent-square, London.

WILLIAM HARVEY'S ASSOCIATIONS WITH BIRMINGHAM. To the Editor of The Lancet.

SIR.—Your readers in the Midlands, who are many, should be interested to know that there is a high probability that the discoverer of the circulation of the blood was on one occasion as near to Birmingham as Aston Hall. For all we know to the contrary, Harvey may have been in the town itself, but it is sufficiently interesting to be assured that as the medical attendant on King Charles I., Harvey must have stayed at Aston Hall on the occasion of the King's visit to Sir Thomas Holte of Aston Hall.

The visit of Charles to his venerable host and most loyal adherent Sir Thomas Holte was in October, 1642, when the Royal army was on the march from Shrewsbury to relieve Banbury Castle, the same month in which was fought the battle of Edgehill. The dates are as follow: Charles slept at Aston Hall on the nights of Oct. 16th and 17th, and fought the battle on Sunday, the 23rd. Now, it is absolutely certain that William Harvey was in close attendance on the King during the whole of that autumn campaign. We have

Harvey's own words to that effect. He wrote: "Whilst in attendance on His Majesty the King during our late troubles and more than civil wars," &c. It is known that Harvey accompanied the King when he left London for Nottingham on August 16th, 1642, and that he was beside the King during the whole of the September, in which month he rode over from Nottingham to Derby to visit his friend Percival Willoughby, who has left a record of their conversation on "uterine honeycomb" (epithelioma). It is also certain that Harvey was present at the batile of Edgehill on Oct. 23rd. The two young Princes, afterwards Charles II. and James II., aged 12 and 10 years respectively, were that day left in his charge, and Aubrey distinctly tells us that as they sat in a ditch on the edge of the hill a "bullet from a great gun" made them "move their station." Harvey is known to have attended to the wounds of the gallant Sir Jervais Scrope. The King was in the battle and Harvey was by his side. Banbury surrendered on the 27th of the month, and on the 29th Charles entered Oxford in triumph. Harvey entered it along with him. Aubrey first met Harvey in Oxford. Harvey remained in Oxford for the best part of the next two years studying problems in development.

Seeing, then, that Harvey was in such close and constant attendance on the King from the middle of August to the end of October, 1642, there is no reason at all for refusing to admit that Harvey was with his Royal Master for the two days and nights which Charles spent at Aston Hall. It is extremely unlikely that so distinguished and indispensable a member of the King's household—one enjoying so intimately as Harrey did the Royal friendship—would be asked to sleep elsewhere than in the house of the King's host. Aston Hall had plenty of accommodation for such a party as the King's retinue in time of If any member of the household was asked to "sleep outside" it would not be the physician-in-ordinary to the King and his personal friend, William Harvey. It may therefore be safely assumed that the immortal discoverer of the circulation of the blood passed two nights in that fine old English mansion so close to us, Aston Hall, then quite a new house, for it had been completed only in 1635. Almost all other houses that he visited, not being new at the time, have perished. The enlightened corporation of the city of Birmingham have preserved Aston Hall, one of "the stately homes of England," from vulgar disfigurement and decay, but they did not probably know that whilst doing this they were preserving, as nearly as possible in its original condition, a building which for at least 48 hours sheltered one of England's greatest sons and the world's greatest discoverers. The very staircases exist which Harvey must have climbed, the same ceilings are there which Harvey must have admired. All such tangible and visible links with the past are interesting, but any existing links with Harvey must be precious to all interested in the history of English I am, Sir, yours faithfully, medicine.

University of Birmingham, Oct. 2nd, 1909.

D. FRASER HARRIS, M.D. Glasg.

DEATH FOLLOWING THE USE OF A "CORN-CURE."

An inquest was held at Shoreham (Sussex) on Oct. 2nd on the body of a retired master mariner, aged 59 years. Of late years he had not enjoyed the best of health and latterly he had been troubled with a soft corn between the middle and fourth toe on the left foot. Without seeking proper advice deceased used a "corn-cure" The trouble increased until medical advice was obtained. Dr. C. R. Wood, who was called in, found a large irritable and inflamed ulcer, while the skin round the base looked as if it had been burnt by some corrosive liquid. The ulcer penetrated into the joint of the toe and inflammation spread to the foot. The toe was amputated, but after the operation the wound showed little tendency to heal, the tendons of the foot became gangrenous, and death supervened. Dr. Wood told the coroner that he had examined the "corn-cure" which the deceased had used, and said it was one of numerous preparations containing salicylic acid which was strongly corrosive, and he thought elderly persons should be warned of its use. The coroner (Mr. F. W. Butler) said it should be brought home to those who had the selling and preparation of these applications that it was most desirable to caution people regarding them. The jury returned a verdict that death was due to acute septicæmia following the application of a corrosive liquid to a soft corn on the foot.

THE WRITINGS OF THE LATE DR. G. M. BEARD.

If any readers of THE LANGET have in their possession, or know of the whereabouts of, any books, pamphlets, manuscripts, or letters written by the late Dr. George Miller Beard, his daughter Miss Grace Alden Beard, of 675, Flabbush Avenue, Brooklyn, New York, would be glad to receive a communication from them. The object of this request is to obtain all possible data preliminary to a republication of some of Dr. Beard's neurological and psychological writings, and to a presentation of certain manuscripts never before printed.

A LONG-LIVED COUNTRYSIDE.

A MEDICAL correspondent has sent us an interesting extract from the Chard and Ilminster News, for the accuracy of which he is able to vouch as he is the professional advisor of all the persons mentioned with the exception of Sarah Morris. He had attended Jacob Trott for some years before his death. The extract is as follows: "Chard has recently lost its oldest resident, Jacob Trott, of Clarke's Row, who was in his 97th year, and could thus remember the battle of Waterloo.

Trott, however, could not claim longest residence in the town, as he was born at Broadway, and had only been in Chard 24 years. He was blind for many years previous to his death. His two sisters, who pre-deceased him, attained the ages of 84 and 80, while a daughter of the old man is in her 73rd year. Trott's remarkable age led us to inquire as to whether there were any other nonogenarians living in the district. Our quest was not in vain, for we find that at Tatworth there is a Sarah Morris, aged 93; in High-street, Chard, Eliza Tucker, 90; at Winsham, Saml. Spurdle, 91; at Purtington, Uriah Samways, 90, who still continues his occupation as a shepherd; and at Bath-lane, Chard, Mary Batten, 90, who is still quite proficient with her needle. The combined ages of these five persons thus aggregate 454 years, which, if not constituting a record, must run very close.'

A CUSTOMS PROBLEM.

OUR Australian correspondent writes that the Victorian Customs officials were recently puzzled under what heading to class an importation of sun-dried lizards which a wealthy Chinese citizen had made for the purpose of using as a drug. The lizards are ground into powder and believed to possess much medicinal virtue. Eventually it was decided that the lizards should be classed "unenumerated" and admitted duty free. The incident calls to mind Mr. Punch's joke of the maiden lady, travelling with a domestic menagerie, and being told by the porter, from whom she has inquired as to the tickets necessary for her pets, that the tortoise was an insect.

A SHEET ALMANAC FOR THE UNIVERSITY OF LONDON.

A SHEET almanac has been instituted for the University of London, and it is proposed to continue the publication annually. The upper half of the almanac consists of a beautiful drawing of the University buildings, executed by Mr. W. Monk, the cost of the drawing having been defrayed by the Chancellor. A certain number of prints of the drawing have been made upon Japanese paper and will be sold apart from the almanac. The price of the almanac will be 2s. 6d., and the special prints will be sold at 5s. Application should be made to the University or to the following booksellers—Messrs. A. and F. Denny, 147, Strand, W.C., and Mr. H. K. Lewis, 136, Gowerstreet, W.C.

W. W. S. (Munich).-Delusions associated with the human excretions are by no means confined to malarial insanities. Such cases as our correspondent describes are familiar to any person acquainted with mental disease. They are perhaps explained to some extent by the loss of the higher cerebral powers of inhibition, which is characteristic

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Beek.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

TUESDAY.

SURGICAL SECTION (Hon. Secretaries—Walter G. Spencer, Jonathan Hutchinson): at 5.30 P.M.

Paper:
Mr. Rickman J. Godlee: Prognosis in some Inflammatory
Diseases of the Lungs and Pleura commonly treated
Surgically.

THURSDAY.

Obstetrical and Gynæcological Section (Hon. Secretaries-William J. Gow, W. Rivers Pollock): at 7.45 p.m.

Presidential Address:
Dr. H. Macnaughton-Jones.

Dr. J. M. Munro Kerr: A Case of Placenta Prævia in which it was deemed advisable to perform Cæsarean Section.
Dr. J. Curtis Webb: Points on the Use of, and Indications for, Electro-therapy in some Gynecological Affections.

FRIDAY.

ELECTRO-THERAPEUTICAL SECTION (Hon. Secretaries—Reginald Morton, G. Harrison Orton): at 8.30 p.m.

Presidential Address:
Dr. Samuel Sloan: Electro-therapeutics in Gynæcology.

N.B.—Fellows of the Society are entitled to attend and to speak at all Meetings.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-

MONDAY.—8 P.M., General Meeting. 8.30 P.M., In-coming President's Address.—Mr. H. Lett: Two Cases of Perforation of the Small Intestine.

UNITED SERVICES MEDICAL SOCIETY, Royal Army Medical College, Millbank, S.W.

WEDNESDAY.—8.30 P.M., Lieut.-Colonel P. J. Freyer, I.M.S. (R.):
Total Enucleation of the Prostate; Practical Observations on
the Operation.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-

street, Cavendish-square, W.

FRIDAY.—8.30 P.M., Discussion on Recent Advances in our Know-ledge of Sleeping Sickness.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn

FRIDAY.—5 P.M., Prof. Keith: Specimens illustrating Various Forms of Constrictions and Occlusions Found in the Course of the Alimentary Canal. (Museum Demonstration.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22,

IEDICAL GRADUATES
Chenies-street, W.C.
Monday.—4 P.M., Dr. S. E. Dore: Clinique (Skin). 5.15 P.M.,
Lecture:—Dr. H. Campbell: Treatment of Neuralgia.
TUESDAY.—4 P.M., Dr. E. Wynter: Clinique (Medical). 5.15 P.M.,
Lecture:—Dr. E. C. Hort: Rational Immunisation from a Practical Standpoint.
Wynter Clinique (Surgical). 5.15 P.M.,
Wynter Clinique (Surgical). 5.15 P.M.,

Practical Standpoint.
WEDNESDAY.—4 P.M., Mr. T. Walker: Clinique (Surgical). 5.15 P.M.,
Lecture:—Dr. G. H. Savage: Moral Insanity.
THURSDAY.—4 P.M., Sir Jonathan Hutchinson: Clinique (Surgical).
5.15 P.M., Lecture:—Mr. L. Mummery: The Diagnosis and
Treatment of the More Serious Forms of Colitis.
FRIDAY.—4 P.M., Mr. W. Stuart-Low: Clinique (Ear, Nose, and
Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-

oad, W.

MONDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 p.m., Operations. 5 p.m., Opening Lecture:—Prof. T. Schott: A Renewed Research on the subject of Acute Overstraining of the Heart.

TUESDAY.—10 A.M., Dr. Moullin: Gynrecological Operations. 12.15 p.m., Lecture:—Dr. Pritchard: Practical Medicine. 2 p.m., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 p.m., Operations. Dr. Abraham: Diseases of the Skin. 5 p.m., Lecture:—Dr. R. Jones: Symptomatology of Mental Diseases.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 p.m., Lecture:—Dr. G. Stewart: Practical Medicine. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. B. Harman: Diseases of the Byes. 2.30 p.m., Operations. Dr. D. Robinson: Diseases of Women. 5 p.m., Lecture:—Dr. R. Morton: X Ray Examination of the Thorax.

Thursday.—10 a.m., Lecture:—Surgical Registrar: Demonstration

THURSDAY.—10 a.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Pathological Demonstration:—Dr. Bernstein. 2 p.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 p.M., Operations. 5 p.M., Lecture:—Mr. Ll. Williams: Dental and Oral Conditions Influencing the General Health.

ENDAY.—10 a.M. Dr. Moulling. Gypersclopical Operations. 2 p.M.

Influencing the General Realth.

FRIDAY.—10 A.M., Dr. Moullin: Gynacological Operations. 2 P.M.,
Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of
the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham:
Diseases of the Skin. 5 P.M., Lecture:—Mr. Etherington-Smith:

SATURDAY.-10 A.M., Dr. Saunders: Diseases of Children. Harman: Diseases of the Eyes. Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. 2.30 P.M., Operations. Dr. D. Robinson: Diseases of Women.

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Monday.—2 P.M., Operations. 2.15 P.M., Sir Dyce Duckworth: Medicine. 3.15 P.M., Mr. Turner: Surgery. 4 P.M., Mr. R. Lake: Bar and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 2.15 P.M., Special Lecture:—Sir Dyce Duckworth: Gouty Phlebitis.

TUENDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wellis: Medicine. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. Thursday.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.35 P.M., Mr. Cargill: Ophthalmology. Out-patient Genes Sir P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 3.15 P.M., Sir W. Bennett: Cramp.

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TUFSDAY.—Clinic: 10 a.m., Medical Out-patient (Dr. A. G. Auld). 2.30 p.m., Operations. Clinics:—Surgical (Mr. W. Edmunds); Gynæcological (Dr. A. E. Giles). 4.30 p.m., Lecture:—Dr. R. M. Leslie: The Incidence of Age in Disease.

WEDNESDAY.—Clinics:—2.30 p.m., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 p.m., X Rays (Dr. H. Pirie).

THURSDAY.—2.30 p.m., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 p.m., Medical In-patient (Dr. G. P. Chappel). 4.30 p.m., Lecture:—Mr. W. Edmunds: Surgery of the Blood Vessels.

FRIDAY.—10 a.m., Clinic:—Surgical Out-patient (Mr. H. Evans).

Vessels.
FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. H. Evans).
2.30 P.M., Operations, Clinics:—Medical Out-patient (Dr. A. G. Auld); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

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FRIDAY.—3.30 P.M., Clinical Lecture ;—Disseminated Scierosis.

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WEDNESDAY.—3 P.M., Clinical Demonstration:—Dr. F. Palmer.
THUESDAY.—3 P.M., Clinical Demonstration:—Dr. T. D. Savill.
FEIDAY.—2 P.M., Clinical Demonstration:—Dr. P. Stewart. 5.30 P.M.,
Clinical Demonstration:—Dr. P. Stewart. 5.30 P.M.,

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8.30 P.M., Dr. S. Martin: Certain Infective Processes in the Intestine; their Results and Treatment.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 7th, 1909.

Dat	e.	Barometer reduced to Sea Level and 32° F.	Direc- tion of Wind.	Rain- fail.	Solar Radio in Vacuo.	Maxi- mum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Oct.	1	29.93	s.	0.06	82	64	52	57	58	Overcast
	Ž	29.78	S.W.		77	63	55	55	55	Hazy
**	3	29.84	S.	0.05	74	66	55	59	60	Raining
**	4	29.75	s.w.	0.07	101	67	60	59	62	Cloudy
**	5	29.45	S.W.	0 07	100	66	59	57	60	Cloudy
"	6	29.84	š.w.	0.13	100	62	46	46	48	Fine
**	7	29 93	S.		98	60	48	52	55	Fine
		25 50	5.	•••	30				00	

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THE RELATION OF MEDICINE TO THE ANCILLARY SCIENCES.

Delivered before the Medical Society of London on Oct. 11th, 1909.

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GENTLEMEN,—To be called upon to preside over a society so old and honourable as the Medical Society of London is a distinction I greatly prize. I am proud to think that my name will be inscribed on the walls of the room in the long list of eminent men who have occupied this chair. I trust that I shall be equal to the responsibilities you have placed upon my shoulders and that with your cooperation during my year of office the traditions of the society will be worthily maintained.

It is the custom for the new President to deliver an address before proceeding with the business of the session and I shall follow the custom by expressing a few thoughts which have come into my mind.

I have drawn up a synoptical table which is intended to show the Relation of Medicine to the Ancillary Sciences. Incidentally it represents also the medical curriculum of the present day and upon this aspect of it I will make a few observations before passing to other matters. Such a synopsis shows what a highly specialised product the modern doctor is. After reaching a certain standard of school education the student commences his professional curriculum with chemistry, physics, and general biology. He then begins his more technical work—the biology of man with normal anatomy and physiology. This completes the first part of his professional work. From the normal he passes to morbid anatomy and morbid physiology, which together form the subject of pathology. From the laboratories he now goes to the wards where he is to study the diagnosis, natural history, and prognosis of disease. This done, he should be ready for the study of the means of prevention and cure of disease. What a long and varied training!

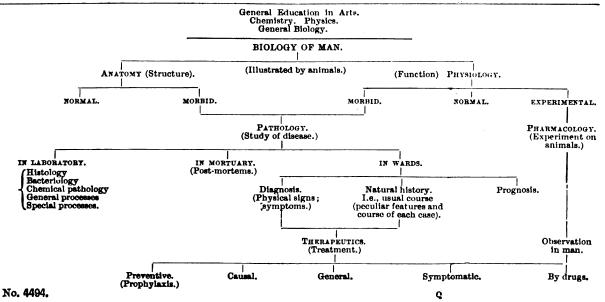
How can all this work be compressed within the five short years of student life? Only it is clear by so arranging and mapping out the time that the student may not waste a moment, for he has not one to spare. His whole time is

to another, as he is directed by his teachers, with hardly time to think, and certainly without leisure to digest and properly assimilate what he has been taught. Even then five years is all too short and many students require longer even for the pass examination.

With such a hurry-scurry, with so much to do and so little time to do it in, the medical teaching of the present day is, and must be, an organised system of cramming. Cramming is not education. It strains the memory and does not stimulate the power of thinking. Real education is a process of growth and development for which time is essential. Any system of education must be bad in principle which does not recognise this fact and which demands more than can be really acquired in the time given. Hurried growth is unsound growth. To cram is not to learn. Stuffing may make Strasburg geese: pâté de foie gras has a commercial value, but a fatty liver is a disease even in a goose. To be always fed with predigested pap injures the vigour of any animal. The medical student of to-day is largely spoon-fed. If he remembered all he had been stuffed with he would be a monstrosity fit only for a museum. If it were not for his natural robustness of body and mind, his general common sense, his hard work, and the splendid powers of forgetting, which he shares with other men, the curriculum would ruin his mental constitution.

After all, the end and aim of all this work is to make the student a practical doctor, an object which too often seems to be lost sight of in the controversies of rival educationalists. So much time is spent in preparing the student to be a doctor that there is little or none left to make him one. In other words, so much time is spent upon preliminaries that the practical clinical work is scamped. The result must be a less finished and complete article than such a curriculum would seem to promise. As an examiner in different licensing bodies now for many years I have come to the conclusion, which I regret but think it my duty to state, that the general standard of clinical knowledge in the final examinations has been steadily and progressively falling. It is only after the student has added to all his preparatory work some clinical experience that the result of all this preparation becomes manifest. If each student could add to his curriculum a year of residence in a hospital as a house officer, without any examination to work for, he would obtain what is lacking. Where the student is so circumstanced that this is possible a good article is produced, better than has been produced hitherto, for there is no doubt that the general standard of efficiency among medical men in practice has risen greatly of recent years. But all cannot have the advantage of hospital experience of this kind, even if they can afford the time and money. Instead of gaining practical experience in spent in rushing from one subject to another, from one place the wards while they are students, when mistakes do no

Synoptical Table, showing the Relation of the Ancillary Sciences to Medicine.



harm and can be corrected, they have to learn it later in practice where mistakes are serious to themselves and to

their patients.

What, then, is the remedy? Obviously to cut down the curriculum until the work required is not more than can be accomplished by the average man in the time allotted to it. Each preliminary subject must be pruned, and all that is not essential ruthlessly cut out. I am glad to think that the most experienced teachers are of this opinion, so that there is some hope of a satisfactory solution being reached at last. The present muddle, for a muddle it is, has largely arisen from the want of that control which medicine should exercise over the whole curriculum, preparatory as well as professional. The object is to make a man a doctor, and the doctors themselves are the best judges of what is necessary for that purpose. At present the teachers in each preliminary subject have been allowed to prescribe what they consider necessary for an elementary knowledge of the subject; each has added a little to the mass until the total burden is too great for any but the strongest shoulders to carry. The burden must be lightened. The work in each part must be strictly defined. This is the use of a syllabus, not so much as a guide to the student, but as an indication to the teacher and a check upon the examiner. The relative value of the different parts of the work must be defined. The perspective of the medical curriculum has been lost. It can only be regained by medicine resuming the control over the whole medical curriculum, preparatory as well as professional. This control it has in theory, but not in practice. The time has now come when in the interests of medicine and of the students that control must be resumed and effectively

My object in drawing out this synoptical table, however, was not to hold a tirade against the present system of medical education. It was quite a different one. I wished to show the position which medicine holds in relation to the ancillary sciences, and which in the face of the aggressive enthusiasm of some of the younger specialties is liable to be lost sight of.

Medicine, as the table shows, consists of Pathology, or the Science of disease, and of Therapeutics, or the Treatment of disease.

Pathology may be studied in the laboratory by the pathologist, so-called, or in the wards by the physician or clinician. Their objects are the same. They each investigate the problems of disease; their difference is not one of subject or of method, but only of place of study. The pathologist has the advantage that he can determine beforehand the investigation he wishes to make, can invent his own experiments, which he can perform at his own time and in his own way—chiefly, of course, upon animals and in his laboratory. The clinician studies morbid man and not animals, cannot select his own experiments, but must take them as they come and when they come, and the clinician's workshop is the ward. Clinical investigation in the wards is as much a science as pathological investigation in the laboratory. The same faculties are required in both pathologist and clinician, the same care and skill in observation, the same scientific use of the reason and imagination to create his theories, and the same judgment in putting his theories to the test. Each is the necessary complement of the other. The theories of the clinician must be taken to the pathological laboratory and worked out there, while the theories of the pathologist, so far as based upon the observations upon animals, cannot be accepted as applying to man till they have been tested and checked in the wards. Medical science is not confined within the walls of the laboratory.

To assume an antagonism, which, if it exists, exists only in the mind and attitude of rival practitioners, and not in the nature of things, can only retard science by exciting jealousy, where there should at the most be nothing more than friendly rivalry. The problems of medicine can no more be worked out in the laboratory alone than they can in the wards alone. It is only by the closest coöperation between the pathologist in his laboratory and the clinician in his wards that the complicated problems of medicine can be solved. Each looks at the subject from a somewhat different point of view and sees it therefore in new lights, and every new aspect of a problem suggests new methods of dealing with its solution.

Clinical medicine and pathology, then, are but two departments of the same science and are the complement the one of the other. For a right understanding of medicine it must

be studied in both places alike, and the clinician is as necessary as the pathologist.

The relation of medicine to normal physiology is equally close. Physiology is the child of medicine, for it was the study of the morbid that showed the necessity of a knowledge of the normal. Now for the convenience of education the study of the normal rightly precedes that of the morbid—so it comes that medicine is sometimes regarded as applied physiology—but it is of course far more than this. Much as medicine receives from physiology, it amply repays the debt it owes by testing and confirming the statements of physiology, and by suggesting and carrying out new lines of research and investigation. I do not propose to refer to the gifts of physiology to medicine, but rather to speak of some of the contributions of clinical medicine to physiology.

I suppose no physiologist would dispute the debt that physiology owes to clinical medicine in the investigation of the functions of the nervous system. The localisation of function in the brain was largely based upon the observations of clinical observers, among whom Hughlings Jackson, a former President of this society, holds the place of honour. Confirmed and extended in the laboratory, the conclusions he drew from observation in the wards form the basis of our present knowledge.

A great deal of our knowledge, too, of the functions of the spinal cord is due to the patient observation of clinical facts and their association with results of post-mortem examination. Though laboratory experiments have done so much to confirm this work, still they are coarse and clumsy compared with those experiments which Nature performs in disease.

Clinical observations led Hughlings Jackson some years ago to a theory of the respiratory mechanism which, though correct as I take it to be, has not yet found its way, I believe, into the physiological text-books. It is this, that in the nervous mechanism of respiration there is a voluntary or cerebral innervation as well as an automatic spinal centre, and that these are to a great extent independent of one another. The clinical facts upon which this theory rests are that in hemiplegia while the automatic or ordinary movements of respiration remain equal on the two sides, or may be possibly even exaggerated on the paralysed side, the voluntary movements of the paralysed side are markedly impaired. 1

The function of the thyroid gland was little understood until the discovery of myxædema as a disease, and its association with the thyroid gland determined. The cure of this condition by the administration of thyroid extract not only showed the importance of the thyroid gland to the body, but threw a new light on the whole question of internal secretion.

The study of Addison's disease, again, has shown one at any rate of the functions of the suprarenal gland, though treatment by suprarenal extract has proved disappointing.

The function of the pituitary body was, and I suppose still is, unknown, but the association of acromegaly with disease of it has given fresh interest to its study.

These are surprising and unexpected associations, and they act as a warning against the assumption that those parts of the body the use of which is not at the time known are of no use at all and form fit material for the surgeon's knife. Who can say that the indiscriminate removal of tonsils, adenoids, and appendices may not produce unexpected and undesirable results? Modern surgery, which makes operation so simple and safe, may bring new and unsuspected dangers with it.

The cachexia which develops in the later stages of granular kidney has a suggestive likeness to the cachexia of Addison's disease and raises the question whether the kidney too may not have an internal secretion. This question is still subjudice. My own clinical experience leads me to the opinion that the kidney has such an internal secretion and that it is to the failure of this that the renal cachexia is due. Although the administration of renal extract often fails in the advanced cases of granular kidney in which it is used, still the failure does not prove that it would not be useful if administered in earlier stages of the disease. I have had some very striking instances of unexpected improvement under its use. The most remarkable occurred in a very long-standing and apparently hopeless case of chronic parenchymatous nephritis. The renal extract, however, must be freshly made, for there is no preparation of it which will keep.

What a stimulus has the clinical significance of glycosuria given the study of carbohydrate metabolism!

In the physiology of the blood the recent additions to our knowledge come almost entirely from clinical sources. malaria and kindred affections we seem now to be wandering in a wonderland where the waving of the fairy wand of science banishes the demon of disease and converts a charnelhouse into a paradise.

A new field of physiological research has been opened out in respect of the heart by the recent study of the bundle of His and the clinical observations upon the phenomena included under the term "heart-block."

But even among the common things of the heart there are some which, clinical observation suggests, require reconsideration.

To take, for example, the sounds of the heart. We are taught that the second sound of the heart is due to the closure of the aortic and pulmonary valves, and that the second sound at the apex is merely the second sound at the base transmitted to the apex. If this were the whole truth there ought to be a definite and constant relation between the intensity of the second sound at the base and that at the apex. But clinical observation shows that this is not the case, for the second sound may be loud at the base and absent at the apex or be heard loudly at the apex and be feeble or even absent at the base, so that there is no constant relation between them. In mitral stenosis the second sound is often completely absent at the apex and yet audible distinctly at the aortic base and loudly accentuated at the pulmonary base. Clinical observation thus leads to the conclusion that the cause of the second sound is not the same at the apex as at the base. Inasmuch as the chief effect of mitral stenosis is to prevent the blood passing readily into the ventricle from the auricle, so that it can only trickle through instead of running, as it does in a healthy heart, in a free and unimpeded stream, we may suppose that it is the impact of the blood upon the wall of the ventricle as it passes from the distended auricle at the commencement of the ventricular diastole which produces the second sound at the apex in health. Whether this explanation be satisfactory or not it is the only one I can think of. Some explanation is required, and the question is obviously of great physiological importance.

The length or duration of the heart sounds is another question of importance in clinical medicine, for upon it depends a right understanding of cardiac murmurs. The second sound is short but the first is long. To hear the heart-sounds as clearly as we do there must obviously be distinct intervals of some duration between them. These intervals may be occupied by an abnormal noise which is called a murmur. Yet murmurs are often described as replacing the heart sounds. In the case of the second sound diastolic murmurs always do more than this, for they last much longer, even it may be throughout the whole diastolic period. The question, then, of the length of the heart sounds is only of real importance in relation to the first sound. The difference of teaching is shown by the different diagrams given of the first sound. It is often represented as if extending through the whole of the systolic period, yet clinical observation shows that it does not really extend more than half way, for there are many cases at the bedside in which the sounds appear perfectly normal to the ear and yet there is in addition a systolic murmur equal in duration to that of the first sound. If the first sound lasted through the whole of systole no definite distinction could be drawn between an altered heart-sound and a murmur, as must be done if a correct diagnosis of cardiac lesions is to be made. This difference of opinion will, I suppose, continue till some means is found by which the heart sounds can be measured and made to record graphically their own duration. The only observations I know which bear on this point are those of Einthoven and Geluk.² Their results support my views.

Another piece of physiological teaching which I cannot reconcile with clinical observation is that of the sphincter action of the cardiac muscle at the mitral and tricuspid orifices. According to this theory the mitral and tricuspid valves are not competent to close the orifice unless they be first contracted by the sphincter action of the heart muscle. A priori it would seem incredible that so important an organ as the heart should have such a narrow margin of reserve that mere muscular weakness should render the pump ineffective. A priori reasoning is risky. In my mind the question is settled by the following considerations: (1) That In my mind the

if the valves were incompetent a regurgitant murmur would be the result; (2) that with organic disease which leads to regurgitation the murmurs are propagated in definite directions; and (3) that the murmurs are not so propagated in the great majority of cases when they are associated with simple cardiac weakness. If the murmurs constantly vary in so marked a way the cause of them can hardly be the same. So this sphincter-action requires reconsideration and the experiments upon which the theory rests call for repetition.

The last question I would raise in connexion with the heart is the problem of its nutrition. We are taught that this depends upon the coronary arteries alone. We were once told that the coronary arteries did not anastomose and that each was independent. But as I showed many years ago, the anastomosis is extremely free and nothing is easier with proper care than to inject nearly the whole heart from either

The question I would now raise is whether in fact the coronary arteries are indeed the only source of blood-supply to the heart. My doubts rest upon the fact that the mouths of the coronary arteries are often greatly constricted by atheroma without the heart suffering much in power. I have even seen the mouth of one coronary artery completely obliterated and the other so small that the finest probe could only be introduced with difficulty into it. It was quite impossible that the blood-supply of that heart could have been obtained through those obliterated coronary arteries at all. It is difficult to see what other source of supply there can be in such cases unless there be vasa propria cordis opening directly from the cavities of the heart itself.

I mention these points in connexion with the heart as examples of subjects of research suggested simply by clinical observation. I do not propose to pursue this subject further, but I think it will be accepted that there is no organ in the body upon the pure physiology of which clinical observation cannot throw, even if it has not already thrown, much light. So that clinical medicine is the partner, and no sleeping partner either, of pure physiology as it is of pathology.

I turn now to pharmacology and its relation to medicine. Pharmacology is a special branch of experimental physiology and deals with the physiological action of drugs or remedies. Many of the remedies selected for investigation are those which have been found of use at the bedside. Many new remedies have come from the pharmacological laboratory to the wards, and their number is rapidly increasing under the stimulus of the theory that chemical constitution is a guide to physiological action. The action of remedies upon healthy animals in the laboratory is no proof that they will have similar action upon sick men. The results of pharmacological experiments must therefore be tested in the wards before they can be accepted for use in medicine.

To call treatment based on laboratory experiment rational and scientific and that based on bedside experience empirical implies a difference which does not exist, and would seem to suggest that clinical observation is neither rational nor scientific. Yet the same care and skill in observation are required in either case and the difficulties to be surmounted are much greater in the wards than they are in the laboratory. According to this view, if a remedy were found to do good in the treatment of disease its use would be rational if a physiological explanation could be given, and it would remain under the stigma of empiricism if no physiclogical reason could be given, even if, as has sometimes happened, the physiological reason assigned has proved ultimately to be wrong. Yet whether the physiological explanation of its action can be given or not, it would seem to be the height of unreason to refuse to use a remedy of proved clinical value because its action could not be explained.

So, again, the treatment of symptoms is often disparaged as essentially unscientific, yet surely if you cannot cure the disease but can relieve its symptoms it would be irrational not to do so, though the reason of the relief given were not known. Symptoms are disorders of function produced by A particular symptom, for example, might be due to the action of some chemical substance produced by the disease, and if this substance could be neutralised or decomposed the symptom would disappear. If it could be shown that this was actually what occurred, the discovery would be

^{*} Archiv für Gesammte Physiologie, 1904, vol. lvii., p. 607.

regarded as of the highest scientific value. A fact is a fact whether it can be explained or not, and there are many such facts in symptomatic treatment. That the explanation is not forthcoming is not due to the want of science in the clinical observer, who is busy collecting such facts, but to the backward condition of physiological knowledge. The terms "rational" and "empirical" should therefore be dropped as suggesting undue assumption and unworthy disparagement.

In pharmacology as in physiology the work in the wards is the necessary complement of the laboratory. The clinician may suggest problems for the pharmacologist to tackle, the pharmacologist may supply new remedies for the clinician to try—loyal cooperation on equal terms between each is

necessary for the progress of science.

Recently the bacteriologist has entered the domain of therapeutics with antitoxic sera and vaccines. Prepared as these remedies must be in special laboratories, it is only in the wards that their true value can be determined. The results are sometimes striking, but often, alas, the promises of the laboratory fail to be realised in the wards. On this subject I would raise a question—Whether the prolonged administration of these remedies over weeks and months may not produce serious effects upon the general health. I have myself observed a few cases in which a profound cachexia developed from which the patient died. The result was attributed to the disease and perhaps rightly. Yet I could not help feeling some doubt whether it was not, in part at least, the result of the prolonged use of the remedy. I have made inquiries of some practitioners of experience and find that there is an impression among them also that it may be so. I know that it is stated that these remedies do no harm and may be used indefinitely with advantage. It would be strange if remedies so powerful for good were incapable of doing harm. At any rate, the question deserves consideration.

The conclusion of the matter seems to be that it would be unwise to let the enthusiastic physiologist, bacteriologist, or pharmacologist run loose in the wards without the advice and controlling influence of the clinician, and that it would

be risky both to science and to the patient.

The proper position of each of the ancillary sciences is side by side with medicine. They must all work loyally together in a common search after truth. But if one must be pre-eminent it is surely medicine, which has the right to pre-eminence as the parent of them all. To speak of the clinician or physician as obsolete, effete, or an anachronism, is midsummer madness. The clinician is as necessary to the progress of medical science in the present day as the bacteriologist, physiologist, or pharmacologist. Indeed, there never was a time, I believe, when the mature experience and cool judgment of the practised clinician was more necessary than now, to put brilliant but crude theories to the test, and in general to counteract the separatist tendencies of modern specialism.

INCORPORATED INSTITUTE OF HYGIENE.—A COURSE of popular lectures (with practical demonstrations) on food and dietetics, cooking, home hygiene, and home nursing will be delivered in the lecture hall of the Institute of Hygiene, 34, Devonshire-street, Harley-street, W., during the coming nine months. They will comprise the following subjects: Food and Dietetics, by Dr. G. Norman Meachen, commencing on Oct. 5th; Cooking (with practical demonstrations), by Mrs. C. L. Wilson, L.L.A., commencing on Oct. 12th; Home Hygiene, by Dr. Lilian M. Chesney, commencing on Oct. 19th; and Home Nursing (with practical demonstrations), by Miss Isabel Macdonald, commencing on Oct. 26th

Tuberculosis in the Black Country.—The South Staffordshire Joint Small-Pox Hospital Board is considering a scheme for the utilisation of its small-pox hospital as a sanatorium. During the four years the hospital has existed no patient has been treated there. In the board's area there are about 1000 consumptives, with 300 deaths annually. Dr. G. Reid and Dr. W. McE. Clendinnen showed by their estimates that by charging 30s. per patient per week the board would effect a saving of £244 annually from the point of view of small-pox hospital maintenance. One-third of the cost would be provided by the board and two-thirds by those who made use of the institution as a sanatorium. A committee has been appointed to consider the scheme.

Introductory Address

Delivered at the Opening of the Winter Session at the University of Liverpool School of Medicine on Oct. 5th, 1909,

By CHARLES A. BALLANCE, M.V.O., M.S. LOND., F.R.C.S. Eng., SUBGEON TO ST. THOMAS'S HOSPITAL, ETC.

LADIES AND GENTLEMEN,—I esteem it a high privilege to have been invited by the Medical Faculty of the young but already famous University of Liverpool to give the introductory address at the opening of this session. Our island country owes much to the enterprise, the energy, and the courage of the inhabitants of this city. No one of us can sail the estuary of the river Mersey without a feeling of legitimate pride.

"That stream which fretted by a thousand prows, No rest, no liquid slumber knows, Whate'er the hour, whatever winds prevail, Behold the outward and the homeward sail."

And stealing silently into our minds, for as a race we tend to conceal our thoughts, come the words civis Britannious sum. To the ignorant it might appear that

"Your mind is tossing on the ocean,"

and that you employ your leisure

"Plucking the grass, to know where sits the wind,"

"For there is a magnet-like attraction in These waters, to th' imaginative power, That links the viewless with the visible, And pictures things unseen. To realms beyond The highway of the world my fancy flies, When, by her tall and triple mast, we know Some noble voyager, that has to woo The trade winds, and to stem th' ecliptic surge."

Though this city is famed for its shipping and its commerce, it is also famous by reason of the literary and intellectual eminence attained by many of its citizens. I will mention only three of them: Mr. Gladstone, Mrs. Hemans, and Ian Maclaren. This is not the proper occasion to speak of Mr. Gladstone's amazing intellect, his illustrious career, and the influence of his personality on the higher ideals of life and conduct; but there is one thing about Mr. Gladstone which, whatever our political views may be, must appeal to the heart of every Briton. He devoted the whole of his life, all the eminent qualities of his mind, and all his physical strength to the rough island story of the land in which we live and which we so much love. The next name is that of Mrs. Hemans. Who, as a child, has not felt a tingling of the blood when reciting the poem descriptive of the steadfastness and heroism of the young boy Casabianca? Who has not been moved by the melody and sweetness of the lines of "The Better Land"? Who of us can now read "The Homes of England" without some feeling of uneasiness and alarm?

"By a divine instinct men's minds mistrust
Rusuing dangers, as by proof we see
The waters swell before a boisterous storm,"

All forbodes peace, yet we live, as a great imperial orator recently said, in an age in which the nations of Europe are engaged in silent warfare, hardly less exhausting and dangerous than open war. This "tacens bellum" may pass at any moment by sudden attack into a struggle for our very existence. England may say with the Psalmist, "I labour for peace, but when I speak unto them thereof, they make them ready to battle." Has not the time come "that some personal duty and responsibility for national defence rests on every man and citizen?"

"The stately homes of England,
How beautiful they stand,
Amidst their tall ancestral trees,
O'er all the pleasant land!

The cottage homes of England!
By thousands on her plains,
They are smiling o'er the silvery brooks,
And round the hamlet fanes.
Through glowing orchards forth they peep,
Each from its nook of leaves;
And fearless there the lowly sleep,
As the bird beneath their eaves.

Breathes there the man, with soul so dead, Who never to himself has said, This is my own, my native land!

Oh! where's the coward that would not dare To fight for such a land."

I may detach a passage from Ruskin's lecture on War and y that national defence in Britain at the present time may fitly be described in the words, "Brave men fighting and her cowards thinking." Truly the thoughts of England need good captains' leading now, if ever! Unless Britain awakes from her long sleep, "Ashes to ashes" may be her epitaph, and the beautiful verses of Mrs. Hemans may remain as but a memory of the past, lost beyond recall:-

"When the lamp is shattered,
The light in the dust lies dead;
When the cloud is scattered,
The rainbow's glory is shed."

No, it shall not be-

"Nought shall make us rue, So England to herself do rest but true.

The free fair homes of England! The free fair homes of Bigland!
Long, long in hut and hall,
May hearts of native proof be reared
To guard each hallowed wall!
And green for ever be the groves,
And bright the flowery sod,
Where first the child's glad spirit loves,
Its country and its God!"

The "Name of England," the title of another poem by Mrs. Hemans

A thousand ancient mountains Its pealing note has stirred, Sound on, and on, for evermore, O thou victorious word!

England! what thou wert, thou art! Gird thee with thine ancient might, Forth! and God defend the Right!"

This University had its origin in the wisdom, the forethought, and the enterprise of the citizens of this city. The work already done in it gives assurance of the greatness of its future. A University does not consist alone of the stone and the bricks and mortar of which its laboratories and lecture rooms are constructed, important as these, in a sense, When I was in America I was introduced to Mr. Roosevelt. I opened the conversation by expressing my admiration of the new marble buildings of the Harvard University at Boston on which 5,000,000 dollars had been expended. He replied: "Yes, they are very fine, but, in the case of Universities in general, how much better it would be to spend the money, not first on buildings, but first in the endeavour to induce the wisest and greatest men of the world in the various branches of knowledge to come and fill the professorial chairs."

The real vitalising and energising element, the germinal plasm of the University, is its band of living workers. The individual members of the University pass away, but the body-corporate is endowed with continuous life, but with a life of ever-changing form. This organic body grows from year to year in strength and in knowledge. The knowledge gained by the toil of one generation soon becomes the commonplace of the next. The world moves on in a succession of dreams and their fulfilment, and the wild imaginings of one age become the splendid realities of the next.

"Yet all experience is an arch where thro'
Gleams that untravell'd world, whose margin fades
For ever and for ever when I move."

There is no halt in the beneficent activity of the living workers of the University to increase the sum of human knowledge, and in the medical faculty no rest in the effort to relieve human suffering and to cure disease. The tide in the progression of nature moves with undeviating purpose from incompleteness to completeness, from imperfection to perfection. The further evolution must go on. The succession cannot break. The day of greater knowledge will arrive when the then living workers of your medical faculty willibe able perfectly to control those dread diseases which still confront and baffle us.

The extraordinary evolution and advance of physiology, pathology, medicine, and surgery, since the time when I became a student can only be dimly realised by those who have but lately joined the profession. When I entered the profession the obstacles to the study of human anatomy had been removed, and clinical observation combined with postmortem study had greatly increased our knowledge of disease. The work of the experimental school of Pasteur and Lister had but commenced to influence practice. The surgeons made a point of operating in the oldest of coats bespattered system mainly rests. Without these experimental researches with blood and pus from many a field-day. Intestinal and

gastro-intestinal anastomosis were unknown. The reduction of intussusception was attempted by means of the kitchen bellows. The operations for brain tumour and brain abscess were unknown. No operations were performed on the heart and spleen. Patients with renal or biliary calculi, and with appendicitis or peritonitis, were left to their fate.

Much of what is now current surgical practice was when I was a student considered too hazardous to attempt or was altogether unknown. In one well-known text-book the opinion was expressed that the limit of the surgeon's art had been reached. You, on the other hand, who are about to enter the profession will have unfolded to your view quite another picture. You will find ready to hand a precise and well-proved surgical technique, beautiful aseptic operation rooms, well-equipped laboratories for research, instruments of precision, and elaborate laboratory methods of diagnosis and treatment. You will see an endless succession of major and minor operations, which concern every part and every organ of the human body, being performed successfully day by day. You will witness, and I hope will soon take part in, a constant struggle to improve our operation methods, and a continuous effort by the aid of experiment to attain "things unattempted yet" in surgical practice. Sepsis, diphtheria, typhoid fever, yellow fever, carcinoma following x ray dermatitis, and other diseases take their toll among the heroic workers who are pushing forward in the front rank of the advance of medicine and surgery. The greatest responsibility is demanded of our profession and the highest death-Yet you will find the great doctors of the past, of this age, and of all the coming years "endued with comprehension and a steadfast will to look one step forwards and to secure that step. Adventuring for man's sake, apart from all reward, they seem to long at once to save mankind, to make some unexampled sacrifice in their behalf, to wring some wondrous good from heaven or earth for them, or perish, winning eternal weal in the act."

In pathology and medicine the progress too has been equally extraordinary and remarkable, especially in our knowledge of the intimate pathology of the infectious diseases and of natural and acquired immunity. To me it is an historical fact that I joined in 1884 the first class in bacteriology ever formed in the ancient University of Leipsic. During my medical life the organisms of anthrax, erysipelas, pneumonia, puerperal fever, tubercle, Malta fever, syphilis, cholera, tetanus, small-pox, diphtheria, acute rheumatism, and plague have been identified; and the successful attainment of immunity against diphtheria, typhoid fever, snake venom, rabies and other toxic poisons stands in the front rank of the greatest triumphs of the art of healing. fascinating story of the fight against tropical diseases in which the Liverpool School has played so splendid a part I

have only time to mention. The growth of physiological knowledge is almost past elief. The physiology of the present day has passed beyond the histology and elementary lessons in the functions of organs which I was taught into the higher regions of chemistry and physics. Let me take one example. I doubt whether in 1880 there were half a dozen men in England who really believed in the great doctrine of the localisation of the functions of the brain. In the Physiological Section of the International Medical Congress held in London in 1881 there was a Homeric contest, of transcendent moment to the advancement of knowledge and vital to the interests of mankind, over the dog shown by Professor Goltz and the two monkeys exhibited by Professor Ferrier. Experimental injuries had been inflicted on the cerebral cortex of each of these animals. The condition of the dog was supposed to prove that localisation of function in the cortex cerebri did not exist. One of the monkeys was typically hemiplegic, having lost power in the arm and leg. Professor Charcot remarked as the monkey came into the room, "It is a patient." The other monkey showed no signs of hearing when a percussion cap was snapped in its immediate vicinity; indeed, it was the only animal in the room that did not jump when the explosion occurred. From that day to this, experimental work on the functions of the brain has been in progress. This field of science has been brilliantly illuminated by the epoch-making researches of Professor Sherrington. It is upon his work, and that of many other scientific labourers,

to undertake, as he may with confidence and success at the present time, the removal of many of the gross diseases to which the brain and spinal cord are liable. So far-reaching is the influence of experiment on the progress of treatment that no one of us can separate himself and say physiological experiment has nothing to do with me. Till the functions of the living organs in health are clearly understood, it is not possible for us clearly to understand the changes that occur in the living organs in disease.

The world's most bitter enemies are, as Kipling has finely said, those who would limit and hamper research. It is well for us to remember that the men who are engaged in researches designed to unravel the tangled skeins of truth in the sciences of physiology, pathology, therapeutics, and surgery are following in the footsteps of Pasteur, of Lister, and of all those who have contributed most to the advancement of medical science and the relief of man's suffering.

That great Victorian, the late Sir Theodore Martin, recently expressing his views on the signs of the times asked, Where are the giants? Where are the Palmerstons, the Disraelis, the Gladstones in politics? Where are the giants in literature? Where in any walk of life are Alpine altitudes to be found? As far as our own profession is concerned there is no difficulty in answering this question. The pageant of medicine and surgery of the past 30 years has been the most glorious of all time. The names of Virchow, Helmholtz, Pasteur, Lister, Paget, Metchnikoff, and Foster, would shed a glory upon any age. The progress of medicine in the present day rests in great part on the labours of past generations. As Carlyle so well said: "The craftsmen there, the smith with that metal of his, with these tools, with these cunning methods, how little of all he does is properly his work. All past inventive men work there with him as indeed with all of us in all things. During the American Civil War one of the most famous songs of the soldiers of the North was "John Brown's body is mouldering in the dust, but his soul is marching on.

You, students of medicine of Liverpool, will perhaps have been wondering why I have chosen, briefly and all too inadequately, to sketch the glorious story of the conflict waged and the splendid victories won in recent years by the profession. My object is to stimulate your ambition, to fire your energies and to clench your resolves, to take a manly and noble part in this struggle. Soon those who are prominent now in the fight will have passed away; and in you, if you resolve earnestly to use these early days of your studentship, if you vow your life to medicine, and if you give it to her wholly, "a bright, stainless, perfect life—a knightly life," John Brown's soul will be marching on, and the years of your life will be as full of blessing to humanity

as those of your teachers have been before you.

The life of the student of medicine falls naturally into three periods: (1) The time spent before he registers as a student; (2) the days of his so-called studentship; and (3) the life that dates from the day that he obtains a licence to practise. In all the learned professions such distinctions are more or less artificial. They are entirely artificial in the profession of medicine; for all who enter our profession become students for life. The licence to practise, though it does not close your studentship, does add to your responsibility as you are then commissioned to go forth alone to investigate the phenomena of nature in health and disease. The joy may soon be yours which attends the first realisation of the power of knowledge, the first successful effort to combat some pain or sickness in the body of a patient committed to your charge.

I cannot influence the first period of your lives, but I may express the hope that many of you have taken a degree in Arts before launching yourselves on a voyage destined to lead you far in many of the natural sciences. The more your intellect has been exercised in the classics, in mathematics, in philosophy, and in history, the more easily will you assimilate and delight in the facts, the laws, and the problems of those sciences to which your studies will now be mainly directed. During the strenuous years that are before you, and in the bustle and hurry of the new life you can, if you will, return to the old learning, which may be to you a grand source of relaxation and a perennial pleasure. Our profession demands, not a minimum of general knowledge but the maximum that can be obtained. In my experience the men in our profession who have had the advantage of general culture are, as a rule, abler physicians than can be cast into the scale of life. I fervently wish each of

those who have not, while those who have had only a scientific education seem sometimes to have one side only of their minds developed. If you have not already had this general education you may with industry and perseverance make up the loss, wholly or in great measure, by taking every opportunity of increasing your knowledge of literature, art, and music. Give a definite amount of your time to the study of modern languages, especially French and German, in which languages much of what is best in the medical sciences is now written. Go abroad whenever you can, widen your views of life, learn as I did in a German university laboratory the pleasure of work for the work's sake, appreciate that in science there are no national boundaries, and that not only in Liverpool and in Britain, but in every country, the great, the noble, the unselfish worker in science is to be found.

If you will pardon a reference to my own early days (and a personal note sometimes appeals to an audience more than anything else), I may tell you that I acquired an elementary acquaintance with the Latin and Greek authors, and imbibed a taste for the reading of the Bible, Bacon, Milton, Shakespeare, Spenser, Gibbon, Macaulay, Carlyle, Scott, Dickens, Tennyson, and some other English classics. The study of these alone constitutes a liberal education. I recommend you to have always at hand some volume of English literature which will be to you, as it has been to me, an ever-present source of edification and delight. I am sure it is best not to become so engrossed in the study of the medical sciences as to be insusceptible to the charm and claims of other byways of knowledge. Your life will be spent in the laboratory of the world, amongst diverse types of mankind, and to be in the best sense a successful doctor you must be not only scientific but human.

One word as to exercise. What we want in our schools and in our national life is some middle course between the German method of no play and the English one of all play. Games and amusements occupy too prominent a place in English life. I see nothing but the obligation and privilege of personal service for national defence that will wean our people, high and low, from their present condition of indiscipline, lazy indolence in amusement, and the vice of betting on every game, to the noble virtues of self-respect, unselfishness, and self-sacrifice. "Hustle, bustle, and noise-the jingling of the guinea, the thousand and one meretricious allurements of the age—have for a time dimmed the fair mirror of English life." As Baruch wrote in Babylon, so we may say in some measure of England of to-day: "The young men have seen light and dwelt upon the earth, but the way of discipline (discipline, discipline or knowledge) have they not known, nor understood the paths thereof, nor laid hold of it; their children were far off from that way." A short time ago my car was stopped in the early evening in a suburb of London by a large crowd which collected round a building and which had blocked the whole road. I asked a policeman what was the matter. He said that the crowd consisted of the unemployed waiting to go into a musichall. Again, it is well known that the same class can always find money to go in their thousands, not to a rifle range, but to witness a football match in some distant city.

Before sending my son to a preparatory school I visited some of the best in England, and usually the headmaster early let me into the great secret that all the assistant masters had won their blue at Oxford or Cambridge. I know of one man who telegraphed to his father from the University, "Shall I play for the University or work for my examination?" The father being an Englishman replied, "Play for the University." The son made over a century for his University, and before the match was over he received by telegram an offer of a post, not, as you will probably guess, in an English school, but as steward of a property in his own county. The father on this occasion made a wise choice, for his son had been so intoxicated by the game's madness that the elementary knowledge required for a pass B.A. was beyond his powers. Surely it ought not to be impossible to combine a little learning with cricket; to do otherwise, I would say, is not cricket, but wilful sloth and indolence. Fortunately, that man had not to turn his mind to the study of medicine, for when all is permitted to depend on the skill of one, think on the responsibility of wilful ignorance when the beam of life and death is so nearly balanced that it turns this way or that according to the more or less skill that you a century at cricket for Liverpool, but the pleasure of work done and duty fulfilled is a far greater and nebler end to strive for.

I know of another man, formerly an undergraduate at Oxford, who wrote to his father that if he remained at the University he must row for his college, and that the time spent in training would jeopardise his chance of success at the Indian Civil Service examination. The father replied, "Act as you think is right." The son made the great sacrifice. He left the University and by winning a place at the Indian Civil Service examination secured the reward of true courage.

true courage.

"Judge not what is best
By pleasure, though to Nature seeming meet,
Created, as thou art, to nobler end."

Recogning (and I recogning)

Propose this test, says Browning (and I remember my colleague, the late Dr. Cullingworth, on one occasion quoted these lines):—

"The body at its best

How far can that project thy soul on its lone way."

The second stage of your life lasts from the time you sign on to the day when you receive your diploma. I do not know the causes which have determined your choice of a profession, but let me offer you a most hearty welcome. The study of medicine and the allied sciences confers on you the prospect of the exercise of all the highest and noblest qualities that man possesses; and opens out to you a vision of truth, order, and beauty, ever growing wider and wider as you learn more and more of Nature and her laws. Can any fairer landscape unfold before the gaze of any human being at the outset of his career? It is for you to seize upon Fortune. It is for you to determine the issue. It is true that "Fortune brings in some boats that are not steer'd." but as a rule "Things bad begun make strong themselves by ill." At first your time will be spent in the study of the sciences of chemistry, biology, physiology, and anatomy. Do not simply learn enough to pass an examination. While you are studying anatomy determine to become an anatomist, and so also with each science which claims your attention. It is remarkable how the knowledge gained in the first years of your student life will be of service to you in later years. Bacon and other great thinkers are unanimous in this "that no natural phenomenon can be adequately studied by itself." The natural sciences are so intimately related that each one, in so far as it has been mastered, will illuminate phases and dark areas in the others. If you make good use of the first two years I can promise you that you have laid a foundation which will bear good fruit. Do not be discouraged at the vastness of our art or the narrowness of human wit. Steady, daily industry will soon give you the sweet sense of overcoming. Labour is a moral obligation laid on all men:-

"And does the road lead uphill all the way?
Yes, to the very end.
And will the journey last the whole long day?
From morn till night, my friend."

"Genius," says Carlyle, "means transcendent capacity for taking trouble first of all." There is no palm of victory where there is no struggle. The Hill Difficulty may be climbed by cultivating the habit of industry and Bacon's heaven on earth may be enjoyed by the student of medicine "whose mind moves in charity, rests in Providence, and turns upon the poles of truth." It is equally a moral obligation to cultivate our faculties, as it is customary to exercise our muscles to keep them in order. The keeping of your bodies strong in no wise involves the keeping of your minds weak. Hard work is necessary for any degree of success. It is of paramount necessity that the student should learn something every day—"Now he weighs time, even to the utmost grain." "Having then resolved that you will not waste recklessly but earnestly use these early days of yours, remember that all the duties of her children to Medicine may be summed up in two words-industry and honour. I say first industry, for it is in this that student youth are especially tempted to fail. Secondly, honour. Though it is not exacted of you, yet exact it of yourselves, this vow of stainless truth. Vow yourselves crusaders to redeem that sacred sepulchre. Bind it like a shield about your necks; write it on the tables of your hearts."

When you have finished your preliminary studies in anatomy and physiology the vista of the life before you will become more and more entrancing. The wilderness of truth in the science of medicine, of surgery, and of pathology is no longer pathless. Many of the evergreen glades in bright with promise.

these subjects have been trodden by your predecessors; and your first task is to master the geography of these before contemplating a tour of discovery in new and unexplored fields. As you spend your time in the wards and out-patient rooms bear in mind the lesson taught by Sir George Humphry to generations of Cambridge men—"Eyes first and much, fingers next and less, tongue last and least." Eye diagnosis is of the first importance. It promotes keenness of observation and accuracy of judgment. The cases you have charge of while holding the appointment of clerk and dresser form a standard or guide which will be of service to you all your life. They will not leave your memory if diligently watched and carefully described. Disease recurs, and so in practice you will see similar cases, and your first clinical experience will then be an aid to you in diagnosis, prognosis, and treatment. It is an excellent practice to keep brief private notes of your ward cases. And if you are skilled with the pencil, and the subject lends itself to illustration, make a drawing, which is often better than the most laboured description. If you cannot draw you can at any rate photograph. In a few years by sketching or photography you may accumulate a valuable album illustrative of disease and its treatment.

Nowadays there is much too much tendency to depend on coaching classes—a kind of spoon diet which cuts the ground from under that self-reliance in work and in preparation for examinations from which the best results flow. You cannot become a good doctor without self-sacrifice and persistent personal effort—

"The sweat of industry would dry and die But for the end it works to."

Spoon diet is not fitted for those who wish to attain real knowledge in the natural sciences. Reflection is required, but in the rush and scurry of the present age no time is allotted for this most necessary process. Nothing is more certain than that you cannot gain a reasonable and soul-sufficing knowledge of our art and science by cramming. Time is required. Look into Nature with her vast powers and inexhaustible resources, these are never used for production by sudden and spasmodic efforts. "Consider the lilies of the field how they grow." How, then, can any one of us hope to gain the wisdom and knowledge required for the fight with death except by slow and persevering industry?

There is a point which I must not omit to urge upon you. Never hurt a patient's feelings either of mind or body by unwisely arranged questions or by unnecessary exposure of the person. Ask, for example, if a woman is married before asking whether she has any children, and never inflict pain by rough manipulations in your examination of a case. I well remember the castigation given to a student by the late Dr. Charles Murchison for using unnecessary vigour in percussing out the area of dulness in a case of pericarditis.

It is a common practice to attribute want of knowledge in a class or at an examination to nervousness. In most cases this is an error. Nervousness results, as a rule, from lack of intentness in work, such as dawdling in the wards; and connotes, as a rule, some lack of preparation, some imperfection in personal effort. Do not, then, let any occasion arise in which you may be tempted to make the excuse of nervousness.

A striking example of the importance of attention as a principal factor in the intelligence of animals is related by Dr. Bastian. The facts were communicated to Darwin by the late Mr. Bartlett of the Zoological Gardens. A man who trained monkeys to act, used to purchase common kinds from the Zoological Society at the cost of £5 each, but he offered to give double that price if he might keep three or four of them for a few days, in order to select one. When asked how he could possibly so soon learn whether a particular monkey would turn out a good actor he answered that all depended on their power of attention. If when he was talking or explaining anything to a monkey its attention was easily distracted, as by a fly on the wall or other trifling object, the case was hopeless. On the other hand, a monkey which carefully attended to him could always be trained. So it is with you and with me, and, indeed, all students of medicine, nearly everything depends on the power of attention, for without it knowledge cannot be garnered and the case is hopeless. Those, on the other hand, who cultivate carefully the power of attention have the assurance, not only of present success, but of a future

And now let me say one word to those who may fail in the struggle for prizes, for appointments, and in examinations.

"What though the field be lost? All is not lost—the unconquerable will, And courage never to submit or yield,"

will enable you to make good the failure and redeem the loss. Never say fail—banish such a word, such an idea from your life. I failed in a botany examination a long time ago. am sure it was my own fault. But if you have worked well, as some do who fail, never mind the failure. The work you have already done will bear fruit and promote your success on a future occasion. No good work was ever wholly lost. It is good work which ultimately tells in life and not immediate and maybe transitory success. Your character is in the crucible. Gold must be tried by fire. Immediate success is of less importance than the formation of character. The stay of man in the midst of depression, discouragement, and defeat is the consciousness that he has faithfully rendered obedience to the command of the Preacher: "Whatsoever thy hand findeth to do, do it with thy

The third period of your life begins when you receive your diploma. It remains for me to say a few words on the life of the doctor. You will soon find that you have no hours of work or rest that anybody is bound to respect. You have no evenings, no nights, and no Sundays which you can call your own. A friend of mine living in a country town and having a practice extending 15 miles in every direction around it, received on a certain Saturday evening five letters from as many clergymen asking him to call immediately after morning service on the following day—requests which required a drive of 40 miles: and showed a thoughtful interest in his temporal and spiritual welfare. You are cast on the world with a parchment authorising you to practise on His Majesty's subjects. You require a knowledge of disease, but you also want to learn how to deal with men. There is much truth in the saying that to travel round the world is a more valuable asset to a medical man than the M.D. of any university. There are no lectures on savoir faire given in the schools. One of the first patients I saw in private practice was a man with a small carcinoma of the tongue, and as he seemed to hesitate about its removal it was agreed that a consultation should be held with Sir James Paget. After the examination of the patient Sir James took me into another room and to my utter surprise said, "I agree with you entirely, the case is a most favourable one for operation, but I have long made a study of men, and this man belongs to a rare type which invariably refuses operation, however earnestly we or other surgeons may advise consent." And it was so; Sir James Paget's eloquence broke on a stubborn reef and this patient was never operated on. Tact will sometimes succeed when without it the surgeon is powerless. I remember many years ago a patient very ill with strangulated hernia was addressed in a melancholy voice by a surgeon in these words: "I am very sorry to say that I shall have to operate on you"; the patient promptly replied: "You need not be sorry, I will not have any operation." Another surgeon came on the scene and after chatting for a while with the patient said: "This rupture must be put back, but I shall have to give you a little chloroform"; the patient immediately responded, "Thank you; please do it at once." This incident shows how a gloomy manner and an unhappy choice of words may be prejudicial to a patient. Solomon says, "Death and life are in the power of the tongue." "Operation," "cancer," and some other terms excite in some patients resistance or needless dread; and we should, when seeing a patient for the first time or in cases of serious illness, avoid using "such Ethiop words, blacker in their effect than in their countenance."

The man who thinks only of his patient as an interesting pathological specimen does not succeed in practice. Think of the tragedies and sadness which day by day we witness. The relations and friends want to know, not whether an interesting post-mortem examination may be expected, but what are the chances of recovery. Devote yourself without stint of time and trouble to your patient. Never give in, however grave and hopeless the illness, while life lasts, and you will have your reward and rightly and surely win the affection and esteem of the whole neighbourhood. In the despair of illness, even when "life is set at a pin's fee,"

"to labour in his vocation" till that "the fire of life kindle again" or the hour arrives when

44 Labouring Art can never ransom Nature From her inaidable estate."

Every man is a debtor to his profession. A vast field of our art and science still remains unmapped and unexplored. Let it be your ambition to contribute something to the slow but certain advance of medicine. Though in this as in every other branch of science each stage is associated more particularly with one or more great names which are inter-woven in its history, yet we ought never to forget those of less renown, the most obscure doctor who has accurately recorded an important fact, he also has added his stone to the building. It not seldom happens that before qualifying for practice a student becomes interested in some problem which he determines as soon as time and opportunity offer to investigate. It was so in my own case. I trust that some of you will take up research work, for you will then add greatly to the interest and satisfaction of your life, and you will be fulfilling that sacred duty laid upon us all of adding one more stone to the building. Nothing can exceed the zest to life that such work gives. The joy of research work is, like that of religious belief, incommunicable from one person to another. Seize the occasion, do not delay, for in later years other duties may imperiously interpose, other work may fetter you in its prison, or strength may fail.

The attempt to solve one problem you will soon find determines the opening up of many others. The majestic range of science and the littleness of all our knowledge will dawn upon you. You will be brought face to face as a humble investigator with the problems of science, illimitable and inexhaustible, which await solution. You may attain the thrill of delight which accompanies the first perception, the slow unfolding of some new truth or principle. Though awed and amazed by the wonders that extend far beyond your vision, do not be discouraged by what may appear but as a puny effort on your part. Take courage and resolution from the words of Paracelsus :-

"So that when, qualling at the mighty range
Of secret truths which yearn for birth, I haste
To contemplate some one truth,
Its bearings and effects alone—at once
What was a speck expands into a star,
Asking a life to pass exploring thus,
Till I near craze. I go to prove my soul!
I see my way as birds their trackless way. In some time, His good time, I shall arrive. He guides me and the bird—in His good time."

The life of the doctor is so closely bound up with all the most intimate phases of human life, it touches so closely the finest and deepest chords of the life of man, that it is not surprising that literature teems with references to our pro-Often in the most satirical and humorous descripfession. Often in the most satirical and humorous descrip-tions of the doctor's life there is some underlying truth which makes the satire or the humour all the more pungent. Dr. Sangrado combined a glib tongue with very active methods of treatment. No one could say of him as we can of the charlatans of the present day that-

"Mere prattle without practice was all his soldiership."

In appearance Dr. Sangrado was tall and withered. He is described as the learned forerunner of the undertaker. His routine diagnosis was obstructed perspiration. His staple remedies were drenching and bleeding. He believed it was a mere vulgar error that the blood was of any use in the system-the faster you draw it off the better. To live, he said, is merely not to die. A patient has no more occasion for blood than a man in a trance. It is recorded that Dr. Sangrado despatched business so fast that the fraternity of notaries who made wills found half their jobs spoiled, as they could not keep pace with him. Notwithstanding all this farrago of nonsense, it is true that in certain cases bleeding is an excellent remedy, and that drenching is patronised yearly by the fashion who overeat themselves now, as they did in Valladolid, in Sangrado's time, during most of the

In the case of Mr. Pilgrim the satire is directed against his commercial instincts. Mr. Pilgrim's estimate of even a confiding patient was apt to rise and fall with the entries in the day book. He was known to have discovered the most unexpected virtues in a patient seized with a promising illness. A good inflammation fired his enthusiasm, and a action, not inaction, is comfort. It is the doctor's privilege | lingering dropsy dissolved him into charity. Gradually, as

his patients became convalescent, his view of their characters became more dispassionate; when they could relish mutton chops he began to admit that they had foibles; and by the time they had swallowed their last dose of tonic he was alive to their most inexcusable faults.

Passing from this sordid view, we have in the "Crown of Wild Olive" a noble statement of our relation to the necessary but always difficult question of fees: "A good soldier mainly wishes to do his fighting well. He is glad of his pay—very properly so—still his main notion of life is to win battles, not to be paid for winning them. So of doctors. They like fees no doubt-ought to like them; yet if they are brave and well educated—the entire object of their lives is not fees. They desire to cure the sick; and if they are good doctors, and the choice was fairly put to them, would rather cure their patient and lose the fee than kill him and get it. And so with all other brave and right-minded men: their work is first, their fee second—very important always, but still second. This is no small distinction. It is between life and death in a man; between heaven and hell for him. You cannot serve two masters: you must serve one or the other. If your work is first with you, and your fee second, work is your Master, and the lord of work, who is God. But if your fee is first with you, and your work second, fee is your Master, and the lord of fee, who is the Devil; and not only the Devil, but the lowest of Devils-' the least erected fiend that fell.' So there you have it in brief terms; Work first—you are God's servants; Fee first—you are the Fiend's. And it makes a difference, now and ever, believe me, whether you serve Him who has on His vesture and thigh written 'King of Kings,' and whose service is perfect freedom; or him on whose vesture and thigh the name written, 'Slave of Slaves,' and whose service is perfect slavery."

It is a solemn and momentous fact that no individual in the world stands alone: "For none of us liveth to himself and no man dieth to himself." Let us always remember this in our relations with patients and others with whom we are associated. It is in the bearings of our words and acts on the lives of others that the solemn responsibility of human existence lies. The ripples produced by the casting of a pebble into the sea will theoretically never cease.1 Resolve then that your words and actions which start enduring ripples and eddies in the lives of others may be without spot and blameless. Wisdom is the principal thing, so let your influence lead to the love of wisdom, for is it not written that "She is more beautiful than the sun, and above all the order of the stars: and being compared with the light she is found before it, she is the brightness of the everlasting light, the unspotted mirror of the power of God, and the image of His goodness."

There is one word more I should like to add before concluding these remarks. The pathway of medicine is like the pathways of all other departments of life, in which the lot of man is cast. The student pilgrim of medicine has a free choice offered to him. It is the old old story of the choice between good and evil. None of us are exempt from the dangers and temptations of life. Pallas Athené in her legendary address 2 to Perseus demands an answer to the question as to which of two sorts of men are more blessed. "I am Pallas Athené; and I know the thoughts of all men's hearts, and discern their manhood or their baseness. And from the souls of clay I turn away, and they are blest, but not by me. They fatten at ease, like sheep in the pasture, and cat what they did not sow, like oxen in the stall. They grow and spread, like the gourd along the ground; but, like the gourd, they give no shade to the traveller, and when they are ripe death gathers them, and they go down unloved into hell, and their name vanishes out of the land. But to the souls of fire I give more fire, and to those who are manful I give a might more than man's. These are the heroes, the sons of the Immortals, who are blest, but not like the souls of clay. For I drive them forth by strange paths, that they may fight the Titans and the monsters, the enemies of Gods and men. Through doubt and need, danger and battle, I drive them; and some of them are slain in the flower of youth, and some of them win noble names, and a fair and green old age." There are still Titans and monsters to be grappled with in the spiritual and secular world, and splendid victories to be won by the students of

medicine by industry and faith over disease and death. May it be your resolve to answer with Perseus: "Better to die in the flower of youth, on the chance of winning a noble name, than to live at ease like the sheep, and die unloved and unrenowned."

The love of knowledge is natural to man. I may add that so also is the love of goodness. In the competition of life it is well to try to think always the best: not the worst of your companions and contemporaries. "Suspicions among thoughts are like bats among birds, they ever fly by twilight. Sir George Humphry's variation of the motto "Evil be to him who evil thinks" contains a great truth: "Good will be to him who doth good think." If evil is born in us, it is equally certain that we are the inheritors of a principle of goodness. "False prophets have told us for centuries that men are nothing but fiends or wolves, half beast, half devil. Believe that," says Ruskin, "and indeed you may sink to that. But refuse that, and have faith that God 'made you upright,' though you have sought out many inventions; so you will strive daily to become more what your Maker means you to be—and daily gives you also the power to be—and you will cling more and more to the nobleness and virtue that is in you, saying 'My righteousness I hold fast, and will not let it go.'"

In this great city the sweetest story of an ideal doctor's life was written.3

"Not once or twice in this rough island's story The path of duty was the way to glory."

The Drumtochty doctor won his way to glory, but the story of his life is but one example of the sympathy, the selfsacrifice, and the essential goodness exhibited in the lives of thousands of men who have ennobled that profession on the threshold of which you stand. The Drumtochty doctor didna' trouble the Kirk often; but in the path of duty and The Drumtochty doctor charity he did his best, regardless of reward, in the cold and in the heat, in mist and in rain, in winter storm and in biting winds, through peat bogs, and through snowdrifts, and through rushing torrents, year in and year out, for every man, woman, and child, in the wild straggling district in which he practised.

"The sweetest canticle," says Bacon, "is Nunc Dimittis, when a man h a attained worthy ends and expectations. May each of you here have that sweet music as your reward. Wherever y'ur lot may be set and under all the changing circumstances of time the bed-rock principles of an ideal life remain unchanged. Let me, then, commend to you the life and character of the Drumtochty doctor. He went about doing good and healing the sick. He visited the fatherless and widows, and kept himself unspotted from the world, thus practising that pure religion and undefiled which won for him, and which may win for you and for me, as we pass into the silent world, the answer from the King: "Amen dico vobis, quamdiu fecistis uni ex his fratribus meis minimis, mihi fecistis."

THE OPERATIVE TREATMENT OF CATARACT.1

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I. EXTRACTION OF CATARACT IN THE CAPSULE.

So much has been written on this subject that I fear it is difficult to add to it much of interest. However, as few writers with any considerable experience of the operation, except Major H. Smith, I.M.S., of Jullundur, have recorded their actual experience, I think it is of value for other operators to place their experience on record. My experience is based on 576 cases operated on by me, chiefly at the Civil Hospital, Jullundur, where I had the privilege of working for a year under Major Smith. 81 of these cases were done at the Cantonment General Hospital, Meerut.

General Results.

Suppuration occurred in two cases, leading to total loss of the eye. One of these disasters occurred in a case in which I had to introduce a spoon to extract the lens owing to vitreous appearing at the upper edge of the wound whilst

¹ The House of Fame. Chaucer. Liber secundus.
² The Heroes, by Charles Kingsley.

Beside the Bonny Briar Bush, by Ian Maclaren.
 A paper read at the Bombay Medical Congress, February, 1909.
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attempting to extract the lens. Suppuration at the site of the wound occurred in two cases, due, I think, to infection at the first dressing, as it was left to a compounder. One of these cleared up and caused no after-effects at all. The other did not clear up readily, but curiously enough caused scarcely any pain, and the patient left hospital on the eleventh day to proceed home, thinking he was all right. I am unable to say whether the result was a permanent damage to the eye. This gives a percentage of 0:34 per cent. of eyes definitely lost by suppuration. I attribute this low percentage to the use of the 1 in 2000 perchloride of mercury There is no doubt that this lotion is a strong one to use for douching the eye, as I can vouch for from personal experience of it. I had my own eye douched with it as I happened to get some pus into it. It caused me such pain that I could not open my eye for a time, and it remained painful for four hours afterwards. Of course, it must be borne in mind that the patients are all under the influence of a 4 per cent. cocaine solution, and do not, as a matter of fact, complain of more than a little pain, and that it is a potent factor in preventing suppuration I think is undoubted, as very few indeed of these cases were given any preliminary treatment for the conjunctiva. I would not have operated on some of them had I not learned from observation at Jullundur that it was safe to do so if one used the douche. Slight keratitis occurred in two cases, which yielded readily to treatment by a saline purge and pilula hydrargyri internally. No cases of intraocular hamorrhage occurred in my cases. No case of iritis was seen at all.

Lacrymation —Troublesome lacrymation occurred in several cases, but usually yielded readily to treatment by instillation of weak zinc sulphate and boric acid drops. In one case, which was not relieved at all by this treatment and which persisted for a fortnight, relief was obtained by ordering the patient to douche the eye freely with cold water twice a day.

Marked injection of the conjunctiva with lacrymation occurred in a certain number of cases. I attribute it chiefly to an excess of the 1 in 2000 perchloride lotion left in the conjunctival sac. It yielded readily to local treatment. If any marked pain was present leeches were always applied and invariably gave relief.

One complication of great interest occurred, and I have not heard of a similar one. A man, aged 73 years, an intelligent carpenter, was operated on by me for an ordinary mature senile cataract. His pupillary reaction was normal and projection of light perfect. The cataract was extracted in the capsule quite easily without any complication whatever. When the eye was opened for dressing on the fourth day the man said he could not see fingers held in front of the The cornea was clear and the eye looked perfectly normal. The wound healed normally and the progress of the case was in every way normal, but he was never able to distinguish more than the movements of the hand in front of the eye and left the hospital after 17 days in this condition. Before leaving the hospital the fundus was examined but appeared normal. I was quite unable to understand why he could not see, and particularly asked him to come back again later to report progress. About three and a half weeks later he came to my house looking extremely pleased and walked into the room obviously seeing, as his other eye had been lost. He stated that a week before his sight began to come back and in three days was completely restored. That is to say, after a period of three weeks, during which he could only see hand movements, his sight was completely restored. I had no time to estimate his refraction carefully but his vision was excellent, and I have no doubt will be \$ when his cornea settles down. The fundus was quite normal. It is not possible to say what was the exact cause of this condition. In the absence of a better explanation it seems possible that the removal of the lens entire, for it was a large one, may have had some effect upon the circulation of the retina, causing a temporary interference with its functions. The man's mental condition was quite normal, and there is no doubt as to the genuineness of the history, as he was a very intelligent carpenter, who could give an excellent account of his past services.

Escape of the vitrems. - In my series of cases escape of the vitreous occurred 29 times. In 22 cases it occurred during extraction of the lens in ordinary cataracts. In two cases it occurred during extraction of the lens, which had been previously dislocated by the "rawal" or native lens coucher. Including all cases this gives a percentage of 5.03. Taking

cataracts whose lenses were not previously dislocated, this gives a percentage of 4.7 approximately. The only serious complications, due to the loss of the vitreous in my series. was drawing up of the iris, leading to occlusion of the pupil in one case. The eye has recovered, and I propose making an artificial pupil for the patient, who is still under treatment. In most of the other cases the escape of the vitreous caused no trouble at all, but in a few cases the patient suffered from lacrymation due chiefly to the edge of the iris being caught in the wound. In two cases the edges of the iris had to be snipped off. In one case, that of a very old woman, considerable flattening of the cornea resulted, and I was in despair of it getting right. In six weeks' time, however, it became all right, and she was anxious to have the other eye operated on. I am in favour of using a pad sufficiently large to exert mild pressure on the eye in cases in which escape of vitreous has occurred. In one case where this was not done I noticed when the eve was opened on the third day that the cornea at the lower edge of the wound was bent away from the upper edge and the wound gaping. This was due to a very nervous patient "squeezing" at the time of operation and after. The wound healed quite well but the iris was drawn up, occluding the pupil as described before. It is interesting that although the wound was open wide on the third day no suppuration occurred, and it healed soundly when a firm pad was applied.

The percentage of escape of the vitreous in the operation undoubtedly decreases with the experience of the operator and—a point upon which I wish to lay stress—the experience of his assistant. The first point is well illustrated by my own experience. In my first series of 63 cases at Jullundur in the spring of 1907 escape of the vitreous occurred in six cases, whereas at Jullundur in 1908 I did 64 non-selected cases in two days with only one slight escape of the vitreous in one case. In this case, moreover, the patient squeezed out the lens with a little vitreous on completion of the incision. The second point is illustrated by my Meerut experience in 1908. In a series of 81 cases I had escape of the vitreous in seven. I had to start operating with assistants who had no previous experience of eye operations at all and very little of surgery. I should mention also I was handicapped by having to operate out of doors for the first 40 cases owing to want of proper light. I am quite sure that had I had a good assistant at least half of the escapes of the vitreous would not have occurred. I think, therefore, it is impossible to lay too much stress on the importance of fully training your assistant. Every operator should if possible first act as an assistant himself to become fully familiar with all the details. When seeing a really good assistant at work one hardly realises what an important part he plays in the operation. It is only when having to train one for personal aid, particularly if he be not too intelligent, that the importance of his part and how much damage he can do are realised. He should be taught that not only should he keep the orbicularis muscle well under control, but that when placing his thumb in position for this purpose he should draw up the loose skin of the upper lid so as to keep the eyelids well open. If he does not do this the operator will not have such a good view of the field of operation—a very important desideratum. He should be taught that he must always watch the patient's expression, and the moment the patient shows any sign of straining he should take hold of the speculum lightly and be prepared to raise it, so as to prevent the patient putting pressure on the eyeball by closing of the lids and causing escape of the vitreous. A good assistant will anticipate this and avert it.

Results as regards vision.—It is quite impossible to give a statement of the exact vision obtained by every patient operated on in Indian hospitals in the provinces. Jullundur, owing to deficient accommodation, the patients are allowed ordinarily to leave the hospital on the sixth day. The eye is still weak and cannot tolerate light well enough to allow the vision to be tested at a distance. In Meerut my patients are discharged on the tenth day, but that also is too early to allow their vision to be tested other than roughly. I show the patients groups of small dots, varying in size from one readily seen down to one as big as the ordinary full stop in print. They are asked to count these with a + 10 D. lens. If they can count down to the last size but one I am sure from experience their vision will be about \$ when the cornea has settled down. This may not appear very scientific, but it is all one can do and it is for all practical purposes

sufficient. I have had the opportunity of seeing and testing many cases of my own and of Major Smith which came back for various reasons, and from an experience which is based on certainly not less than 250 of these cases, I should say that the average vision obtained after this operation, provided the eye was healthy before operation, is \$.

Astigmatism.—I have worked out the refraction of a number of cases and find the resulting astigmatism is usually from +0.75 D. to +1.0 D. To European ideas this statement of results will appear unsatisfactory, as it has not the usual table giving the vision obtained by each case. To those, however, who know the East, and that the native of India is as well able to appreciate the value of an operation as the people of other countries, seeing that he judges by the result only, which after all is the essential point to people of any nationality, the fact that in six months (and that broken up into two periods through enforced absence) I was able to get 81 people to come forward for operation, will appeal as an argument of the first importance. It should be mentioned that this was in a small cantonment hospital, where no eye work at all had been done in the preceding year, and that all around are found in every station operators for cataract by the ordinary method of wide experience. Had my results been worse than those of others near me, no one who has any knowledge of India will deny that my cases would have fallen off as the results became known.

I will now make a few remarks on certain points of importance in connexion with the operation.

Technique. - My technique was exactly that of Major Smith, to whose kind tuition I owe almost all that I know of this operation; it has been fully described already, so I shall not describe it here, but a few observations on matters which my experience suggests may be of interest. I think that the most important thing in the operation is for the operator to have an exact knowledge of the particular way in which to extract each class of cataract. It is extremely difficult to give a description of the different classes of cataracts classified from the point of view of the operator. It is quite easy to point them out clinically, and I cannot too strongly emphasise the importance of the operator being able to tell at a glance which class of cataract he has to deal with, and how it will behave. For instruction on this point I advise him to see Major Smith's book, which is coming

out shortly, as space forbids me to go into it here. I strongly recommend anyone commencing to do this operation to spend some time with a surgeon who has a large clinique, and to acquire this knowledge practically, which, in my opinion, is the only satisfactory way. The knowledge doubtless can be acquired by an intelligent operator by actual experiment, a course which is, however, fraught with danger to the patient—a fact which is obvious when we read of the experiences of operators in America and elsewhere who have tried this operation without a full practical knowledge of the details. It does not surprise me at all that they condemn it and give it up. I admit at once that the operation is more difficult to learn and more dangerous to the patients in the hands of a beginner than is the ordinary operation. I consider, however, that in the hands of an experienced operator the freedom from complications, the avoidance of a secondary operation, and the better vision obtained are of such importance as to render it the ideal operation. When the fact that immature cataract can be operated on at any stage with absolute safety is taken into account, thereby saving patients sometimes years of weary waiting, and, as sometimes happens, loss of sight whilst waiting, from glaucoma or other diseases (an occurrence which I have seen several times myself), I think the advantages of this operation are so enormous as to render it the most important advance in ophthalmic surgery since the time of Daviel. To estimate the value of knowing the exact method of procedure in this operation, I may mention that on several occasions when operating at Juliundur, where both eyes are usually operated on at the same time, I have extracted the lens and had escape of the vitreous; the fact has been pointed out to me that I failed to modify the technique quickly enough. Major Smith has then operated on the other eye to show me where I had failed and has had no escape of the vitreous at all. Both eyes almost always, if the cataract be of the same degree of maturity, behave in the same manner in this operation. One of the ways in which escape of the vitreous occurs and may be prevented is in the operation for fairly immature cataracts. These cataracts are usually vomiting and do not advocate the general use of chloroform,

extracted by dislocating the upper edge first, which comes first through the wound. The operator by pressure directed backwards dislocates the lens and keeps the pressure up, but the lens does not come out. If the pressure be continued, as it must be, and the lens does not emerge, the vitreous may appear above the upper edge of the lens. If when the vitreous is seen in this position the pressure be still kept up, but its direction instantly changed so as to cause the lens to be carried upwards and its posterior surface to pass over the posterior edge of the incision, the escape of the vitreous will be averted. Escape of the vitreous occurred in this way two or three times to me whilst operating before I learned to modify my technique instantly so as to avert it. Sometimes the manœuvre has to be combined with counter pressure with a flat spoon above the wound. It is by slight variations of technique such as this, which are carried out by the experienced operator almost automatically, that the various difficulties which arise are overcome and escape of the vitreous and other accidents are avoided in this operation. operator who is able to anticipate the various modifica-tions of technique required in the course of the operation is the one who will have the best results. doubt as to how a particular cataract should be extracted, my opinion is that the safest way to proceed is to see if the lower edge of the lens can be dislocated first and the cataract made to turn over and come out with the lower edge first. This is done by pressing with the strabismus hook over the lower third of the cornea with a moderate pressure, the direction of the pressure being towards the patient's feet. If the lens is going to turn over, the lower edge will be seen commencing to dislocate and should not be hurried. As it dislocates, the pressure with the hook should be changed to the upward direction and the lower edge of the lens be followed up, to help it out and prevent its falling back again. If, however, it is not going to turn over and the upper edge of the lens dislocates first, the direction of the pressure should be immediately carried backwards and upwards, following up the lens as it passes out through the wound. It is the failure to instantly change the direction of the pressure and to modify its degree which accounts so often for escape of the vitreous and bursting of the capsule in this operation.

The importance of quickness. - I think it is very important, if the patient is very nervous, and particularly if a woman of the higher classes in India, who are I find usually very nervous, to extract the cataract as speedily as possible. I find I am most liable to get escape of vitreous in this class of case. It has occurred to me several times, whilst extracting one of the large white-looking mature lenses, which have to be extracted lower edge first, as previously mentioned, that all has gone well until the slow pressure of the lens turning over has pressed on the iris. Pain results, the patient strains, and if care is not taken the vitreous is very apt to be squeezed out, or the lens capsule to burst. I think the two best ways of guarding these occurrences in this class of case are: 1. To be sure you have a large enough incision. In a patient likely to give trouble I take care to give plenty of room for the lens to slip out easily. If the incision be made a shade larger than usual the lens comes out more quickly, a very desirable thing in patients with small self-control. 2. I have lately given obloroform in these cases. I was led to try it first by having a "purdah nashin" woman of a highly nervous type brought to me for operation. Her other eye had been unsuccessfully operated on by the ordinary operation elsewhere. I concluded she had behaved badly at the time of operation, and that she would do so for me. I decided to give chloroform. I had no difficulty and the case did perfectly. I think I should have not succeeded so well without chloroform. This case led me to try chloroform in other cases of the same class with equally good results. I have done too few to be able to come to a definite conclusion, but I think chloroform merits further trial. I put the patient fully under, completing all preliminary preparations as she is going under. I operate the moment anæsthesia is complete. The eyes are usually turned up, but this does not cause the least difficulty in this operation. The patient soon comes round, and usually is allowed to go to sleep if possible, as there is then less liability to vomiting, I find. The patient should, of course, be carefully watched until the anæsthesia passes off. I am fully aware of the increased danger of intraocular hæmorrhage from but it has been of great service to me in the class of case mentioned, and I mention it for that reason.

Iridectomy.—I prefer always to do an iridectomy. skilful performance of the iridectomy is of special importance in this operation, as you have a large wound and greater liability of the vitreous to escape consequently. should be very lightly caught; in fact, scarcely held at all by the forceps, as it is a sticky membrane and adheres to the forceps. If squeezed, the patient is very liable to strain and force out the lens or vitreous, or both. The edges of the iris are rather liable to prolapse, even when they have been carefully replaced, owing to the large wound. This may be suspected if the patient complains of excessive lacrymation when the eye is dressed. If very small the prolapse may be left alone, but if large the eye should be cocainised, and gently washed out with boracic lotion. The upper lid should be raised by an assistant by means of a strabismus hook and the projecting piece of iris snipped off with a sharp scissors. The lacrymation will soon cease if this be done, and the eye will settle down and give no further trouble.

II. THE AFTER-EFFECTS OF ESCAPE OF THE VITREOUS DURING THE OPERATION OF EXTRACTION OF CATARACT IN THE CAPSULE BY SMITH'S OPERATION.

In the various discussions which have taken place from time to time, as to the advantages and disadvantages of this operation, it has been contended by the opponents of the operation for the extraction of the cataract in the capsule that one of the chief objections to this operation is the frequency of escape of the vitreous. This being the only complication which is at all frequent, and the one which is most commonly met with by beginners in this operation, I inquired from Major Smith on my arrival in Jullundur in 1906 if any series of cases had ever been published in which the after-effects of escape of the vitreous in this operation were given. Major Smith informed me, that as far as he was aware, no such series of cases had ever been published either after this or the capsulotomy operation. I then offered to undertake a research into the subject and received permission from Major Smith to make every use of his hospital records which were placed at my disposal for this purpose. Every assistance was rendered me by Major Smith, whom press of work alone had prevented from carrying out this work before. Many thousands of cases in the operation books were gone through and the names of patients in whose eyes escape of the vitreous had occurred were noted. Each patient was then written to, and of them 95 presented themselves for examination. In certain of the tables it will be seen that the amount of vitreous and the remarks made at the time of operation are not given. The reason of this is that in the operation book a note only was made of the fact that vitreous had escaped. The details are noted by Major Smith on the patients' tickets always under four headings: (1) drop = 2 to 4 minims; (2) trace = 4 to 5 minims; (3) slight = 5 to 10 minims; and (4) some = 10 minims to one-third of the vitreous. The cases will be found classified in the tables appended under these headings.

As the cases went back as far as nine years, it is not surprising, considering the many thousands of hospital tickets there were, that all the tickets could not be found. Native patients are very apt to take the ticket home with them when they go, and in a large hospital with many hundreds of patients and a very small staff, such as there is at Jullundur, it is not always possible to prevent this. Some patients being satisfied with their condition do not wait to be discharged, but depart, taking the tickets with them. These facts will be well known to surgeons in India, but they are mentioned to make the matter clear to any who do not know India. Three were found to have had escape of the vitreous in both eyes, so the number of eyes examined was 98. In 90 of these cases no portion of the capsule of the lens was found to remain; in eight a portion of it or the whole was found to be present.

Method of Examination.

The vision of the patients was tested by Snellen's testtypes, if they were able to read; in the case of those unable to read, who formed the bulk of the cases, by

Snellen's distant test-types, were kindly supplied for this purpose by Messrs. Lawrence and Mayo of Calcutta. I found it more convenient to cut out various groups of dots and to mount them on cardboard, one or two for each corresponding line of Snellen's test-types. dealing with patients lacking in education and advanced in years, this plan will be found an advantage. I have many times tested the results given by the same people when asked to read the Snellen's test-types. I find that on the whole the dots are slightly the harder test of the two, so that all the results given may be taken as absolutely correct. I found the use of these dots more convenient than Landolt's optotype, which I also used for some cases. At first I endeavoured to test the vision with the glasses found by determining the refraction of each case by retinoscopy. I found after doing a number of cases that the astigmatism was scarcely ever over one dioptre, so to save time I gave up doing a retinoscopy in every case, and gave them the plus lens they preferred, which in almost every case was a plus ten dioptre lens. The excellent results obtained proved the correctness of my observations, as the results obtained were all without the use of cylindrical lenses. I have noted in the column of remarks the cases in which the spherical lens other than + 10.0 D. was

The patients in most cases insisted on returning the day they arrived, so that on account of press of work I was unable to do a retinoscopy in the majority of the cases. As excessive astigmatism has been alleged to be caused by this operation, it may be well to call special attention to these facts. I have also observed a number of cases in which escape of vitreous had not occurred, and I found that in them also the average astigmatism was one dioptre. Owing to enforced absence on several occasions 25 of the cases were kindly examined for me by Major Smith. I had also the advantage of the opinion of Major Smith on the few cases in which disease of the fundus was present, which will be mentioned later. The chief facts revealed by this research are as follows. The total number examined was 98; in no case was any detachment of the retina present. Disease of the fundus was found to be present in eight eyes. A detailed account of these is given. The exact time which had elapsed since the operation was known in every case. It averaged 3.706 years. The different periods since the time of operation ranged from six months to nine years.

Vision of Cases.

Tables will be found at the end of the paper giving the exact vision of each case, with one exception, in which by an oversight I forgot to note it at the time of examination. It may be wondered why the vision of the cases in Table A does not quite correspond with that of those in Table B, being in the form shown chiefly as ; the answer is that at first I did not test a patient further if he had a vision of §. Later, when I found what excellent vision they had, I endeavoured to estimate it exactly. It will be noted that the average standard of vision is very high indeed; thus in 61 cases in which there was no opacity of the cornea, capsule left behind, or disease of the fundus, it will be found that the vision was as follows:

$$\frac{6}{3} = 4, \quad \frac{6}{3 \cdot 5} = 6, \quad \frac{6}{4} = 4, \quad \frac{6}{4 \cdot 5} = 5.$$

$$\frac{6}{5} = 4, \quad \frac{6}{6} = 33, \quad \frac{6}{8} = 2, \quad \frac{6}{9} = 3.$$

I may remark here that I find in India, owing to, I think, the better light and clearer atmosphere, the patients who come to me for examination usually read a line or two more of the Snellen's test-types than they do in England. I find

very many British soldiers read $\frac{6}{3.5}$ quite readily. This may

account to a certain extent for the excellent vision of these cases, but it is not the chief reason, which is the absence of an after-cataract, leaving a perfectly free pupil and also the low degree of astigmatism. An important question is, Does the amount of vitreous lost exercise a marked effect on the vision obtained by the patient? The figures at my disposal are too small to admit of any definite conclusion, but they indicate, as far as they go, that it does not have any marked groups of dots, which they were asked to count. Special influence. Reference to the tables shows it does not appear test-cards, with dots of various sizes, corresponding to to have any marked influence. Thus we find in five cases in

which the largest amount of vitreous is lost the vision was :--- $\frac{6}{3}, \frac{6}{5}, \frac{6}{6}, \frac{6}{6}, \text{ and } \frac{6}{9}.$ "Trace" and "Slig Taking six and "Slight" we find the vision to 6 6 6 6 5' 6' 8' 9 6 6 The number of cases is far too 3' 3.5' small to be conclusive, but they are sufficiently striking to point out the need of further investigation on this point. Thus it does not appear from these cases that the amount of vitreous lost, provided that the eye recovers from the immediate result of the operation, is the important factor in determining the ultimate vision of the patient that might be

expected. I repeat that the number of cases is too small to be conclusive, but they are sufficiently striking to call for further investigation. Those operators who have observed cases in which a large amount—i.e., more than one-third—of the vitreous has been lost will have noticed that the vision of such patients is often much worse at the time of leaving hospital than the vision of those patients in whom a smaller amount has been lost. I have had the opportunity of observing these patients in a number of cases after leaving hospital, and have come to the conclusion that the vision of these patients is eventually much better than one might expect at the time of their leaving hospital; this observation is in accordance with the above facts, and will be of interest to those who may be intending to adopt the operation of extraction in the capsule. I think it is due to the greater distortion of the cornea which results temporarily, and to the fact that the normal tension and conditions of circulation and nutrition of the eye take longer to be re-established after loss of the vitreous than when it is not lost. I have noticed this to be particularly the case in very old and feeble patients. This fact may have led ophthalmologists who have not had the opportunity of seeing the number of cases in which escape of the vitreous has occurred, at a time when the eye has had sufficient time to completely recover, to regard escape of the vitreous as more serious than this paper tends to prove it to be.

Cases in which Disease of the Fundus was Present.

In eight eyes of the 98 cases examined disease of the fundus was found to be present. It may be of use to future observers to mention these in detail. They will be found in Table E. I will proceed to make a short comment on each:-

CASE 1 .- Is one of syphilitic disease of the fundus and needs no comment.

Case 2.—Presents the ordinary history and signs of malarial optic neuritis. I have seen many cases with a similar history and fundus condition. Major Smith says it is quite common in the Punjab and my smaller experience coincides with this.

Case 3.—Is an ordinary case of disseminated choroiditis. As it was present in both eyes, and escape of the vitreous only occurred in the right eye, it cannot be attributed to escape of the vitreous fairly. To discuss the question fully as to whether the condition of the fundus was caused by the extraction of the lens in its capsule, as may be suggested by the opponents of this operation, is beyond the scope of this paper. I will only say in passing I do not think it was. Disseminated choroiditis is so commonly seen in the Jullundur clinic that I do not see any reason to connect it with the operation.

CASES 4, 5, and 6.—These were all cases in which the lens had been previously "couched" and presented the typical appearance of the condition, which always follows couching of the lens. This condition has been described fully in the medical press by Major Smith. It is interesting to note, however, that apparently in some cases at least removal of the lens does not prevent the progress of this serious condition.

CASE 7 .- Is a case of bilateral optic atrophy. Escape of the vitreous occurred in one eye only, so it could not have been the cause of the condition in one eye, and it is reasonable to assume it did not cause it in the other. It may be said that the optic atrophy was caused by the operation for extraction of cataract in the capsule, in both eyes. The disease is such a common one in the Jullundur clinic in old men that I think it is quite as reasonable to say it was unconnected with the operation as with it. This matter needs a separate investigation. It should, however, be noted here, in connexion with this and the preceding case, that Major Smith always extracts a cataract if there is any hope of improving the vision for a time and that the condition may have been present in its earliest form at the time of operation.

In Case 4 the condition may possibly have been caused by the escape of vitreous, but as the eye was operated

TABLE A .- 36 Cases, with Record of Amount of Escape of Vitreous.

I -						
Number.	Name.	Years since	Vision.	Amount of escape of vitreous.	Astig- matism.	Remarks at time of operation.
1	Khara.	5	2	Trace.	_	Iridectomy.
2	Akho.	4			_	Iridectomy. "Very nervous."
1 3	Harnam	5	4		_	Iridectomy. Lens lifted on
	Singh.			"		spoon.
1	Kara.	6	•	Slight.	_	Slight escape of vitreous. No iridectomy. He shot out lens and some vitreous on completion of incision from nervousness.
2	Bhagwani.	2	•	,,	-	Iridectomy. Lens extracted on spoon.
3	Dani.	5	1	••	-	No iridectomy.
-		· -	•	, D	'	
1 2	1	1	8	Drop.	_	Iridectomy.
3	1	1	8	"	_	••
4	Deva Ditta	2	2		l –	Lens dislocated by "rawal."
5	Jhandoo.	7	2	,,	-	Iridectomy.
6	Fatch Din.	5	6 3·5	,,	+ 0.75 D. cylinder.	Iridectomy. Very nervous
7	Achroo.	1	6		-	Iridectomy.
8	Mosaddi.	2	1		+ 0.75 D. cylinder.	
						by "rawal." Never saw well with it. Now only sees band movements.)
9	Sharo.	5	1	,,	! -	Iridectomy.
10	Atra.	1	8	"	-	Lens expelled on comple- tion of incision with drop of vitreous.
11	Kalo.	2	6 3·5	,,	_	Iridectomy. (Vision $\frac{6}{3.5}$
12	Bhagwana.	6	8	••	+ 0.75 D. cylinder.	obtained with + 9.5 D.) No iridectomy. (Vision # with + 9.0 D. Sp. + 0.75 cylinder.)
13	Ranji Das.	2	6 3·5	,,	_	Iridectomy. Cornea slightly hazy from old trachoma above.
14	Ako.	1,	9	••	+ 1.25 D. cylinder.	Iridectomy.
15	Ganda.	1	8	,,	-	Iridectomy. (Vision # with + 9.0 D. lens.)
16	Ganpat.	2	8	••	+ 0.75 D. cylinder.	Iridectomy. (Vision \$ with + 9.0 D. Sp. + 0.75 cy-linder.)
17	Daswandhi.	7	6 3·5	••	-	No iridectomy.
18	Inchri.	1	1	••	_	Iridectomy,
19	Biro.	1	1	,,	-	Iridectomy. Lens extracted on spoon. Very bad
20	Hukram.	1	6 4·5	,,	-	patient. Iridectomy.
21	Jamal Din.	6	6 4·5	••	-	No iridectomy.
22	Natha.	2				Iridectomy.
23	Gangoo.	5	2	"	+ 1·25 D.	Iridectomy. Very nervous
	Raman San.	7	9		cylinder.	patient. No iridectomy. (Vision
25	Harnam	7	6	"	_	with + 90 D. Sp. lens.) No iridectomy.
	Singh.		4.5	"		

TABLE A. -36 Cases, with Record of Amount of Recape of Vitreous - (Continued).

_	Turevus (Outeracu).									
Number.	Name.	Years since operation.	Vision.	Amount of escape of vitreous.	Astig- matism.	Remarks at time of operation.				
1	Mamon.	2	3	Some.	_	No iridectomy. Lens expelled with some vitreous on completion of incision.				
2	Rahmat Ali.	1	ş	,,	_	No iridectomy. Lens expelled on completion of incision with some vitreous.				
3 & 4	Gulaba (two eyes).	6 ms.	ş	,,	_					
5	Harnam Singh.	1	9	,,	-	Iridectomy. Lens extracted on spoon. Very bad patient.				

on five years before and as the vision was 16, when seen, it seems, taking into consideration the fact that in no other case in the series has any effect been proved to have followed escape of the vitreous, that it is quite as likely to have had another cause. On examining these cases critically it will appear that the case mentioned last, Case 4, Table E, only may be due to escape of vitreous. This condition, however, I have seen so commonly in the Jullundur clinic that I do not regard it as being due to less of vitreous. Major Smith shares this opinion. I, however, leave the truth of this opinion for other observers to prove or disprove. It may be argued that the cause of some of these conditions may, if not loss of vitreous, be due to the disturbance of the conditions of the eye caused by the extraction of the cataractous lens in the capsule. This argument, I think, can only be advanced as regards two of the cases. Optic atrophy and disseminated choroiditis are very common conditions in patients attending the Jullundur clinic, and I regard these cases as attributable to ordinary causes, but on this point also further investigation is required. We arrive therefore at the conclusion that of the series of 98 eyes examined one case of retinal degeneration may possibly be due to loss of vitreous, or to the operation of extraction of the cataractous lens in the capsule, or to a combination of the two, and that one case of optic atrophy and one disseminated choroiditis may possibly be due to extraction of the cataractous lens in the capsule. If we take the escape of vitreous occurring during this operation as being about 5 to 6 per cent. in the hands of skilled operators and allow that one case out of every 98 in which this accident happens develops subsequent disease of the fundus, we arrive at the conclusion on the foregoing facts that loss of vitreous in this operation, provided the eye recovers from its immediate effects, is not the serious complication which it at first sight appears. It is interesting to note that this is the opinion arrived at by Major Smith from a general experience of these cases, apart from any definite research in this subject, some years ago.

It is specially interesting to note that detachment of the retina, the condition so generally feared as liable to occur after escape of the vitreous, did not occur in a single case. I suggest, in conclusion, that those ophthalmologists who state that loss of vitreous is such a serious accident in cataract operations have been guided by the facts as known to them in operations other than in which the cataractous lens is extracted in its capsule. It is quite probable that the eye in these operations hampered with débris and the capsule of the lens, which apart from those cases in which definite iritis occurs, must usually cause some degree of irritation, does suffer more serious damage when loss of vitreous also occurs than does the eye which is free from any irritating material. The fact that in the eight cases in which capsule was left there was disease of the fundus is interesting, but it should be remarked that in only one case was there a large amount of capsule—i.e., Case 10, Table C—the other cases having only a small amount as Major Smith always endeavours to remove as much of it as possible. On account of having a large wound it is possible to remove most of the débris, so that the condition in these cases was not quite the same as it is in the ordinary capsulotomy operation. Having regard to the facts given here, I maintain that though the number of cases is far too small to be conclusive it is sufficiently large to make

us hesitate before we accept any conclusions formed by ophthalmologists, who do not extract cataract by Smith's operation, as to the seriousness of loss of vitreous in this operation. Further investigation will doubtless throw more light on this important subject. I repeat, however, let as be careful before we accept any dicta by any ophthalmologist, however distinguished he may be, on this important subject, unless supported by a series of cases, an account of the operation performed, especially a statement as to whether the capsule was left behind or not, and if iritis or iridocyclitis followed.

The accompanying tables show (1) number of years since the operation; (2) vision; (3) amount of escape of vitreous; (4) astigmatism; (5) remarks noted on case sheet at time of operation; and (6) notes on points of interest in brackets in last column.

TABLE B.—25 Cases, with Amount of Escape of Vitreous
Unknown.

_						
Number.	Name.	Years after operation.	Vision.	Amount of escape of vitreous.	Astig- matism.	Remarks at time of operation.
	Hira Singh.		6 4·5	Un- known.	+ 0.75 D. cylinder.	-
2	Miran Bux.	7,	\$	••	_	_
3	Ghulam Haider.	7	\$.,	+ 0.75 D. cylinder.	_
4	Roha.	43	ŧ	••	+ 1.25 D. cylinder.	_
5	Mohammed Din.	1	*	,,	-	-
6	Roda.	6	1	••		_
7		2	1	,,	_	_
8	2.2.2.	54	8	,,	_	
9	Devi Ditta.	3	•	••	-	
10	•	5	8	,,	-	_
11	Badh Singh.	9	8	٠,		_
12	Kaka Shah.	6	6 3·5	.,	+ 0.75	_
13	Iddoo.	6	8	,,	+ 0.2	
14	Shah Din.	74	ê	,,	+ 0.5 D. cylinder.	_
15	Mehtab Singh.	51	ŧ	,,	+ 0.75 D. cylinder.	_
16	Mamon.	7	8	, ,	+ 0.5 D.	
17	Dania.	3	8	,,	! –	_
18	Hakko.	4	ş	٠,	_	_
19	Mammond.	_	2	,,	-	_
20	1	2	8	٠.	-	_
21	i	31	Ą	٠.	_	_
22		4	-	,,	-	_
23	:	3½	1	,,	_	_
24	i .	6 ⁷	3	٠٠,	_	_
25	Shadi.	3	8	,,	-	-

TABLE C. -10 Cases (9 Patients, I double) in which Openity
of the Cornea was Present.

		• • • • • • • • • • • • • • • • • • • •			
Number.	Name.	Years since operation.	Vision.	Amount of escape of vitreous.	Remarks at titing of operation. (Notes in brackets.)
1	Nathu.	7	8	Drop.	Iridectomy.
2	Sabho Davia.	5	•	,,	•••
3	Hurkan.	4	165	,,	•••
4 & 5	Gulaba.	6 ms.	r ⁶ r	Some.	No iridectous.
6	Harkan.	5	Y ⁶ 5		_
7	Suchet Singh.	1	16	Drop.	Lens extracted on spoon.
8	Jhandoo.	6	1,2	••	Iridectomy. — Nervous patient.
9	Hakam Singh.	1	18	,,	Iridectomy.
10	Ramai Dai.	6 ms.	*	,1	(Cornea opacity stry marked, caused by small-pox.)

TABLE D.—8 Cases in which the Capsule of the Lons was Left Behind, owing to Bursting at the Time of Operation.

Numper.	Name.	Years since operation.	Viston.	Amount of escape of vitreous. (6 cases only.)	Remarks at time of operation. (Notes in brackets.)					
1	Ako.	6 ms.	1	_	(Capsule needled pre- viously.)					
2	Ahmed Khan.	14	8	Drop.	No iridectomy.					
3	Nibala.	41		_						
4	Natha.	5	118	Drop.	_					
5	Ahmed.	6	*	,,	Drop of vitreous taken out of right eye on account of tension.					
€	Diwan Singh.	2	16	,,	Iridectomy.					
7	Gaunsa.	6	20	,,	No iridectomy.					
8	Shib Dial.	1	t	Some.	Iridectomy. (Dense after-cataract seen.)					

^{*} Not noted by error.

TABLE E.—Detailed Notes on 8 Cases (7 Patients, 1 Double) with Diseased Condition of the Fundus.

Case 1.—Name, B—. Operated on one and a half years ago.

"Drop" of escape of vitreous in both eyes—both extracted on spoon.

Vision = 4. States that he had very poor vision in both eyes before cateract developed. Had syphilis. On ophthalmoscopic examination signs of old neuro-re initis.

Case 2.—Name. Para Singh. Operated on five years ago. Vision Can only count fingers. Sight was all right for two years after operation. Then had high fever with delirium. Pupillary reaction very singgish. Disc pale. Retina strophied, probably caused by malarial orest neuritis.

Can only count fingers. Sight was all right for two years after operation. Then had high fever with delirium. Pupiliary reaction very singgish. Disc pale. Retina atrophied, probably caused by malarial optic neuritis.

Case 3.—Name, Utman Dai. Operated on one year ago. Vision: Can only see hand movements. Both lenses well extracted in the capsule with a "drop" of escape in the right. Disseminated choroiditis seen in both eyes on ophthalmosophic examination.

Case 4.—Name, Edoo. Operated on five years ago. Trace of escape of vitreous in right eye. Left eye lost previously from trachoma. Vision = 4. Very stupid old man. Could give no clear history of his condition. Retina presents appearance of retinitis pigmentosa sine pigmento in an early stage.

Case 5.—Name, Ram Singh. Operated on one and a half years ago. The right lens is noted as having been previously dislocated by the "rawal" or lens coucher at the time of operation. It was noted also as having been expelled on completion of the incision with a "drop" of vitreous. Note made "bad patient." Vision = f. On ophthalmoscopic examination the typical condition of retinitis pigmentosa sine pigmento, which always follows couching of the lens.

Case 6.—Name, Hako. Operated on two years ago. Vision: Ntl. Drop of escape in the left eye. Lens noted as dislocated at the time of operation. The same fundus condition as in Case 5, but more advanced. Case 7.—Name, Khuda Bux. Age 60 years. Operated on four and a half years ago. Bacape of vitreous in one eye only, amount not noted. Both lens extracted in the capsule. Primary optic atrophy in both eyes.

A REPORT OF SOME CASES OF VENOUS ANÆSTHESIA.

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Professor Bier, in April, 1908, read a paper at the German Surgical Congress entitled "On a New Method of Producing Ansesthesia in the Extremities." The procedure is applicable to either extremity, any part of which can be shut off from the general vascular system. The method consists essentially in the introduction of an anæsthetising fluid into one of the superficial veins of a given area of a limb, which area has previously been depleted of blood and isolated by tourniquets. The whole of the tissues of the isolated area ase in this way infiltrated by exudation of the medium from the capillaries of that area. The cases recorded by Professor Bier were chiefly operations on the upper extremity, only one case of amputation of the leg having been performed. We have employed the method for nine operations, seven of these being major amputations and most of them cases in which general ansesthesia was considered inadvisable.

is then firmly bound round the limb, from the periphery upwards, as high as the upper limit of the operation are Above this, and in contact with its last turn, is placed another rubber bandage, sufficiently tight to check the arterial circulation. The bandage covering the distal part of the limb is now removed, and a third bandage is wound firmly round the extremity at the lower limit of the operation area. This bandage must be tight enough to prevent diffusion of the injected fluid into the distal part of the limb. After a preliminary skin infiltration an incision a couple of inches in length is made across the line of the vein chosen in the leg, usually the internal saphenous. (This incision may be made at any convenient level, though Professor Bier advises that the vein be picked up in the upper part of the operation area.) The vein is isolated and a cannula tied into it firmly, as for an intravenous infusion. The cannula should be directed centripetally if the vein be opened low down in the operation area. if the vein be opened low down in the operation area, centrifugally if opened high up. Any small vessels that may have been divided are now secured to prevent leakage, and a good syringe of about 100 cubic centimetres capacity is attached by a short piece of pressure tubing to the cannula. The fluid is then injected gradually, a varying but considerable amount of pressure being required. As infiltration able amount of pressure being required. As infiltration occurs the area swells and turns dusky white in colour. Complete anæsthesia of the isolated area appears in from five to 15 minutes from the commencement of the injection. It may be accelerated by gentle massage of the part to facilitate diffusion of the fluid, or, if necessary, by the injection of more fluid. When anæsthesia is complete the cannula is removed and the vein is tied off. The skin incision, unless it falls into line with the operation incision, is sutured, and operative measures are then proceeded with.

This anæsthesia of the infiltrated area Bier terms "direct anæsthesia." After 15 to 30 minutes, however, from the time of injection the rest of the limb below the isolated area also becomes anæsthetic. This he terms "indirect anæsthesia." It is due to the establishment of a "block" in the nerve trunks as they pass through the infiltrated area. Indirect anæsthesia, however, seems to be of limited practical value, on account of the uncertainty of the time required for its completion. At the termination of the operation the upper bandage is slowly removed in order that vessels divided during the operation may be secured. If more than ten minutes be required for suturing the wound this bandage should be replaced, as sensation returns in the infiltrated area in eight to ten minutes after its circulation is reestablished.

Should an infective focus exist in the lower part of the limb to be operated upon it would obviously be inadvisable to bandage the whole extremity. In such a case the limb is first elevated, and then the first Esmarch bandage is placed entirely above the septic focus, extending centripetally from the lower level of the operation area. The hæmostatic bandage is next applied at the upper limit of the operation area, and, before removing the first Esmarch bandage, a third bandage is applied at the lower limit of the operation area. If the latter proceeding be omitted blood will regurgitate from below into the area to be infiltrated, and imperfect anæsthesia will result. It is of the utmost importance that the vessels in the operation area be completely emptied before the injection be commenced. With regard to the incision for finding a vein, it is obviously better in amputations either to make this in the lower part of the isolated area, or to make it in such a position that it will fall into line with the amputation incision.

A limit to the extent of the tissues which can be infiltrated is set by the undesirability of injecting more than a certain quantity of the ansesthetising fluid; 200 cubic centimetres of a 0.5 per cent. novocaine solution (which may be regarded as a maximum dose) should suffice to anæsthetise the field for most set operations; the area cannot conveniently be increased once operative procedures have commenced. As anæsthetic Bier recommends "novocaine" on account of its relative non-toxicity. A 0.5 per cent. solution in normal saline gives reliable results. We have used a 0.25 per cent. solution successfully in one case, though anæsthesia was somewhat more slowly produced. The amount injected varies with the size of the limb and the extent of the area to be infiltrated. From 50 to 75 cubic The details of the technique are as follows: the skin is centimetres suffices for a moderate-sized elbow, while 150 prepared in the usual manner; a sterilised Esmarch's bandage cubic centimetres are required for a knee area. More can

[†] Counts fingers only at 2 yards.

safely be employed in amputation cases, as only a small amount will subsequently reach the general circulation.

-A male, aged 60 years, was admitted to hospital on Jan. 27th. 1909, suffering from callous ulcer of 20 years' duration. It almost completely encircled the right leg in its lower half. The ulcer was foul, the fibula was in part bare, and the limb was ordenatous as far as the kneeinto the patient was suffering from profound anemia and toxemia. The vessels were much thickened, and the heart was weak and irregular. There was no albuminuria or glycosuria. On Feb. 2nd the leg was amputated at the seat of election by the above method of anæsthesia. 120 cubic centimetres of 0.5 per cent. novocaine were used; absolute anæsthesia was obtained; there was no evidence of shock, the pulse-rate before, and after amputation being. before and after amputation being 83. The after-history was uneventful; suppuration occurred, however, so stitches were removed and
the wound was allowed to heal by granulation. No necrosis of bone
occurred, and the wound was soundly healed by April 19th, on which
day the patient, having been provided with a knee-rest, left the
hospital day the pa hospital. CASE 2.—

hospital.

CASE 2.—A female, aged 45 years, was admitted to hospital on Jan. 26th, 1909, with moist gangrene of the third toe of the left foot. It had commenced in a slight injury sustained four months previously. On admission there was cellulitis extending on to the foot. Both legs were ordematous. There were no sensory changes nor vascular disease. The urine contained a trace of albunin; no sugar was found while the patient was in the hospital, though it was stated to have been present in the out-patient room. Amputation of the toe at the metatarsophalangeal joint was performed on Feb. 4th by the above method of aneathesia. 50 cubic centimetres of a 0.5 per cent. solution of novocaine was used. The operation was commenced ten minutes after infiltration; the patient felt the skin incision, although it did not evoke pain. Owing to the condition of the tissues the wound was left open. Vomiting occurred once 12 hours after the operation; apart from this owing to the condition of the tissues the wound was let open. Vomiting occurred once 12 hours after the operation; apart from this recovery was uneventful, and the patient was discharged on Feb. 22nd, the wound having completely healed. The incompleteness of the anæsthesia in this case confirms Professor Bier's observation that the method is uncertain when applied to the hand or the foot; it probably results from the difficulty in completely depleting these areas of bood.

CASE 3.—A male, aged 76 years, was admitted to hospital on Feb. 1st, 1899, for senile gangrene of the left foot, which had commenced a fortnight before. The patient had suffered from polyuria and wasting for two years, and had had a slight right-sided hemiplegia I2 months previously. On admission the first, third, and fourth toes of the left foot night before. The patient has suffered from polyuria and washing for two years, and had a slight right-sided hemiplegia 12 months previously. On admission the first, third, and fourth toes of the left foot were in a state of dry gangrene; pulsation could be felt in the popliteal and posterior tibial vessels of this side but not in the anterior tibial. The urine averaged 75 ounces daily and contained albumin and sugar. On a modified diet the daily excretion of sugar dropped from 1400 to 700 grains. In spite of rest, &c., the gangrenous process began to spread and the patient was having much pain, so on Feb. 6th circular amputation was performed at the lower third of the thigh, venues anæsthesia being used. The septic condition of the foot made it necessary to apply the Esmarch bandage entirely above the gangrenous area. 100 cubic centimetres of a 0.5 per cent. solution of novocaine were injected. The pulse rose from 96 to 122; the patient sweated and womited once. From its appearance some circulation was still present in the operation area, and the rise in the pulse-rate was apparently due to the fact that some novocaine had reached the general circulation. The tourniquet was therefore reapplied, and, as anesthesia was as yet imperfect, a further 60 cubic centimetres of the solution were injected. The patient now complained of much pain in his toes, so he was given chloroform inhalation (one drachm in all being used) for the skin incision. Consciousness rapidly returned, but there was no further rise of the Consciousness rapidly returned, but there was no further rise of the pulse-rate, and no evidence that he experienced pain during the division of nerves or bone. Unfortunately the patient's heart began to fail on Feb. 10th and he died on the 14th.

of nerves or bone. Unfortunately the patient's heart began to fail on Feb. 10th and he died on the 14th.

Necropsy.—The lungs were congested and ordematous. The heart was hypertrophied; the myocardium was unduly soft, and there were atheromatous patches on the mitral valve. The aorta was riddled with atheromatous patches, and all the larger and medium-sized vessels were rigid and calcified. The head of the pancreas was unduly hard. Microscopy showed fatty infiltration; the islands of Langerhans were scarce. The kidneys were moderately granular. The brain showed no gross lesion to account for the old hemiplegia, but the lumen of the left middle cerebral artery was much diminished. Examination of the amputation stump showed no attempt at repair. The artery was rigid and calcareous, and no clot was present above the ligature.

In this case the rigidity of the artery accounts for the difficulty experienced in emptying the operation area of blood. In the production of the pain there were probably two factors. Firstly, owing to the septic coudition of the foot, the Esmarch bandage had to be applied entirely above it; the result of this was venous congestion of the foot. Secondly, owing to the rigid condition of the vessels, more pressure than usual had to be applied to produce harmostasis.

CASE 4.—A male, aged 43 years, was admitted to hospital on Jan. 11th, 1909, for chronic synovitis of the right knee of two years' duration. The skiagram showed no disease of bone. On Feb. 15th the joint was explored by Mr. C. A. Ballance, venous anasthesia being used. 100 cubic centimetres of a 0.5 per cent. novocalne solution were injected into the internal saphenous vein, perfect ansethesia being obtained in five minutes. The synovial membrane of the subcrureal pouch, and that on either side of the patella, was found to be studded with tuberculous nodules (verified by the microscope). The diseased synovial membrane was therefore removed. On account of considerable oozing into the joint cavity the latter was drained for 48 be studded with tuberculous nodules (verified by the microscope). The diseased synovial membrane was therefore removed. On account of considerable oozing into the joint cavity the latter was drained for 48 hours. The pulse-rate at the beginning of the operation was 90. Two hours later it increased to 100 and became irregular, but had again dropped to 90 in 12 hours. In 48 hours the pulse, though regular, was weak. Subsequently some superficial suppuration occurred. The wound had healed by March 23rd, on which day the patient, having been provided with a leather splint, left the hospital.

CASE 5.—A male, aged 44 years, was admitted to hospital on Feb. 14th, 1909, with an ununited fracture of the tibia and the fibula. The patient had sustained a compound fracture is months previously.

Feb. 14th, 1909, with an ununited fracture of the tibia and the fibula. The patient had sustained a compound fracture six months previously; a portion of the tibia between three and four inches in length had necrosed and come away. The patient was an alcoholic subject; there was no arrempt at new bone formation; the foot was ordematous and paticul, and there was a large pressure sore on the heel. Amputation below the seat of election was performed on Feb. 20th, 1909, venous

angsthesis being used. 120 cubic centimetres of 0.5 per cent. novocaine

anæsthesia being used. 120 cubic centimetres of 0.5 per cent. novocaine solution were injected into the internal saphenous vein; the tourniquet caused some slight discomfort which rapidly disappeared as anæsthesia became established. There was no alteration in the pulse-rate during the operation, but in this case some cardiac irregularity appeared on the fourth day. The wound bealed per primam, the patient was provided with a knee-rest, and left the hospital on March 12th.

CASE 6.—A female, aged 39 years, was admitted to hospital on Feb. 6th, 1909, for diabetic gangrene of the left foot of six weeks duration. The foot was red, ordematous, and covered by numerous ulcers and bulke; some of the metatarso-phalangeal joints were disorganised and the corresponding metatarsal bones and phalanges were exposed. Before admission the foot had been treated with hot carbolic dressings; cellulitis had spread to the lower third of the leg, and the skin up to this level was red, ordematous, and covered with vesicles; the upper limit of the inflammation was sharply defined, and corresponded to the level of the dressing. The patient could move her toes, but sensation was impaired, and there was considerable pain. The vessels were thickened beyond her years, but pulsation could be felt in the anterior and posterior tibial arterics. The knee-jerks were absent; otherwise there were no symptoms of disease of the central nervous system. The urine, which averaged 50 onnees per diem, contained albumin and sugar (1800 grains daily). On standing it became dark green, and the distillate gave the carbolic acid tests. The patient was placed upon a modified diet; the foot was incised on several occasions under local anæsthesia and treated with baths and dry dressings. The cellulitis subsided, the general condition became much better, the carboluria rapidly obtained by the above method; no discomfort was experienced; the pulse-rate at the beginning of the operation was 140, at the end 120. (Previous to operation her pulse-rate varied between

Pulsation could be felt in the anterior but not in the posterior tibial artery. The patient had polyuria and the urine contained much albumin and sugar (average daily excretion 3000 grains). The temperature reached 101° F., the gangrenous process continued to spread, and the patient was rapidly going down-hill, so amputation at the lower third of the thigh was performed on March 25rd. Venous anæsthesia was used (in this case 200 cubic centimetres of a 0.25 per cent. solution of novocaine); the patient was highly nervous, so a prelliminary injection of a quarter of a grain of morphia was given. Owing to the condition of the tissues the Esmarch's bandage was applied entirely above the septic area; this produced pain in the foot, and chloroform inhalstion became necessary until indirect anæsthesia was established. The patient was perfectly conscious, however, for the division of the nerve trunks and bone, and experienced no discomfort at this period. The pulse-rate before operation was 88, at the end 90. Unfortunately, the heart began to fail two days later and the patient died on March 28th. March 28th.

March 28th.

Necropsy.—The heart was soft, large, and dilated (especially the right side) without much hypertrophy being present. The kidneys were large and pale. The amputation wound showed no attempt at

CASE 8.—A male, aged 58 years, was admitted to hospital for gangrene of the right foot, which started a month before admission. During the previous eight months he had been under treatment for diabetes in the out-patient department; he had also attended an eye hospital, where he was told he had "diabetic hæmorrhages in his disc." On admission was told he had "diabetic hæmorrhages in his disc." On admission there were redness and ordema extending on to the dorsum and the sole of the involved foot. There was practically no pain; pulsation could be felt in both anterior and posterior tibial arteries. There was no lesion of the heart, nor did his vessels appear to be thickened beyond his years. The knee-jerk on the right side was obtained with difficulty; on the left side it was absent. The urine, which averaged 65 ounces daily, contained albumin and sugar; the daily excretion of the latter was 1100 grains. With rest and a modified diet the cellulitis subsided and the daily excretion of sugar dropped to 90 grains. For early a week the patient continued to improve, but then the gangrenous process began to spread and he suffered much pain. On April 7th amputation was performed by venous anæsthesis, 150 cubic centimetres of 0.5 per cent. novocaine solution being used. The patient's nutrition and vascular system seemed so good that it was decided to amputate at the seat of election. Good anæsthesis was obtained, but he had a twinge of pain as the anterior tibial nerve was decided to amputate at the seat of election. Good ancethesis was obtained, but he had a twinge of pain as the anterior tibial nerve was divided. There were no alteration in the pulse-rate and no shock. Unfortunately, hemorrhage from the stump occurred on the sixth day. The wound was opened up and the bleeding posterior tibial artery was secured. There was no attempt at repair and the flaps had commenced to slough. The patient did not recover sufficiently to make re-amputation possible; he gradually sank and died three days later.

Necropsy. -The aorta showed patches of atheroma. The heart was

Necropsy.—The sorts showed patches of atheroms. The heart was slightly enlarged and the mitral and aortic valves showed early scierotic changes. The popliteal artery on the amputated side was practically normal; the posterior tiblal artery was calcareous and rigid. The kidneys were large and pale. The pancreas showed neither macroscopic nor microscopic changes.

CASE 9.—A female, aged 55 years, had been under private treatment for diabetic gangrene of her left foot for three months. On admission to hespital on July 3rd, 1909, the anterior part of this foot was foul and gangrenous. The general condition was good. The cardio-vascular system presented no gross changes. Pulsation could the felt in both the anterior and posterior tiblal arteries of the diseased side. The kneeligeks were present. There was polyuria, and the specimen contained much albumin. The daily excretion of sugar was 2420 grains; on a

modified diet this had dropped at the end of a fortnight to 1000 grains. The gangrene now began to spread along the inner aspect of the foot, and the patient was having much pain. Amputation through the lower third of the thigh was therefore performed on July 18th under venous anæsthesia. A preliminary injection of a quarter of a grain of morphia was given, as the bandage had to be applied entirely above the gangrenous area. The congestion of the foot resulting from the latter procedure caused considerable pain, and the spalse-rate rose from 92 to 104. A further injection of morphia was therefore given. Good anæsthesia was soon obtained, 150 cubic centimetres of a 0.5 per cent. solution of novocaine being used. The patient, however, suddenly lapsed into coma before the completion of the operation. She was infused with sodium bicarbonate, &c., but remained comatose until death, which occurred two days later.

Necropsy.—The kidneys were large and pale; the sorta was atheromatous. The pancreas and other organs showed no gross lesion.

COMMENTS.

If the technique be carefully carried out absolute anæsthesia will in most cases be readily obtained. Professor Bier reports two cases where analgesia only was present; this, however, was of such a character that the operation could be completed without resort to general narcosis. In our own cases the local anæsthesia has been perfect except in one case involving the toes only (Case 2). Probably the cause here was failure to empty the part of blood. In this instance, however, the analgesia was sufficient for the completion of the operation. In three cases in which the Esmarch bandage had to be applied above an infective focus, pain in the foot was evoked by the resulting venous congestion. Thus in Cases 3 and 7 a small amount of chloroform was necessary for the early stage of the operation. In Case 9 an injection In all these cases the pain passed off sthesia became established. When the of morphia sufficed. when "indirect" anæsthesia became established. Esmarch bandage can be applied to the whole of the distal portion of the limb it can be applied sufficiently tightly without causing discomfort, except perhaps in those cases where the arteries are calcareous and rigid. Failure of the upper bandage to secure hæmostasis (and as a result imperfect anæsthesia) may occur in patients whose arteries are rigid. The same difficulty may arise where the thick part of the thigh is the seat of operation; thus in one case we had to employ the ordinary tubular tourniquet, a proceeding associated with considerable discomfort.

The danger of toxic symptoms from novocaine will only arise at the moment when the upper bandage is loosened, or when perfect hæmostasis has not been obtained. In our own amputations the amount of novocaine gaining access to the general circulation has not been sufficient to alter the pulserate, except in the case of an old man (Case 3) whose arteries were extremely rigid. Obviously, toxic symptoms are less likely to occur in amputation cases (where the solution has free egress from the divided tissues) than in more limited operations. In the former cases drainage of the wound for 24 hours is advisable. Professor Bier has recorded one case in which toxic symptoms arose. 150 cubic centimetres of a 0.25 per cent. novocaine solution had been injected; 15 minutes after removal of the bandage the subject, a woman, aged 60 years, vomited, and her pulse became small and quick. She rapidly recovered, however, and had no further symptoms. In a good many of our cases some irregularity and increase in the rate of the pulse were noted on the second or the third day. This late and transitory disturbance of the cardiac system we have also seen in some cases where only 10-20 cubic centimetres of a 0.5 per cent. novocaine solution had been used for producing anæsthesia by perineural injection. Professor Bier has recommended that at the completion of the operation the upper bandage should be very gradually relaxed, thus preventing too rapid diffusion of the novocaine. He has also suggested that normal saline solution should be run through the veins in the isolated area. might be urged as an objection to this form of anæsthesia that the technique requires too much time. In a thin subject where the vein is readily found this should not take more than 15 minutes. In fat subjects, however, it is, for this reason, inferior to spinal anæsthesia for operations on the lower limb. In the case of the upper limb, when general anæsthesia is contraindicated, it seems to us to be a method of the greatest value.

For permission to publish these cases we beg to acknowledge our indebtedness to Mr. H. H. Clutton, Mr. W. H. Battle, Mr. C. A. Ballance, Mr. H. Betham Robinson, and Mr. E. M. Corner, under whose care the patients were admitted to hospital.

Reference.—Archiv für Klinische Chirurgie, Band lxxxvi., 4, "Uber nen neuen Weg Localanästhesie an den Gliedmassen zu erzeugen."

AN EPIDEMIC OF ENTERIC FEVER, PROBABLY DUE TO INFECTION BY A "CARRIER."

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THERE is grave doubt whether it can ever be proved beyond all cavil that any case of enteric fever has been infected by a carrier, for the difficulties in the way of absolutely excluding every other possible source are practically insurmountable. We now know that, whether or no the bacillus typhosus ever actually spores, certain individuals do occur which have such special powers of resistance and survival for lengthened periods, that they are as dangerously long-lived as sporing bacilli; infection may therefore lurk in unsuspected places long after its possibility has been lost sight of. On the other hand, it is almost equally difficult to prove that a probable carrier has actually infected any given case; the destructive critic could find weaknesses in any such case yet reported or likely to be reported. The following account of a slight epidemic at Cheddleton Asylum, which commenced in September, 1908, and lasted until March, 1909, justifies, in my opinion, faith in the carrier theory as an explanation. Owing to specially favourable circumstances, exclusion of other sources is almost completely possible, whilst there was on the scene a carrier who was capable of causing the mischief.

The asylum, opened in 1899, originally contained 16 wards; eight additional wards were completed and opened in April, 1909. It was in one of these new wards, F 19, that the epidemic began. From first to last there were 12 cases, all females. Enteric fever was not diagnosed for a few days as there had been no case here for six years. During these few days the first three patients, Fa, Fb, and Fc, were not isolated, and one of them, Fa, who was nursed in the sick room F11, was in close contact with a working patient, Fd, who helped to remove slops, &c. Fa began to be ill on Sept. 26th, Fb and Fc on the 29th; Fd was attacked on Oct. 12th, Fe on Nov. 3rd, Ff on the 6th, Fg on the 15th, Fh on the 26th, Fi on the 27th, Fk on Jan. 12th, Fl on Feb. 3rd, and Fm on March 9th.

Since the last-mentioned date up to that of writing, Oct. 1st, there has been no case resembling enteric fever, although in several instances of slight fever a Widal test has been applied with negative results. A positive reaction had been obtained in all the 12 cases noted above, with the exception of that of Fi, who died on the tenth day of illness after perforation. Nine of the 12 cases occurred in ward F 19, the exceptions being Fd, Ff, and Fm. Fd has already been accounted for; F f was a refractory patient in ward F 14, who was dirty in habits and who required attention at night, this being supplied by a relief night nurse, somewhat inexperienced, who also attended to similar cases in F 19. Assuming for the moment that there was a carrier in F 19, and that she was a patient of dirty habits who required attention at night, the connexion is obvious. As regards F m, there is no really satisfactory explanation. She lived in ward F 15, which is in the same block as F 14, and, being at times refractory, was at such times sent for short periods to F 14, and was so sent on several occasions about the time when she became infected. It can only be suggested that she came in contact with some infective matter which had escaped sterilisation when the ward was disinfected after Ff sickened. As Fm was a restless patient, with wellknown propensities for picking up and hoarding rubbish, this is a possible, if not a convincing, explanation.

It should be mentioned that all cases were, as soon as diagnosed, removed to the asylum isolation hospital, and that thorough disinfection was carried out after each case occurred. The procedure was to wash floors, walls, fixtures, furniture, &c., with either chloros or formaldehyde solution, 1 per cent., according to the nature of the article to be disinfected, and to follow this up by spraying with formaldehyde solution, finishing up by aerial disinfection with gaseous formaldehyde, using a quantity of formalin calculated to give 0 :25 per cent. of HCOH in the air.

It is clear that infection commenced in ward F19, the inmates of which are mostly infirm old women, and which

was, ipse facto, less open to typhoid infection than any of the other female wards. The milk, food, and water-supply were the common supply of the rest of the asylum; nevertheless, samples of water from all the ward taps were submitted to Professor R. F. C. Leith of Birmingham University for examination, with negative results. No food, luxuries, or any other articles were brought into the asylum by the friends of Fa, Fb, and Fc within the month preceding the beginning of the epidemic. Infection by flies may be excluded, as the asylum is singularly free from them. Its situation is windy and exposed, the trees are not yet grown, and the soil is exceptionally quick-drying. In the day-rooms, dormitories, corridors, and subways it is often impossible, even in summer, to see a single fly; and during September, 1908, and the succeeding months there was no rise above the normal number.

The county medical officer made an exhaustive investigation, and came to the conclusion that infection by any of the above-mentioned sources might be excluded, but suggested that there might be a carrier in the infected ward, and advised that all patients and staff who had been in the ward since its opening should be subjected to the Widal test. This was done; on Feb. 8th Professor Leith reported that in every case but one the result was negative. The exception was M. B., an old woman, aged 75 years, her blood giving a positive reaction. In consequence of this report M. B. was thereafter looked upon as a possible source of infection, and was kept at the isolation hospital until her death on April 23rd. In the interim samples of her urine were sent to Professor Leith, but he found no typhoid bacilli therein. On post-mortem examination no trace of recent disease was found in the intestines. The mesenteric glands were normal with the exception of a few, which were almost cartilaginous in consistency; there were also evidences in the lungs and elsewhere of obsolescent tubercle. The spleen was exceptionally small, only weighing 76 grammes, and was quite normal. The gall-bladder was dissected out with due care and was found to contain two small black stones and a small amount of inspissated bile. The walls were contracted and thickened, but there was no naked-eye evidence of catarrh. The cause of death was senile decay, the aorta and the arteries and veins generally being markedly atheromatons. The gall-bladder and its contents were sent to Professor Leith, and on May 5th he reported: "The gall-stones did not show the presence of bacillus typhosus; but the gall-bladder, besides containing the bacillus coli and other germs, undoubtedly contained the bacillus typhosus. From the rich bacterial content of the gall-bladder we have isolated a bacillus which gives all the reactions of the bacillus typhosus, including agglutination in dilutions of 1 in 100 with a known anti-typhoid serum.
M.B. was an undoubted typhoid carrier."

As regards the known previous history of the patient, one of her daughters states that six years ago she had an "apoplectic fit," but that, after some weeks in bed, she showed no signs of paralysis on getting about again. This was her only illness so far as is known during the past 20 years. She was admitted to the asylum on April 17th, 1908, and transferred to F 19 on May 6th, remaining there until removed to the isolation hospital on Feb. 8th. She was, when admitted, in fair health considering her advanced age, her mental condition being one of senile dementia. She deteriorated steadily physically until her death. She was a very troublesome patient, restless and never still during the day-time, dirty in habits and always requiring attention at night.

During the anxious period that followed recognition of the fact that enteric fever had broken out all patients in the infected ward were, of course, kept continuously in bed and temperatures recorded. M. B.'s temperature was never at any time above normal. If, therefore, she contracted enteric fever in the asylum at some period prior to Feb. 8th, 1909, when her blood gave the Widal reaction, she must have been an apyretic case without a single symptom. The inherent probability is infinitely greater that she had suffered from a mild attack of the disease at some antecedent period, without its being recognised or treated. This point, however, though of great importance to the asylum, is immaterial to the larger issue. What is beyond all question is that this old woman of 75, who had had an attack of enteric fever at some period not less than 11 weeks before her death, was at death capable of unlimited infection. The bacillus typhosus was vigorous and well established in her gall-bladder, and

there is no reason to doubt that, had the patient survived, infectivity would have continued indefinitely.

It is highly probable that in a fair percentage of recovered cases of enteric fever the bacillus typhosus exists in the gall-bladder and is capable of more or less intermittent mischief for months or years to come. Has not the carrier been responsible for most or all of the mysterious epidemics or isolated cases which all know so well, and which have caused such labours of the parturient mountain of worry with the resultant ridiculous mousebirth of explanatory theory?

How, then, to deal with the problem of preventing infection? Shall the surgeon be called in to explore the gall-bladder after every case of enteric fever, and, with the aid of the bacteriologist, to determine whether infection persists? or shall the attempt be made to have the stools of all enteric patients sterilised for the remainder of their lives? The administration of intestinal disinfectants sine die is, of course, neither desirable nor effective, nor does one suggest that either of the other procedures is really practical politics. Perhaps some harmless yet efficient bactericide may yet be built up which may safely be injected into the gall-bladder in sufficient quantity, but the time is not yet.

THYROIDECTOMY AND A THEORY OF CANCER CAUSATION.

BY WILLIAM STUART-LOW, F.R.C.S. Eng., SURGEON CETTRAL LONDON THROAT, NOSE, AND KAR HOSPITAL, AND LECTURER ON RHINOLOGY AND OTOLOGY, MEDICAL GRADUATES COLLREE.

THERE is still much in the normal action, the physiology, of the thyroid gland that is hidden from us. It is certain, however, that sufficiently impaired function results in the tissues, so to speak, becoming water-logged with mucin-the establishment of myxœdema. I have never seen cancer and myxcedema at the same time in the same patient, and it is quite possible that the existence of excess of mucin in the tissues may act as an insurance against the origin of carcinoma and sarcoma. The antithesis of thyroid sluggishness and over-abundance of mucin in the system would be thyroid over-work, and consequent diminution in the normal quantity of tissue and surface mucin. This is the state of the system that I believe to have detected in malignant disease; and it constitutes in its earlier stages, in my opinion, the true precancerous condition-viz., hypomyxia, both of tissue and surface mucin, as enunciated in "Mucous Membranes, Normal and Abnormal, including Mucin and Malignancy" (Baillière, Tindall, and Cox), and "Mucin and Malignancy: Facts and Theories" (THE LANCET, Sept. 20th, 1902, p. 807). The smaller thyroid producing but little secretion is the common condition in over-fed people with much subcutaneous fat. When this thyroid inaction passes to an advanced degree atrophy occurs, with the result that myxcedema supervenes. It is, on the other hand, a remarkable fact and well recognised that in the bodies of those whose death has been due to wasting diseases, such as tuberculosis and carcinoma, the thyroid is found to be large, showing evidence of much secretion having been thrown into the system. This everaction may have gone on for months and have given rise to the great emaciation seen in these subjects. Another point, of which I have never been able to get or give a satisfactory explanation, is that there exists in most cases of carcinoma a quickening of the pulse. May this not be another evidence of increased thyroid action? The obvious rapidity with which wounds in the cancerous heal is very striking and indicates increased metabolism and tissue change, and may, perhaps, be explained by the increased functional activity of the thyroid.

For some time, after years of careful observation of many cases of carcinoma and sarooma in all stages, I have come to the conclusion, looking on the thyroid gland as the fly-wheel of body growth and metabolism, that this organ is very liable to over-work, that the body metabolism in this manner is liable to become over-driven, and that so the thyroid may be a causation factor in the origin and continuation of malignant disease. Holding these views, I have long had it in contemplation to perform more or less complete excision of the thyroid gland in inoperable carcinoma as the best means of eliminating or ameliorating a

disturbing factor in the diseased organism of the carcino-This having now been carried out in three instances the following are the facts about these cases.

CASE 1.—An elderly man, aged 63 years, went to the Central London Throat, Nose, and Ear Hospital because of difficulty and pain on swallowing and on account of a large swelling on the left side of the neck at the angle of the jaw. After careful examination by my colleagues the case was pronounced to be epithelioms of the base of the left side of the tongue and quite beyond operation. 14 days later Dr. W. F. Colclough of Sidmouth sent him to consult me privately. A large mass of hard glands was found below the left angle of the jaw, and a carcinomatous ulcer of the size of a penny very far back on the left part of the base of the tongue. This had already begun to spread on to the palato-glossal fold and to a small extent to the side of the adjacent floor of the mouth. There were well-marked induration and considerable pain shooting into the ear and upwards and backwards to the occipital region. The history was that only during the last month had he had pain to speak of, and that only on seeing Dr. Colclough had he been told of the grave nature of the malady. I doubted the likelihood of getting away all the growth, but the patient pressed me so hard to do something because of the pain on attempting to eat and at night that I consented. On Dec. 2nd, 1908, the entire left half of the tongue was removed right back to the hyoid bone, together with the palato-glossal pillar and adjacent affected part of the floor of the mouth; and afterwards the thermo-cautery was freely applied. Laryngotomy was first performed and the cheek split to give free access; the mass of cervical glands was also excised. The patient stood the operation well and was able to return to Devonshire on the eighth day. For six weeks he did very well and was able to eat and speak wonderfully, but the following week the neck began to swell, and Dr. Colclough, after trying cinnamate of soda injections, sent him up to me again with recurrence of the disease, characterising him, quite justifiably, as "doomed."

An extensive recurrence was found—a mass of hard glands in the neck at the original seat of operation, which was already breaking down in the centre and discharging blood and pus. The left side of the floor of the mouth bulging up was full of an ulcerated mass of growth, which extended backwards to the same side of the pharynx and base of the remaining half of the tongue. He had a considerable degree of dyspnœa; consequently it was decided to perform a low tracheotomy at once. This was done next morning, but a complete excision of the thyroid gland was first performed. Chloroform being administered, the entire thyroid was exposed by means of a semilunar collar incision. gland was firmly bound down to the adjacent structures as if there had been an inflammatory condition causing adhesions; it was very vascular, necessitating the tying of many vessels, the whole thyroid, however, being removed in one piece. Tracheotomy was then per-formed, and the patient, having stood this operation removed in one piece. well with no evidence of shock, was back in bed in an hour from the commencement of the operation. The recovery was uninterrupted, the patient being up on the second day; the wound healed by first intention, and he was out walking in the sun on the seventh day. On the twelfth day the mass in the neck had almost ceased to discharge, was considerably smaller, and not at all painful; the induration had also lessened. The patient was able to swallow and talk much better, and could open the mouth further and without pain, there being also diminution of the swelling and hardness in the mouth and pharynx. The profuse flow of saliva from the mouth was now much reduced; the pulse and temperatere became normal, the pulse being 68 per minute. (This varied from 76 to 83 before the excision.) Altogether the patient seemed better after the complete removal of the thyroid, being much brighter in himself, feeling more comfortable in every way, and sleeping longer at a time. The only other treatment consisted in the administration of macin, and as far as possible an anti-hypomyxiatous diet. He took three ounces of the elixoid mucin a day, by sipping, as it was most soothing and moistening to the tongue and threat

The question was-Would this patient become myxcedemeatous, and if not, why not? If myxœdema developed at all it should be late in appearing, because the theory is that mucin being so deficient in the carcinomatous subject, even

after complete removal of the thyroid, it would be long in accumulating to such an extent in the tissues as to show itself in the usual myxcedematous manner. The idea that the thyroid gland had been overworking was borne out by the result of the pathological examination. The following is the report of Dr. George Eastes: "The thyroid tissue shows no encapsulated growth, and to the naked eye nothing but general hypertrophy is suggested. Microscopically some of the gland spaces are dilated, but there is no gross lesion anywhere. The case is one of diffuse parenchymatous hypertrophy." Dr. Wyatt Wingrave's report also bears this out: "Specimen of thyroid gland, received Feb. 14th, 1909, from Mr. Stuart-Low. There is but little variation from the normal thyroid. The most characteristic features are: 1. Increase in the interlobular connective tissues, which is also marked in the acini. 2. Congestion of the acini, which are on the whole somewhat smaller than normal. 3. Diminished staining action of the colloid substances. 4. Intra-acinous cells were normal.

The excision of the entire thyroid gland was performed on Feb. 14th, 1909, and the patient lived until June 22nd, 1909, when he died from septic pneumonia. During the four months he developed no symptoms of myxcedema. He was singularly free from pain, and the growth in the throat, mouth, and neck did not increase to any appreciable extent, but ultimately softened and broke down, the discharges during this process giving rise to the septic pneumonia. Another remarkable point about the case was the increase in weight—he gained 1 pound per week for two months after the excision of the thyroid.

Although certain that in this case the pain had been relieved (the patient being emphatic concerning this) and that the rapid increase of the growth had been arrested, I was disappointed with the result, and in no other case was the operation again undertaken until May 9th, 1909.

CASE 2.—The second case was that of a man, aged 45 years, whom I showed at the last meeting of the Laryngological Section of the Royal Society of Medicine on May 7th, 1909, as an inoperable case of epithelioma of the larynx. The man was a porter in the General Post Office, who came to the clinic at the Central London Throat, Nose, and Ear Hospital complaining of hoarseness and difficulty of swallowing of two months' duration. He gave a history of repeated attacks of influenza, but not of syphilis. A large, grey, mushroom-like mass was seen covering over and projecting into the larynx. About one-third of this mass was removed with forceps; this gave him considerable relief. Dr. Wyatt Wingrave reported that it was certainly a very rapidly growing epithelioma—"one of the most virulent that he had ever seen." In the discussion which followed at the he had ever seen." In the discussion which followed at the sectional meeting Mr. H. Tilley said that he thought the growth was certainly of a malignant nature and far too extensive to be operated upon. He also emphasised the presence of many enlarged glands in the neck.

On May 10th, 1909, under local anæsthesia (1 per cent. cocaine) a collar incision was made over the thyroid, the isthmus was divided, the left lobe isolated, and all the vessels proceeding to and from this ligatured. Suddenly the larynx became obstructed, probably from the large growth hanging over its entrance having become fixed in the passage. The patient very rapidly became cyanosed and respiration ceased. It was urgently necessary to perform trachectomy, when recovery quickly took place. This accident proved the wisdom of having used local anæsthesia as against general anæsthesia in the particular case. It was now found impossible to remove the thyroid without greatly prolonging the operation, and it was thought best to tie the superior thyroid of the right lobe, and trust to this and efficient ligation of the left lobe to minimise the thyroid function. The large wound was partially closed and firmly packed with gauze. This patient made an excellent and uninterrupted recovery, leaving the hospital in a fortnight; the left lobe of the thyroid, all the vessels of which had been ligatured, sloughed, and came away in the dressings with the ligatures.

It is now five months since the operation was undertaken, and the case has been watched very attentively. Before this operation the patient was rapidly getting worse and losing weight, but since then he has been putting on weight, having gained 1 stone 1 pound. He is now swallowing better, and the growth in the larynx and pharynx has diminished very much in size. There has been no pain,

and the patient is much stronger and expresses himself as feeling better in every way since being operated upon.

This is the first case in which ligation, as distinguished from excision, has been practised and trusted to for the partial ablation of the thyroid. Judging from the results in this instance, the plan would certainly seem to answer well. Ligation is a more rapid process than excision, and the thyroid in these cancerous subjects is often enlarged, very vascular, and very adherent to surrounding structures—therefore often most tedious and troublesome to isolate.

CASE 3.—The third case was that of a man, a painter by trade, aged 58 years, who came to the clinic at the Central London Throat, Nose, and Ear Hospital on May 22nd, 1908, complaining of pain in the tongue and neck, and of a swelling on the neck of six weeks' duration. There was an ulcer of the size of a shilling on the right side of the tongue. was excavated and indurated, and had the characteristic stony hardness around and towards the base of the tongue. The induration extended on to the palate and under the sterno-mastoid near the angle of the jaw. No doubt could be entertained as to the primary ulceration being epitheliomatous, or that the enlarged glands were a secondary extension from the tongue. The pathological report supported the clinical diagnosis, and it being considered futile to try to eradicate the growth thyroidectomy was decided upon. Complete hemi-thyroidectomy was performed on June 3rd, 1909, the left half of the thyroid, including half of the isthmus, being removed; it was found very vascular and adherent to the surrounding structures. The patient was in the hospital for a week after the operation, and during this time suffered no pain in the tongue or neck. For some time before the operation the pain in the neck, shooting from the tongue to the enlarged glands and up to the side of the head, had been so severe as to keep him awake, and necessitated his having hypnotics every night. He is now an out-patient and for some weeks returned to his work as a painter. The ulcer on the side of the tongue healed, the induration became much less, and the glandular swelling softer.

Case 4.—The fourth case was that of a man, aged 70 years, with a large excavated ulcer on the outer wall of the left side of the naso-pharynx and a mass of hard glands under the sterno-mastoid. He was in a very low and weak state when he first came to the hospital, and altogether a very bad subject for any operative procedure. He was rapidly losing weight and complained of great pain in the throat and neck. Under local anæsthesia, on June 16th, 1909, the thyroid vessels were ligatured on both sides. He recovered well from the operation, lost all his pain, and the glands lessened in size and softened somewhat. He was able to leave the hospital for his own home, which was a very poor one, on the tenth day. He lingered on for six weeks, and did not suffer much pain even near the end.

CASE 5.—The fifth case was that of a man, aged 65 years, with epithelioma of the soft palate, and some secondary glands on both sides of the neck. On July 10th hemithyroidectomy was performed under local anæsthesia. He is still under observation and has gained 6 pounds in weight. His general condition is good and the glands have become smaller and softer. He is attending regularly as an outpatient. A very interesting, instructive, and important change took place in the hard mass of glands on the right side of the neck in this patient, commencing soon after the operation on the thyroid-viz., gradual and progressive softening. This went steadily on until there was great tension of the superficial surrounding tissues, and it was decided to incise the swelling and anticipate pointing and ultimate bursting of the enlargement. On freely opening it a large quantity of glairy mucoid fluid was discharged, which, on pathological examination by Dr. Wyatt Wingrave was found to consist chiefly of mucin. The inference, therefore, may be taken to be that the removal of the thyroid had induced a myxomatous degeneration in the mass of cancerous glands. Since this incision the mass of secondary growth in the glands has slowly diminished, and much discharge has taken place ever since, containing pieces of broken-down tissue which have sloughed away. On inserting the finger a cavity can be felt where the mass of hard glands was.

There seems no doubt that partial removal of the thyroid has an influence on these growths. It seems to have a deterrent effect on the rate of growth of the primary tumour; the secondary glands, too, seem to be favourably affected, as

in these cases there was a softening change in the glands, and they were much less painful. In all cases the pain was very quickly relieved. The patients, instead of losing weight, as they were doing before the operation, put on weight. Another thing noted in all these cases was a distinct slowing of the rate of the pulse. The second, third, and fifth cases were operated upon at a much earlier date than the first and fourth, and it would appear to be best to intervene as early as possible, not waiting until the patient is too low and weak. I have put these cases on record as, so far as I can find, the treatment is new and seems warranted by the results.

Harley-street, W.

A FATAL CASE OF ENDOCARDITIS OCCUR-RING DURING SCARLET FEVER,

WITH A NOTE ON THE BACTERIOLOGY OF SCARLET FEVER AND ACUTE RHEUMATISM.

BY J. M. CLEMENTS, M.D. R.U.I., D.P.H.,
MEDICAL OFFICER OF HEALTH. BATLEY.

THE notes of this case are of interest for the following reasons: (a) The rarity with which endocarditis occurs as a fatal complication of scarlet fever; (b) the presence of a streptococcus in the diseased endocardium; (c) the isolation of a similar streptococcus from the synovial fluid of a mild case of scarlatinal rheumatism; and (d) the possible relations of this organism to scarlet fever, endocarditis, and acute rheumatism.

Clinical history.—The patient, a boy, aged five years, was admitted to hospital with a mild attack of scarlet There was no history of previous illnesses, and fever. the note made on admission states that the heart was then normal. The acute stage of the scarlet fever then normal. The acute stage of the scarlet fever soon passed off, the temperature being normal on the sixth day. On the eighth day of illness there was a slight rise of temperature, and from this to the eighteenth day the temperature varied between 98° and 100° F. The pulse-rate during the same period was accelerated, ranging from 100 to 148. This departure from normal caused some anxiety, especially as none of the usual complications, which were looked for daily, could be detected. A trace of albumin appeared in the urine from the thirteenth to the sixteenth day; it was only a faint trace, no blood was present, and it was not regarded as the cause of the rise in temperature. In the fourth week the temperature settled to normal and the patient was allowed to get out of bed. The pulse, however, still kept rapid, being usually over 100, and was frequently 130 or 140. At this time the boy was examined daily, and particular attention was directed to the heart and lungs, but with negative results. During the period from the fourth to the tenth week he was kept in the open air most of the day and a liberal diet with tonics was given. He did not make progress, but remained thin and anæmic, and did not enter into the games of the other patients. On the eightieth day definite signs of cardiac complications were observed for the first time. A note made on this day states that "the heart is dilated and there is a loud bruit audible all over the chest, transverse dulness half an inch to the right of the sternum and one inch outside the nipple line." Three days later (eighty-third day) the wrist and carpal joints of the right hand were swollen, and the patient complained of pain in this hand; there was no elevation of temperature at this time, as is usual with a swollen joint in scarlet fever. The degree of cardiac dilata-tion steadily increased; restlessness, dyspnœa, retching, and vomiting were prominent symptoms; and death occurred on the hundredth day.

Note made at the post-mortem examination.—"The liver and spleen are congested, but beyond this all the organs, except the heart, appear to be healthy. No infarctions were found. All the chambers of the heart are dilated, and all the valves are affected with vegetative endocarditis. Vegetations are present on every cusp of the aortic, mitral, tricuspid, and pulmonary valves; they are small, of the warty type, are confined to the edges of the valves, and do not extend to the mural endocardium. There is no tendency to ulceration, and there are no fungating masses such as are sometimes seen in malignant endocarditis. The vegetations appear to be quite recent and there is no thickening of the valves."

Smear preparations, made from the vegetations and stained, showed coccal organisms in groups and pairs among leucocytes and débris. Agar and blood-serum tubes inoculated with the vegetations and incubated gave a pure culture of a streptococcus, to the cultural characters of which I shall refer later, but before doing so I would draw attention to the following points as noteworthy in the clinical history. 1. The type of scarlet fever was very mild. 2. The occurrence of joint trouble for the first time so late as the eighty-third day. The usual time for "rheumatism appear in scarlet fever is during the second or third week of the disease. 3. The endocarditis probably commenced in the second week of scarlet fever, but was not detected until the eightieth day. The possibility of its existence was considered and the heart was carefully examined on many occasions, but no definite evidence of a lesion was discovered until the day stated. 4. Death was directly due to valvular endocarditis, a very uncommon cause of death in scarlet fever. While it is very rare to find this lesion post mortem in scarlet fever, there are clinical signs that it occurs in a small proportion, probably not more than 0.5 per cent. of the cases. In septic and fatal cases of the disease the heart is often seriously affected, but the damage is mainly done to the muscle wall, the muscle parenchyma and interstitial tissues suffering, rather than the endocardium. When the endocardium is attacked it is almost invariably the mitral valve that is affected, and there may be little or no clinical signs of a lesion. The true significance of a murmur appearing in the mitral area during an attack of scarlet fever or any of the infectious diseases, is often difficult to appreciate. It may indicate temporary weakness of the myocardium and papillary muscles, or it may be due to organic changes in the mitral valve. The following statement briefly summarises my experience of this condition in scarlet fever. onset of scarlet fever it is not uncommon to find a blowing murmur in the mitral area, systolic in time and well conducted towards the axilla, accompanied, perhaps, by a slight degree of dilatation, but as the acute stage of the disease passes off this murmur disappears, the heart returns to its normal size, and the patient leaves hospital with a sound heart. If, however, a murmur appears at a later stage of the disease, and especially if accompanied by a rise of temperature and accelerated pulse, not due to glandular swelling or other easily recognised complication, the probability that it is due to endocarditis of the mitral valve is very strong. A systolic mitral murmur appearing during an attack of scarlatinal rheumatism is in the large majority of cases due to endocarditis and will be permanent.

Basteriology.—The streptococcus obtained in pure culture from the diseased valves has the following characters. It occurs in fluid media in short chains of two to six, frequently in pairs and small clumps. It is, therefore, of the streptococcus brevis type. It is non-motile and Gram-positive. It does not grow on gelatine at 20°C., but grows well on agar and blood serum at 37° C. It does not produce acid nor clot in milk. When tested for acid production in Lemco broth containing 1 per cent. of the following sugars-glucose, maltose, galactose, levulose, lactose, saccharose, raffinose, mannite, salicin, and inulin-it is found to produce acid in three-viz., maltose, levulose, and saccharose. The serum of patients suffering from scarlet fever does not agglutinate it, nor does the serum of patients suffering from scarlatinal rheumatism. The blood serums of three scarlet fever cases were tested for the presence of opsonins. The indices were 0.94, 1.1, and 1.68 respectively. It is noteworthy that the case whose index was 1.68 was suffering at the time from rhoumalism.

At first I did not consider there was any causal relation between this streptococcus and the diseased endocardium. I had frequently isolated streptococci from the commoner complications of scarlet fever and from the circulating blood in septic cases (collecting the blood direct from the vein in the arm into a sterile glass syringe), and I had come to regard their presence as due to a secondary or terminal infection. But about this time I drew off some synovial fluid from the wrist-joint of a case of scarlatinal rheumatism, taking the same precautions to avoid skin contamination as in blood cultures, and after incubating it on agar and blood serum I obtained a pure culture of a streptococcus which gave the same sugar reactions and appeared to be identical in every way with the strain of coccus isolated from the diseased valves. This result

appeared to me to open up the question of the relation of this streptococcus to scarlet fever, endocarditis, and acute rheumatism. The relationship of streptococci to these diseases is a very wide and difficult problem, and I do not propose to discuss it here, but will conclude this note by referring briefly to the chief views that at present hold the field.

Scarlet fever.-Streptococci have for many years been regarded as playing an important part in the cause of this disease and its complications. This view is based mainly on the constancy with which streptococci can be isolated from the inflamed fauces and commoner complications. They are present in the breaking-down glands, in the pus from suppurating mastoids, in the heart, lung, and kidney complications, and not infrequently in the circulating blood of septic cases. The following criticism may be offered to the view that scarlet fever is due to a specific streptococcus as stated by Klein and others. No constant type of strepto-coccus can be isolated from the inflamed throat or the various complications of the disease. The application of Gordon's tests shows that a variety of streptococci can be isolated not only from the inflamed fauces, but even from the same complication. The streptococci isolated, even from septic and fatal cases, have a low degree of virulence when injected into animals and do not produce any condition resembling scarlet fever. It has been suggested that scarlet fever is not caused by one particular strain of streptococcus, but is capable of being produced by a variety of streptococci, and in support of this view are brought forward those so-called cases of scarlet fever following burns, surgical operations, and parturition, where no evidence of exposure to the infection of scarlet fever can be found. The absence of a constant type of streptococcus as tested by Gordon's methods would also lend support to this view. Against this view we have the clinical evidence that scarlet fever always breeds true; it does not lead a double life, appearing at one time with all the symptoms as we know them well marked, and at another time as some other disease or in some questionable form. For the present we must be content to regard the streptococcal origin of scarlet fever as not proved, and in this connexion it may be well to remember that, prior to the discovery of the Klebs-Löffler bacillus, streptococci were regarded as the specific cause of diphtheria.

Endocarditis and acute rheumatism.—The relation of streptococci to these two conditions may be considered together, endocarditis being a prominent, if not the essential, lesion in the symptom-complex known as acute rheumatism. Many investigators have from time to time described organisms they have found in the blood and diseased tissues of acute rheumatism, and during the last eight or ten years attention has been concentrated on the presence of a short streptococcus or diplococcus in the blood of this disease. This organism has been isolated by several observers, and notably by Poynton and Paine in this country, who have succeeded in isolating it from over 30 cases of acute rheumatism, and have demonstrated its presence in the blood, joint fluid, rheumatic nodules, and elsewhere during life, and in the heart's blood, pericardium, endocardial vegetations, and elsewhere after death. They have also shown that intravenous injection of cultures of this organism into rabbits produces all the cardinal lesions of acute rheumatism. Their observations and experimental results have been confirmed by Beaton, Ainley Walker, and Beattie. On the other hand, other bacteriologists, such as Horder, Andrewes, and Bulloch, have consistently failed to isolate cocci or other organisms from the blood of cases of acute rheumatism during life. They also state that only in a few cases have they obtained cocci from the lesions after death. failure of some of these observers to isolate organisms from the blood cannot be attributed to their methods of blood examination. Horder has shown that by using the same methods in cases of ulcerative endocarditis he has obtained positive results in over 90 per cent. of the cases examined. In some of the latter cases Pfeiffer's bacillus was isolated from the blood, a delicate organism that is grown only with difficulty. It would therefore appear that his methods of blood examination succeed if micro-organisms are present.

The explanation of the discordant results of these two schools may perhaps lie (1) in the difference of the technique employed; from the accounts given by some of the observers it would appear that sufficient care was not taken in obtaining

the blood to avoid skin contamination; (2) the results may be partly due to a failure to distinguish between cases of ulcerative endocarditis and acute rheumatism. It is now well recognised that in malignant endocarditis micro-organisms can practically always be obtained from the blood and that streptococci and pneumococci are those most frequently found. Moreover, the clinical distinction between these two diseases may be sometimes extremely difficult, and it is possible that in some of the cases where positive results have been obtained the disease was not acute rheumatism, but was malignant endocarditis.

Batley.

A CASE OF DUODENAL FISTULA CURED BY OPERATION.

BY R. LAWFORD KNAGGS, M.C. CANTAB., SURGEON TO THE LEEDS GENERAL INFIRMARY.

THE case of duodenal fistula reported below may advantageously be contrasted with two others recorded by Dr. Albert Ashton Berg of New York. One of Dr. Berg's cases resulted from a cholecysto-duodenostomy for obstructive jaundice due to cancer of the pancreas, and the other followed an operation for perforated duodenal ulcer complicated by a localised peritoneal abscess. The method of treatment finally adopted in both cases was the performance of a gastro-jejunostomy and occlusion of the pylorus. The latter was produced by an encircling band, in one case of large-sized ligature silk, and in the other of tape only tied sufficiently tight to occlude the lumen but not to constrict the tissues. This plan does not seem to be free from the danger of ulceration of the tissues by the ligature, for it is impossible for occlusion to be produced by it without a certain degree of pressure. And, in fact, this occurred in the one case from which any conclusion could be drawn, but not to such an extent as to lead to disaster. Still, Dr. Berg believes the encircling ligature to be the best plan, and points out very truly that the infolding of the pylorus by superimposed rows of Lembert sutures, though possibly easy when the tissues are normal, is quite a different thing when the peritoneal surfaces of the viscera have become brittle and friable and fixed in inflammatory exudate. In the writer's case the pylorus was occluded by infolding in the manner suggested by Kelling (vide Berg's paper), except that no attempt was made to make a kink by suturing the end of the stomach to the first and second parts of the duodenum. That was impracticable owing to the thickness and firmness of the roll which was formed by the infolding, and further it appeared, and subsequently was proved, to be unnecessary.

As in other hollow viscers not completely invested by peritoneum a perforation of the duodenum may be either intra- or extra-peritoneal. The clinical features of the two forms are very different. As the following case shows, those of the extra-peritoneal form may be very misleading and a diagnosis may be impossible before the escape of duodenal contents puts the matter beyond doubt. On the other hand, intra-peritoneal rupture is attended by such marked and definite symptoms that it is usually recognised promptly and without difficulty. The treatment of a fistula resulting from extra-peritoneal perforation-if it refuses to close of its own accord—presents no particular difficulty if it is dealt with upon Kelling's plan, because the parts are healthy and aseptic; but it is only necessary to study Dr. Berg's cases to realise how hard it is to close a fistula when the parts are inflamed and softened and the field of operation is septic, conditions which are almost certain to be present when it is the result of an intraperitoneal opening.

A girl, aged 17 years, was admitted to the Leeds General Infirmary on Oct. 27th, 1906. Three months before her admission, under Dr. A. G. Barrs, she began to have attacks of sickness and diarrhea and passed a little blood. The sickness came on after taking food and she would usually vomit once a day, but occasionally she would go for six or seven days without doing so. She also had pain which came on a quarter of an hour after a meal, lasted about an hour, and went away gradually. This condition persisted till the week before admission when she became worse. She had lost flesh.

On admission, nothing abnormal was found on examination of the abdomen and nothing definitely wrong in the chest, though a slight taint in the family history, nocturnal perspirations, and a rather rapid pulse suggested the possibility of tubercle. The urine was normal. At first the pain and sickness disappeared, though the patient was put upon ordinary diet, but about Nov. 7th she complained of pain in the right hypochondriac region, and the temperature rose and gradually assumed an intermittent type. On Dec. 12th a mass was noticed in the right loin, and the right knee was partially flexed and drawn up. On the 15th there was exquisite tenderness at the bottom of the right side of the chest. On Jan. 9th, 1907, under anæsthesia the swelling on the right side of the abdomen was hard and could be felt to disappear under cover of the ribs. It was largest just before it did so. Its boundaries were vague.

On Jan. 14th the patient was transferred to the surgical side where the condition was regarded as a subscute suppuration under the psoas sheath, producing flexion of the hip and lordosis. On Jan. 23rd an incision was made in the right loin through muscles that were very firm from inflammatory infiltration. An abscess was opened by manipulation with the finger through an indurated mass, and about an ounce of pus escaped and a drainage tube was inserted. On March 6th, drainage not being satisfactory, the resulting sinus was opened up, and owing to the disappearance of the induration a considerable cavity could be explored. It was still regarded as situated under the psoas fascia. On March 25th a portion of orange pulp was noticed on the dressings, and it was then realised that the curious odour of the discharge, which had been noticed for several days, was due to gastric fluids. There was no trace of bile or of fæces, but charcoal made its appearance on the dressings four hours after it had been taken. The patient remained an in-patient till April 16th, when the wound had contracted to the drainagetube track, but there was still a considerable discharge having the peculiar odour just referred to, and in which evidence of fluid food was frequently observed. She was now sent home

in the hope that the communication that existed with the

stomach or duodenum would gradually close.

The patient was readmitted on June 13th. No alteration in the amount or character of the discharge from the sinus had taken place, and whenever charcoal was swallowed some of it came away from the sinus in from two to five hours. Occasionally bubbles of gas escaped and the patient stated that a "rush" of discharge would occur when she was actually masticating her food. On July 3rd the abdomen was opened. Considerable evidence of past inflammation was found in the neighbourhood of the duodenum. adhesions which existed between the under surface of the liver, the duodenum, the pylorus, and the transverse mesocolon were numerous but not tough. Their separation before the duodenum could be examined caused some trouble. only trace of ulcer that could be detected was at the pylorus on the posterior surface. The finger pressing upon the anterior wall felt to impinge upon a depression as big as a threepenny-piece. This part of the pylorus was moveable to a certain extent. The stomach was quite healthy. A posterior gastro-enterostomy was performed, and then the pylorus was infolded by two rows of Lembert sutures parallel to its long axis, about 1½ inches long—one over the other. In this way the pyloric end of the stomach was converted into a solid roll a little thicker than the thumb. After the operation the sour odour at once disappeared from the discharge and no more particles of food were ever seen. The next day bile, which had never escaped before, was mixed with the discharge and persisted for about a week, gradually diminishing. The patient left the hospital on August 20th, 1907, when the discharge from the lumbar sinus had diminished considerably. The charcoal test was now always negative. A small sinus persisted for a long time, but had finally closed in April, 1909. Her general condition after the abscess eavity was thoroughly drained was always satisfactory and for the last year or more she has been the picture of health.

Leeds.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.— On Oct. 8th the winter session of this society was opened by the presidential address delivered by Dr. Neville T. Wood entitled "The Selection of Patients for Spa Treatment."

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

CLINICAL SECTION.

Exhibition of Cases and Specimens.—Pneumonia with considerable Displacement of the Heart simulating Pleural Effusion.—Caroinoma of the Breast.

A MEETING of this section was held on Oct. 8th. Mr. A. PEARCE GOULD being in the chair.

Dr. J. L. Bunch presented a case of Mycosis Fungoides in a man, aged 50 years, who noticed last October some scaly patches on his limbs which were itchy and irritable. These patches increased in size and looked like eczema, except that they were very sharply defined. The whole of the trunk and limbs became gradually involved in a diffuse superficial infiltration, the pruritus increased, and softish granulomatous tumours made their appearance. The largest was of typical fungating, mushroom-like appearance. The condition had improved under the following methods of treatment—an injection of a preparation akin to soamin. light treatment, and X rays.

Dr. H. D. ROLLESTON exhibited a case of Pigmentation of the Mouth in Pernicious Anæmia in a man, aged 25 years, who was admitted to hospital on July 19th, 1909 for diarrhœa, anæmia, and enlargement of the liver and spleen. There was marked freckling of the lower half of the face, especially around the mouth. The lower lip presented inky pigmentation along the line of contact towards the angles of the mouth. On the oral surface of the right cheek there were one large and four small pigmented patches, and on the mucosa of the left cheek there were two similar pigmented patches. Inquiry showed that the patient had not taken arsenic before admission. Dr. Rolleston said that that supported Dr. Hale White's contention that oral pigmentation occurred in pernicious anæmia independently of arsenical treatment. The patient had greatly improved since he was put on arsenic.—Dr. F. PARKES WEBER said that the pigmentation made him think that the case might be one of an

Mr. Albert Carless showed a man from whom he had removed both the upper maxillæ for so-called Fibro-cystic Disease or Epithelial Odontome. Mr. Carless was congratulated on the successful and satisfactory issue of his operative procedure, and Mr. PEARCE GOULD recalled the circumstances of a similar case in which both maxillæ had been taken away for carcinomatous disease.

incomplete form of xeroderma pigmentosum.

Mr. JAMES SHEBREN showed a Meckel's Diverticulum containing calculi removed at an operation on a man aged 38 years. The condition had produced symptoms of abdominal colic and the patient was said to have passed gall-stones in his motions. When admitted to the medical side of the hospital with a history of a sudden onset of pain in the right iliac fossa the pain was described as "grinding" in character, and was accompanied by vomiting. Mr. Sherren saw the patient shortly after another attack and advised operation. On May 16th he opened the abdomen in the right iliac region. On examination he at once felt a bladder full of stones. On bringing it outside the abdomen its nature was at once evident. The diverticulum sprang from the antimesenteric border of the ileum, at its commencement being the same size as the ileum from which it sprang, dilating at its free extremity. The termination of the superior mesenteric artery ran in a fold of peritoneum along its anterior surface. It was quite free from adhesions. The specimen measured in the recent state four inches in length and was partially closed an inch from its attached end by a valvular fold of mucous membrane. Below this point it was filled with irregular brownish calculi which were very brittle. Analysis showed them to be composed of cholesterin, bile pigments, and calcium oxalate.

Dr. E. I. Spriggs showed a case of Infective Rheumatoid Arthritis with Enlargement of Glands and Spleen. The patient was a male, aged 16 years, a farm labourer. The trouble

and he was able to continue his work. On admission to hospital four weeks back the lad looked ill; his pulse ranged between 92 and 104, and his temperature rose to 99 5° F the evening. The interphalangeal joints, both distal and proximal, of the fingers and thumbs were red and enlarged, but the redness had now disappeared. The elbows, wrists, knees, and ankles were uniformly enlarged. The lymphatic glands were enlarged, soft, and discrete in the axillæ; the epitrochlear gland was about the size of a hazel-nut on each side; the glands in the groins were enlarged, as also some placed deeply above the clavicles. spleen extended about an inch below the left costal margin.-Dr. A. E. GARROD referred to the cases described as Still's disease, and said that similar cases did occur but more rarely in adult life, the difference in the clinical picture affording examples of the influence of age on a type of disease. Dr. ROLLESTON had seen a case at Cambridge in an adult similar to the case of Dr. Spriggs before Dr. Still had brought forward his cases.—Sir DYCE DUCKWORTH said that those cases of Dr. Still were possibly a blend of struma with the so-called arthritic or rheumatic habit of body.

Dr. G. A. SUTHERLAND showed a case of Flexor Spasm in a girl, aged five years. In June last the left hand was noticed to be held in a cramped position and not used. Two days later the child had a sort of fit, becoming faint and of a dusky colour, but did not lose consciousness. There was found on examination to be flexion of the fingers of the left hand into the palm. The ring and middle fingers were chiefly affected; the others could be easily extended and even hyper-extended by passive movement. If one straightened out forcibly these two fingers the wrist at once became strongly flexed; if the fingers and wrist were straightened the elbow became flexed. The hand was usually deviated to the ulnar side. The grasp of the left hand was good. There was no alteration in the reflexes or electrical reaction. The condition had persisted unchanged. contraction was not absent during sleep nor under an

anæsthetic. Sir DYCE DUCKWORTH exhibited photographs of a case of

Gout, with large Tophaceous Deposits, in a Mahomedan. The notes of the case had been furnished to him by Captain H. H. G. Knapp of the Indian Medical Service. Sir Dyce Duckworth remarked that patients with much uratic deposit were generally classed as examples of atonic Sometimes enormous deposits of urate occurred without any pain whatever. The condition of the urine might give no indication of progressive renal fibrosis, but it might contain sugar and in course of time a diabetic cachexia ensued in some of these patients.

Sir DYCE DUCKWORTH also gave details of a case of Gout with Uratic Tophi in a boy aged 14 years. He was indebted to Dr. H. Aldersmith, medical officer of Christ's Hospital, for the particulars of the case.

Dr. H. W. BAYLY gave a demonstration of the Treponema Pallidum in Syphilitic Lesions; of the Spirochæta Dentium in Carious Dentine; and of the Spirochæta Refringens in Balanitis.

Dr. W. P. HERRINGHAM read a paper on two cases of Pneumonia with considerable Displacement of the Heart simulating Pleural Effusion. He said that pneumonia was diagnosed partly by the physical signs and partly by the symptoms which it presented. If these were typical the diagnosis was easy. But in a large number of cases they were not. It was the physical signs that varied most, and in consequence the diagnosis had frequently to be made chiefly on the symptoms. But though it was comparatively common for the vocal vibrations to be absent, for the percussion note to be almost, if not quite, as flat as that of pleural effusion, and for the breath sounds to be weakened instead of undergoing the changes typical of pneumonia, it had never been his lot until the present year to observe along with these variations from the type such a displacement of the heart as would confirm the diagnosis of pleural effusion, though such displacement was not, of course, unknown.

Dr. N. S. FINZI and Mr. ERNEST H. SHAW communicated a further report on a case of Carcinoma of the Breast treated by Radium. The specimens which they exhibited were from a case of carcinoma of the breast shown to the Royal Society of Medicine on May 14th, 1909. The patient was a woman, began at the age of ten years with painless enlargement of the proximal joints of the fingers, followed by swelling of the ankles, elbows, and wrists. There was no pain for two years

X rays with temporary improvement. On March 10th and 12th, 1909, she was given two long exposures to the rays of 50 milligrammes of radium bromide filtered through This was followed by another exa thin silver tube. posure on April 29th, 1909, a screen of lead 1 millimetre in thickness being used in addition to the silver. The first two exposures were excessive and caused small but troublesome burns. The tumour and enlarged glands, however, disappeared and at the time of her death were not palpable. She was admitted to the German Hospital with a strangulated umbilical hernia and died on July 13th. At the post-mortem examination the whole of the mammary and axillary subcutaneous tissues was removed together with the portion of skin affected by the burns. The sites of the breast tumour and axillary swelling were seen to be occupied by two thin irregular sheets of fibrous tissue; no definite nodule of growth could be distinguished in the fibrous masses, but at the edge of the larger mass two small ovoid bodies about 1 centimetre in length were found which felt like pieces of hardened fat. There was no sign of any growth in the mediastinum, but there were several nodules about 1.5 centimetres in diameter in the liver. There were two whitish raised patches about 1 centimetre in diameter in the mucous membrane of the stomach. The kidneys, spleen, and other organs appeared to be normal. Dr. Finzi and Mr. Shaw considered that the microscopical sections they showed admitted of two interpretations: one, that most of the cells of the growth disappeared as the result of the radium treatment, but a few remained and afterwards began to multiply, some of them passing on to the lymphatic glands and liver; and the other that the growth was still being absorbed locally at the time of the patient's death. They thought that in favour of the first suggestion were the facts that the carcinoma cells, which were thickly packed in the fibrous tissue, were well stained and were "creeping" along, as it were, the fibrous septa into the surrounding fat; here they were not surrounded by fibrous tissue. Also the growth in the lymphatic glands was apparently recent, and there was no thick fibrous tissue. The liver nodule also had very little fibrous tissue between Dr. Finzi and Mr. Shaw believed that if further the cells. treatment had been given it might have completed the process of absorption of the growth. The condition of the skin due to the burns, however, rendered further treatment inadvisable.

MEDICAL SOCIETY OF LONDON.

Presidential Address.—Perforation of the Small Intestine.

A MEETING of this society was held on Oct. 11th, Dr. SAMUEL WEST, the President, being in the chair.

The PRESIDENT delivered his address, which is printed in

full on p. 1121.

Mr. Hugh Lett read a paper on two cases of Perforation of the Small Intestine. The first case was that of a woman, aged 54 years, who was admitted to the London Hospital on August 4th, 1906. Two days previously she was suddenly seized with severe pain in the upper half of the abdomen, followed by vomiting. She had suffered from dyspepsia for years, but had never had hæmatemesis. On admission the abdomen was distended, and moved only slightly on respiration; on palpation it was tender and resistant, especially on the left side in the upper half. The tongue was dry, the pulse was 120, and the temperature was 102° F. Perforation of a gastric ulcer was suspected, and laparotomy was performed. An incision was made through the upper half of the left rectus close to the middle line. When the abdomen was opened gas escaped, and the diagnosis of general peritonitis was confirmed. 18 inches beyond the duodenojejunal junction of the jejunum a small perforation was found, situated on the free border of the intestine, away from the mesentery. The wall of the intestine was thickened and infiltrated round the perforation. This was closed by a continuous suture placed transversely to the long axis of the intestine, and was finally covered in by a second continuous suture. A quantity of pus was discharged from the wound for some days after the operation, but the patient ultimately recovered. Mr. Lett thought that the cause of the thickening and perforation of the intestine was obscure. It could hardly have been carcinomatous, for the appearance was not in the least suggestive of carcinoma.

Nor was it probable that the condition was one of sarcoma. Tuberculous ulceration was, of course, possible, but improbable. The diagnosis of typhoid ulceration could not be entertained owing to the fact that the patient had been in her usual health until the time of perforation, also that such induration as occurred was not met with in typical typhoid ulcers. Besides, if the patient had recently been operated upon for gastric or duodenal ulcer, and a gastroenterostomy had been performed, there would have been no hesitation in describing the case as one of perforation of a peptic ulcer of the jejunum. In 1906 Gosset collected no less than 31 cases in which ulcers developed in the jejunum after this operation. In the last edition of Nothnagel, E. Wagner is quoted as having found an ulcer in the jejunum which resembled a duodenal peptic ulcer in a patient upon whom gastro-enterostomy had not been performed. Peptic jejunal ulcers might perhaps exist apart from gastro-enterostomy, and if so it was possible that the case described might be correctly considered one of a perforated peptic jejunal ulcer. The second case was that of a man, aged 45 years, who was admitted to hospital on June 26th, 1907. 15 hours before admission he had a sudden attack of severe abdominal pain; this was accompanied, or shortly followed, by a shivering fit, the temperature rose to 104° F., and the patient vomited several times. He stated that he had not felt well for five weeks. He presented an emaciated appearance and looked ill. The tongue was dry and red, the pulse was 110, the respirations were 40, and the temperature was 101°. The abdomen was uniformly rigid and painful, and hardly moved on respiration. Laparotomy was performed by an incision in the right iliac fossa. There was general in-flammation of the peritoneum, and its cavity contained purulent inoffensive fluid. A small perforation was found in the ileum two inches from the ileo-cæcal valve; there was no induration of the intestine round the perforation and the wall appeared to be rather thinner than usual. The perforation was closed by invaginating the gut transversely and inserting two layers of interrupted Lembert sutures. A tube with a gauze wick was passed into the pelvis and the wound otherwise was closed. The patient made an uninterrupted recovery. A large amount of inoffensive pus escaped from the abdomen for the first few days, but the tube was removed two and a half weeks after operation. The case was considered to be one of ambulatory typhoid fever with perforation. When the abdomen was opened three facts were discovered. The first was that the peritonitis was due to perforation of the small intestine. second fact was that this perforation was situated in the neighbourhood of the ileo-cæcal valve, where the great majority of perforations in typhoid fever are found. Thirdly, not only was the intestinal wall in the neighbourhood of the perforation free from any induration, but it also felt unusually thin for some distance above. The history of malaise and drowsiness during the preceding five weeks and the emaciated condition of the patient seemed to confirm the diagnosis. On the other hand, the serum agglutination test, which was carried out five days after the operation, was attended with a negative result. Taking the case as a whole, the diagnosis of ambulatory typhoid fever with perforation appeared to be the most probable one. Mr. Lett thought that the question of the pathology of the per-

forations in the two cases was of great interest.

A discussion ensued in which the following took part:
the President, Mr. V. Warren Low, Dr. F. DE HAVILLAND
HALL, Dr. C. S. DE SEGUNDO, Mr. T. H. KELLOCK, Dr. A. F.
VOBLCKER, and Dr. H. DANVERS, after which Mr. Left
replied.

MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.—The first meeting of the session of this society was held on Oct. 1st, when Professor Robert Muir delivered his presidential address, taking as his title "The Doctrine of Inflammation." He pointed out that confusion and inaccuracy prevailed both in pathological and in clinical work owing to the want of a generally accepted definition of the term. He briefly sketched the history of the subject, indicating the different points of view from which inflammation had been regarded. Increased knowledge of the histological changes and of the nature of the causes of inflammation supplied by bacteriology had not removed the difficulty. The views of writers on pathology were compared. Some regarded inflammation as essentially defensive; others as in the main

the result of damage; others stated that it is a complex process incapable of definition; some included reparative processes under the term; others excluded them. He stated that the chief reason for the difficulty in obtaining agreement amongst authorities was the fact that inflammation is not a single process but represents a collection of processes which differ in nature. In considering this statement he took the meaning of the term "process"-i.e., a biological process, to be a succession of changes more or less similar in object. The physiological processes were divided into two great classes: (1) the functional, in which living matter was broken down; and (2) the nutritional and formative, these corresponding respectively to the katabiotic and bioplastic of Weigert. These are essentially different in nature and they are found together often in inverse proportion to each other at different periods of life and under varying circumstances. The pathological processes closely correspond, with the addition of one great class, thus: (A) retrogressive processes—necrosis, degenerations, &c., the direct result of damage; and (B) reactive or progressive processes—defensive and reparative—including (a) increased functional activity—e.g., phagocytosis; and (b) increased formative activity, proliferation of cells, &c. The pheno-The phenomena of acute inflammation were then analysed according to this scheme. The slowing of the blood stream, stasis, and diapedesis of red corpuscles must be regarded as directly due to damage done to the capillary endothelium. Until the nature of lymph formation is satisfactorily settled a decided opinion cannot be expressed with regard to the exudation, but most of the facts point to its being the result of damage to the vessel wall. As to its results, these are in part beneficial, in part harmful. Practically all are agreed that the migration and subsequent movement of leucocytes, and the phagocytic and secretory properties of these cells, constitute a defensive process—increased functional activity. Phagocytosis by endothelial and connective tissue cells is to be similarly regarded. Proliferation of these cells was also discussed. The general result of such an analysis is that there is a multiplicity of processes of different nature. Phagocytosis by leucocytes and other cells may in a sense be regarded as the most important phenomenon, but if so it has no relation to any of the cardinal symptoms of inflammation. When we come to consider the subacute and chronic procasses the difficulty increases. The presence of certain parasites produces, in addition to a leucocytic reaction, proliferation of connective tissue cells and the formation of new blood-vessels: in other words, leads to the formation of granulation tissue similar to that seen in the healing of wounds. Is this process in the two cases to be considered the same in nature or of two kinds? It is unjustifiable to extend the term "inflammatory" to the healing process which essentially depends upon breach of continuity of the tissuesthat is, a variety of regeneration. Inflammatory prolifera-tion may be the result of damage—i.e., reparative, and not the effect of direct stimulation, but this is not proved. is better to speak of it simply as being the result of irritation; whether this acts directly or indirectly must be left an open question. In any case the use of the term "inflammatory" serves no useful purpose. The same holds true tory" serves no useful purpose. The same holds true with regard to the fibroses. Some are due to con-The same holds true tinued mild irritation, some are simple replacements, and some are of functional significance, but whether they are inflammatory or not depends entirely upon the definition. The necessity for analysis is equally great in connexion with the treatment of inflammation. this connexion, again, inflammation is not to be regarded as a process: treatment is not directed towards it as a whole. Rach therapeutic measure is applied to some part of the complex, and is so applied according as to whether the process in question is to be checked or encouraged. methods of treatment were considered in this relationship. The general conclusion arrived at was that it is impossible to define inflammation and at the same time to maintain its relations to the recognised cardinal signs. It should only be used as a convenient, though somewhat indefinite, clinical term, and its use in matters of discussion should be avoided.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Oct. 8th.—Mr. R. F. Jowers showed a case in which Facial Paralysis, following on a radical mastoid operation within a few hours, was successfully treated by facial-accessory nerve anastomosis. The operation was performed three months after the mastoid

was treated.-Dr. W. Broadbent showed a woman suffering from Myxœdema; she improved greatly with thyroid treatment and relapsed directly she omitted it.—Mr. H. H. Taylor showed a girl with Rupture of the Choroid from a blow on the eye with a piece of wood and a case of Primary Optic Atrophy in a man the subject of early locomotor ataxia.—Mr. G. Morgan showed (1) a case of Hypertrophy of the Right Breast in a male child, two years old; and (2) a case of Ganglion of the Biceps Tendon of the arm in a young woman. He also read the notes of a case of Unusual Gland Disease. A more or less universal swelling of the glands occurred in a male, the case presenting all the appearance of Hodgkin's disease. However, it all cleared up with fresh-air treatment, and the diagnosis therefore remained uncertain. It was suggested it might, in spite of the number of glands affected, have been tuberculosis.—Mr. A. G. Bate read the notes of a case of Amputation at the Hip-joint on a man, 73 years of age, who had suffered from Tuberculous Necrosis of the Femur for 60 years and had had numerous operations. The result was quite satisfactory.—Dr. E. Hobhouse showed a Sarcomatous Liver, weighing 72 ounces, from a child aged six years; also (for Dr. J. F. Gordon Dill) a specimen of Lympho-sarcoma of the Spleen in a young man. He also read a paper on Recent Advances in our Conceptions of Heart Disease, for which a vote of thanks was accorded by the society.

Rebiews and Aotices of Books.

Bulletin of the Committee for the Study of Special Diseases.
Edited by T. S. P. STRANGEWAYS, M.R.C.S. Eng.,
L.R.C.P. Lond., "Huddersfield" Lecturer in Special
Pathology in the University of Cambridge. Vol. II.
Published by the Committee and printed at the University Press, Cambridge. Pp. 179. Price 21s. net.

This number contains the report of the committee for the year 1907, which has been delayed in order that an account might be given of work begun in that year but only recently completed. The following papers and monographs are appended: 1. The Arterial Blood-pressure in Arthritic Diseases, by Dr. J. Lambert. The results of sphygmomanometric observations by means of Dr. G. Oliver's instrument in the various forms of rheumatoid arthritis, gout, and in toxic varieties of chronic joint lesions are recorded. It is stated that the pressures in the acute and subacute forms of progressive rheumatoid arthritis are subnormal or normal, in the chronic progressive form normal, and in the senile high and often supernormal. In acute and subacute gout the pressures may be normal or subnormal, due allowance being made for the age of the patient and for the duration of the disease. Hyperpiesis is met with in cases of arthritic gout. The pressure in chronic tophaceous gout is higher than in the other forms. Low pressure is often met with in cases of toxic arthritis, such as gonorrhœal, rheumatic, tuberculous, and septic forms. Senile osteo-arthritis and osteitis deformans are generally associated with raised pressures. A bibliography and some charts are appended. A Report on Some Points in the Etiology and Onset of 195 Cases of Rheumatoid Arthritis, by Dr. J. Lambert. The family history, civil state, sex, age at onset, nature of onset, the first joint attacked, and the association with other diseases were considered in relation to the disease. extension of this report deals with the family history and clinical features of 125 cases of gout. In the same report is included a paper by Dr. James Lindsay on the relation of infective foci to rheumatoid arthritis. It deals with 172 cases of rheumatoid arthritis, of which 138 were females and 34 males. The striking result was found that a definite source of infection preceding the disease was recorded in 73 females and 15 males, an association which Dr. Lindsay regards as due to more than coincidence. 3. The Ophthalmic Reaction: Some Observations on 10,000 Collected

Cases, by Mr. Constant W. Ponder. On the basis of his own observation of 97 cases and of cases recorded in the literature Mr. Ponder concludes that the test must depend upon some specific reaction, but that in view of the marked variability in the hands of different observers there must be some factor or factors which often falsify the results obtained, and that until the nature of this has been determined the test can only be relied upon to give a somewhat broad opinion rather than a decisive diagnosis. Appended to this report is a note on the conjunctival reaction to tuberculin in arthritic diseases by Mr. T. S. P. Strangeways. The observations were undertaken in view of the description by Poncet of "rhumatisme tuberculeux." The reaction was tested on 340 cases of arthritis of a type clinically nontuberculous. A positive reaction was obtained in 210, or · 62 per cent. of the cases. Six of the cases subsequently came to necropsy, but the results were such as to throw doubt on the value of the reaction. 4. Report on a Case of Hypertrophic Pulmonary Osteo-arthropathy, by Mr. Strangeways and Mr. Ponder. The condition was associated with an intrathoracic malignant growth, described as an endothelioma. Full details are given of the clinical history and of the post-mortem appearances as well as excellent skiagrams. 5. Observations on Purin Metabolism, by Dr. H. Ackroyd. As a result of a laborious research regarding the variations of the endogenous and exogenous purin excretion in healthy persons and in cases of rheumatoid arthritis he finds that there is no important change in the purin metabolism in persons suffering from this condition. An acute or subacute attack is accompanied by an increased purin metabolism in some cases, but not in all.

The scientific study of special diseases in the manner carried out by the committee is one which is worthy of every encouragement, and the laborious work entailed is bound to yield useful practical information eventually. We have nothing but praise for this volume.

The Law of Compensation for Industrial Diseases. By EDWARD THORNTON LAWES, M.A., B.C.L., of Lincoln's Inn and the Western Circuit, Barrister-at-law, Recorder of Salisbury. London: Stevens and Sons, Limited. 1909. Pp. 306. Price 7s. 6d.

This book is described in an explanatory sub-title as "an annotation of Section 8 of the Workmen's Compensation Act, 1906, with chapters upon the powers and duties of certifying surgeons and medical referees, and the rules, regulations, and forms relevant thereto, and including a special treatise upon every disease to which the Act now applies, together with the special rules or regulations made under the Factory and Workshop Acts for the prevention of such diseases." Tempora mutantur, and of the changes wrought in our social conditions during recent years this work serves as a notable reminder. If we can imagine a common-law barrister or a manufacturer to have dropped asleep 30 years ago in his chambers or his counting houses and to have been awakened by the descent of Mr. Lawes's volume upon the table beside him, we may go further and try to picture his bewilderment on turning over its leaves. It contains more than 300 pages of statutes, regulations, forms, and explanatory comments upon a subject entirely new to him, the Rip Van Winkle of the law courts or the merchant's Whether it be the lawyer or the employer whom we have conjured up, he has been familiar with the doctrine of "common employment" and the principle involved in the words "volenti non fit injuria." He has probably looked upon them as bulwarks of defence likely to outlive the Magna Charta, and upon industrial disease as the inevitable risk undertaken by the worker in consideration of the wage paid to him.

He awakes to find that an "Employers' Liability" Act dealt the first blow at the position once impregnable, and that successive statutes providing for "Workmen's Compensation" have followed up the attack, each widening the breach made by its predecessor, and all alike denying to master and man the liberty to contract out of their respective liabilities and rights. He then proceeds to realise that not only are "accidents" to workmen, as he understands the word, the subject of compensation, but that a large number of industrial diseases are treated by the law as "accidents." He may at first be inclined to think that this novel development of the meaning of a familiar term lays an undue burden upon employers, but perhaps as he reasons the matter out he will come to the conclusion that the obligation to compensate for disease is less likely to imply injustice than are many claims arising out of alleged accidents of the more familiar class. The industrial disease is more readily traceable to a preventable origin, and produces, as a rule, symptoms more independent of the verbal statement of the sufferer and less likely to be feigned or exaggerated than the supposed strain or concussion. This volume contains rules which the employer must observe if he is employing men in a dangerous trade, the breach of which will render him liable to legal proceedings apart from any immediate result which his conduct may bring about. It also contains an account of the dangerous processes, and of the pathology and symptoms of the diseases arising from them. This introduction of details of manufacture and medicine into a legal text-book is new to us, and at first sight seems out of place, but we are bound to say that the combination of professional wisdom produces a practical guide to the subject. We note in this connexion that the author has compiled this portion of his work from authoritative sources, and that he acknowledges valuable assistance from Dr. B. A. Whitelegge, Chief Inspector of Factories, and Dr. T. M. Legge.

To lawyers, to employers in dangerous trades, and to medical men as medical referees or certifying surgeons, or, indeed, in any other capacity, we have no hesitation in commending Mr. Lawes's volume.

Tuberoulin in Diagnosis and Treatment. By Dr. BANDELIER, Senior Physician to Dr. Weicher's Sanatoria for Pulmonary Disease in Görbersdorf, and Dr. ROEPKE, Medical Director of the Sanatoria for Railway Employees in Melsungen. Translated from the second German edition by EGBERT C. MORLAND, M.B., B.Sc. Lond., M.D. Berne. London: John Bale, Sons, and Danielsson, Limited. 1909. Pp. 182. Price 7s. 6d. net.

This work is designed as "a text-book of the specific diagnosis and therapy of tuberculosis for practitioners and students." It gives a good picture of the position of tuberculin in German medical practice at the present day. Discretion was given by the authors to the translator (Dr. Morland) to add material suitable for an English edition. We think, however, that he came to a wise conclusion when he decided simply to render the book into English, as he considered the time not yet ripe for a judgment on the methods of vaccine therapy now obtaining in England — methods largely arising from Sir Almroth Wright's brilliant researches into the mechanism of immunity.

The first portion of the work is devoted to a consideration of the specific diagnosis of tuberculosis by means of tuberculin; the cutaneous, percutaneous, conjunctival, and subcutaneous methods are described and criticised. In describing the cutaneous reaction the authors express the opinion that the diagnostic certainty of the test is extraordinarily great. They state that if the cases at death's door are excluded, the percentage in the various stadia of the disease varies within such narrow limits that it may be held to be a constant. They quote von Pirquet's statistics, which showed that 97 per cent. of the positive reactions exhibited undoubted naked-eye appearances of tuberculosis at the necropsy, whereas all the children who were found on the table to be free from tubercle had given a negative reaction. The subcutaneous method is held in this work to be par excellence the diagnostic agent for the detection of early pulmonary tuberculosis in adults. Its value is considered to be increased by the fact that in a high percentage of subcutaneous tests focal reactions make their appearance and allow a conclusion as to the site of the tuberculosis in the lung.

In the second portion of the book the specific treatment by tuberculin of pulmonary tuberculosis is first discussed, and an interesting account is given of the results which have been achieved in Germany. It has recently been proved that minute doses of tuberculin, such as Toologoth of a milligramme, and even smaller, produce decided effects, but Dr. Bandelier and Dr. Roepke maintain that such small doses are inadequate, basing their opinion on the view that the action of tuberculin rests partly on a systematically acquired tolerance, a gradually acquired immunity to the toxin. They therefore argue that the aim in the use of tuberculin should be to reach the maximum dose, and in some of their cases as much as 1000 milligrammes were given in one dose. We do not consider that the cases they record are convincing, inasmuch as they were all afebrile at the time the treatment was commenced. That no reaction should occur after such a large dose as that mentioned above is certainly interesting, but judging by clinical tests excellent results are obtained by the more simple methods of treatment during the afebrile stage, although we admit that we should not care to submit cases of apparently complete arrest to such heroic tests. The authors' remarks on the results of treatment by tuberculin are confusing, inasmuch as they distinguish between "cure" and "improvement." In the present state of knowledge the use of the word "cure" in connexion with pulmonary tuberculosis is of doubtful wisdom, and the term "arrest" is preferable. That the authors themselves saw the difficulty is shown by the following statement: "Definitely progressive forms of disease need not be considered for tuberculin treatment, nor is much to be expected in the case of advanced processes, where much destruction of lung tissue has taken place." Yet two pages further on we read: "Based on our own experience, we should say that, setting aside the severe incurable forms of consumption, especially cases of severe mixed infection with pyrexia, every uncomplicated case of pulmonary tuberculosis may be submitted to the mild method of tuberculin injection, avoiding as far as possible all reaction." The first quotation applies to the possibility of "cure," the second to the possibility of improvement, relief, or "arrest" of the disease. The results obtained by several observers in this country point in the direction of the advisability of small doses given in accordance with the temperature chart, and would therefore more nearly accord with the second of the above opinions. It will be a matter of interest to watch further researches in this matter; it is only by increased experience and watching the cases over long periods of time that any definite conclusions can be arrived at as to the most advantageous methods of administering tuberculin as a therapeutic measure in cases of pulmonary tuberculosis.

The treatment of tuberculosis of other organs than the lungs by means of tuberculin is then discussed and favourable results are claimed in cases of tuberculous peritonitis. The whole work is well worthy of attention. The true value of tuberculin has not yet been established, but the

results hitherto obtained are decidedly encouraging, and' there is every hope that the issue of the large amount of clinical work now being done on the subject will be in accordance with these good promises.

The Open-air Treatment of Pulmonary Tuberoulosis. By F. W. BURTON-FANNING, M.D. Cantab., F.R.C.P. Lond., Physician to the Norfolk and Norwich Hospital; Honorary Visiting Physician to the Kelling Open-air Sanatorium. Second edition. London: Cassell and Co. 1909. Pp. 184. Price 5s net.

DURING the four years that have elapsed since the publication of the first edition of this book the principles of the open-air treatment have become more universally accepted and new elements have been introduced dependent upon our more advanced knowledge in acquired immunity. Dr. Burton-Fanning has brought his little work fully up to date, and has studied with an open mind the latest researches which have a bearing on his subject. A good and detailed account is given of the daily routine to be followed in carrying out the open-air treatment, especial emphasis being laid on the deductions which may be drawn from the temperature chart. We agree with the author in maintaining that for all clinical purposes the oral temperature may be relied upon, so dispensing with the inconveniences inseparable from taking the rectal temperature. The transitory rise of temperature which occurs after exercise in healthy individuals may only be detected in the rectum, and if the mouth temperature be relied upon such a rise may not be detected; a persistent elevation of temperature after exercise, however, such as is sometimes seen in tuberculous individuals, has altogether a different significance, and if an interval of half an hour be allowed the mouth may be depended upon for its recognition.

The recent observations which have been made on the opsonic index in relation to tubercle are fully discussed, and the important part which auto-inoculation has been shown to play in patients suffering from active tuberculosis is explained in detail. The system of graduated labour, which has been fully described in our columns, is favourably commented on. Dr. Burton-Fanning considers that this method is the best introduced in the case of "afebrile consumptives." Those of our readers who wish to consult a shortwork in which the chief points in the open-air treatment of pulmonary tuberculosis are ably and clearly described and discussed cannot do better than refer to this book.

Blackwater Fever (Bilious Malignant Tortian Ague). By A. G. NEWELL, M.D. Glasg., D.P.H. Camb. London: John Bale, Sons, and Danielsson. 1909. Pp. 127. Price 5s. net.

This little book has been prepared to set out the views of its author on the condition known as blackwater fever. Dr. Newell has practised his profession for some nine years or more in highly malarious districts of India, more particularly in the Duars, where blackwater fever is often met with, and where. our readers may remember, Captain S. R. Christophers, I.M.S., and Dr. C. A. Bentley carried out their well-known investigations which were published in No. 35 of the "Scientific Memoirs of the Medical and Sanitary Departments. of the Government of India," reviewed in THE LANCET of Feb. 20th of this year. The author claims, therefore, to know something of blackwater fever, the more so since he has had an attack of the disease himself. His views briefly are based on the consideration that "in every case of blackwater fever there will be found antecedent to it malaria, an attack of malignant malaria fever, and a congested liver." The disease, therefore, in his opinion is simply malignant tertian malaria with a superadded biliary condition by which the already congested liver is unable to deal with the destroyed blood corpusoles and the hæmoglobin;

consequently nature, to relieve the liver, excretes the hæmoglobin by other organs—namely, the kidneys; hence the hæmoglobinuria. He therefore formally defines blackwater fever to be "an acute complication of hæmoglobinuria occurring in a patient affected with the malignant tertian parasite of malaria, in whom congestion of the liver has proceeded so far as to incapacitate the liver from dealing with the destruction of red-blood corpuscles, and hæmoglobin emitted therefrom, and which congestion and inactivity of the liver might be exaggerated by a sudden chill or sudden dosage of quinine." Dr. Newell urges that the name "blackwater fever" should be abolished, and the term "bilious malignant tertian ague" substituted. The author takes a somewhat sanguine view of the prognosis in cases of blackwater fever, for under the paragraph headed Mortality he adds "there should be none. The disease is preventable. If taken early judicious treatment should save all." Of the total 127 pages comprised in the book 42 are devoted to the author's arguments in favour of his "theory" respecting blackwater fever: 40 pages are given to the clinical details of some five illustrative cases, while 45 are given to the appendices, which include particulars of laboratory methods for staining films and identifying malaria parasites, the anatomy of mosquitoes, the pharmacology of quinine, preventive measures against blackwater fever, and a variety of other matters. As frontispiece to the book is inserted a photograph of a boy in an advanced state of emaciation from kala-azar who was under Dr. Newell's treatment as a patient. There is evidence suggesting that the book has been somewhat hurriedly prepared for the press. On the title page it is stated that Dr. Newell is editor of Indian Public Health, and this makes it more surprising that certain terms and expressions should have been allowed to pass uncorrected. For instance, it is unusual to find in a medical work the term "off his feed" when the writer is signifying that the patient has anorexia; and objection may well be taken to the employment of the popular phrase "a chill on the liver" in a book intended for medical and scientific readers.

LIBRARY TABLE.

Essentials of Medicine: a Text-book of Medicine. By CHARLES PHILLIPS EMERSON, M.D., late Resident Physician, the Johns Hopkins Hospital. Illustrated by the Author. London and Philadelphia: J. B. Lippincott Company. Pp. 383. Price 8s. 6d.—This work, which is written in popular. rather than in strict scientific, phraseology, is intended "for students beginning a medical course, for nurses, and for all others interested in the care of the sick." The various organs of the body are considered seriatim, and a brief account is given of the physiology of each, and the principal morbid conditions which may affect them. Students may find it useful when first entering upon the study of medicine after having passed the preliminary examinations in anatomy and physiology. Nurses also who desire to take an intelligent interest in their work will find much that will be useful to them by studying Dr. Emerson's remarks, and will not be needlessly encroaching on those matters which concern only practitioners of medicine. The book will serve as an introduction to the more detailed text-books on pathology and clinical medicine.

Infant Feeding by Artificial Means. By S. H. SADLER. Third edition. London: George Routledge and Sons, Limited. New York: E. P. Dutton and Co. 1909. Pp. 253. Price 3s. 6d.—It would, in our opinion, have been wiser to allow this little book on infant-feeding to remain in obscurity. At no time did it serve any useful purpose, much less does it do so at the present moment when a large section of the intelligent public take the subject with which it deals with a considerable amount of seriousness. The preceding edition was published in the

year 1896. Since that date infant-feeding has been reduced if not to an exact science, at least to a scientific art, but the third edition of Mrs. Sadler's work, which lies before us, is merely a reprint or republication of the crude and inexact compilation of 1896. We have compared the two editions carefully and we detect no differences, except that in the present edition there is a six-page appendix, the first half of which is a digest of an article from the pen of Sir Almroth Wright published in THE LANCET of July 22nd, 1893—which certainly ought to have been included in the last edition, while the second half is an article on "The Modern Use of Asses' Milk in Infant Feeding." This article is no ornament to the book; it is written by M. Nicolas Riotte, "Fournisseur des Hôpitaux," and in spite of the fact that the directness of the appeal is somewhat mitigated by the elegance of the original French, it is little less than a commercial advertisement of the milk he furnishes to the hospitals. reader would no doubt appreciate an explanatory note on the statement that "asses' milk is of a very volatile nature" and always should be given to the infant immediately it is taken from the ass. Returning again to the body of the text which has been reprinted or republished, we cannot help drawing attention to the undesirability of there appearing in the pages of a book which is intended to instruct the ignorant an illustration and a description of a "tube-bottle"; if this was an offence in 1896, it is almost a crime in 1909. Mrs. Sadler says, "almost all medical men are against using cream diluted with water" as an exclusive diet for an infant. Surely this was not true even in 1896? Had we not considered this little book likely to prove a most dangerous instrument of instruction in the hands of a young and ignorant mother we should have hesitated to emphasise defects in the work which are obvious to anyone acquainted with the rudiments of infant-feeding.

The Prodigal Father. By J. STORER CLOUSTON. London: Mills and Boon, Limited. 1909. Pp. 303. Price 6s. -Mr. Storer Clouston has again written a thoroughly amusing story. To the end of his career he may suffer from the great and well-deserved success of "The Lunatic at Large," because his readers will always compare whatever he does with that drollest of stories, and will be trying him by a standard which any author must always have difficulty in reaching. Frankly, we do not consider that "The Prodigal Father" is as funny as "The Lunatic at Large," because the means employed to produce the farcical situations call for too much credulity from the reader, while in the earlier book the wildest extravagances of the charming maniac and his absurd German friend could be believed in without demanding us also to believe in the suspension of ordinary physical laws. "The Prodigal Father" is the story of a parent who underwent unorthodox medical treatment which had the effect of making him grow younger, the transformation taking place gradually, and not suddenly as in the classic case of Mr. Bultitude. A number of absurd situations are produced, but Mr. Clouston's protagonist, unlike Mr. Bultitude, is always on the winning side. He undergoes no humiliations, he triumphs successfully in some tight social places, and having started on the first page as a respectable merchant of advanced middle age, is found on the last page requesting to be sent to a good school. We congratulate Mr. Clouston upon his wit and high spirits, and recommend the book to our readers as a diversion and not as a therapeutical note.

JOURNALS AND MAGAZINES.

moment when a large section of the intelligent public take the subject with which it deals with a considerable amount of seriousness. The preceding edition was published in the

M.A., F.R.S., and E. A. MINCHIN, M.A. With lithographic plates and text figures. New Series, No. 213 (Vol. LIV., Part I.). London: J. and A. Churchill. 1909. Price 10s. net. -This number contains the three following memoirs: 1. The Development and Origin of the Respiratory Organs in Araneze, by F. W. Purcell, Ph.D., of Bergvliet, near Cape Town, with seven plates and seven text figures. The lungbooks of Arachnidæ have been regarded as gills, and then as a special form of trachea, and finally as being of branchial origin. Dr. Purcell's investigations were made on 41 species chiefly collected in the neighbourhood of Berlin, and especially the embryos and young of Sitticus (Attus) floricola. He gives a table showing the homologues of the abdominal appendages and their derivatives in scorpions, tetrapneumonous araneæ, dipneumonous araneæ, pedipalpi and in the Japanese limulus. He corroborates the statement in a previous communication that none of the lungbooks in scorpions are actually homologous with the two pairs in spiders, and further that the two pairs of lung-books in spiders are represented by external appendages in the adult scorpion, and the two anterior pairs of lung-books in the latter by external appendages in the adult spider. Further, he is of opinion that the lung-books of the scorpions and those of the spiders must have been derived from branchiate appendages quite independently of each other, and that the terrestrial arachnids are not monophyletic, but must have had at least a diphyletic origin from primitive aquatic arachnida with six pairs of abdominal branchiate appendages on the eighth to the thirteenth somites. Lastly he considers that the pulmonate arachnids comprise two distinct groups which have separately originated from branchiate ancestors: (1) the scorpionidæ; and (2) the araneæ and the pedipalpi. He agrees with Pocock that the scorpiones, although the most primitive of all of the terrestrial arachnida, could not have been the ancestors of any other orders of arachnida because the useful tail would not be likely to be lost. He adds that so far as our knowledge goes we may say that there is no evidence of any sort to indicate that the spinners of the araneæ were derived from sunken-in lung-books or that the spinous segments ever possessed such organs in any ancestral form of this order. Numerous and excellent drawings illustrate the various points to which reference is made. 2. Notes on the Nephridia of Dinophilus and of the Larvæ of Polygordius, Echiurus, and Phoronis, by E. S. Goodrich, F.R.S., Fellow of Merton College, Oxford, with a plate. 3. Further Notes on a Trypanosome found in the Alimentary Tract of Pontobdella Muricata, by Muriel Robertson, M.A., Carnegie Research Fellow, with a plate and five textfigures.

The Bristol Medico-Chirurgical Journal.—I the September number of this journal is published an interesting article by Mr. Ernest W. Hey Groves on Tuberculosis of the Colon, which he divides, following Hartmann, into an enteroperitoneal and a hyperplastic form. The condition is not very common and is of considerable interest as being often confounded with cancer. Mr. Groves reports two cases of the condition—one of which recovered after operation, while the other finally succumbed. Dr. J. M. Fortescue-Brickdale contributes a paper on Some of the Modern Hypnotic Drugs, which he classifies according to their clinical features. Dr. P. Watson Williams writes on Some Points in the Technique of the Radical Operation for Chronic Purulent Otitis Media, Dr. F. G. Thomson on Referred Cardiac Pain, and Dr. George H. Almond on Theoretical Considerations as to Pulmonary Percussion.

The Birmingham Medical Review. - The publication of Dr. David Fraser Harris's lectures on the essentials of physiological history is continued in the August issue of this review. The present instalment deals with the history of | to be held in Paris next year.

our knowledge of the nervous system, which was practically founded by Galen, and was carried on by the Alexandrines, and later by the school of Bologna. Of our own countrymen Willis, Hales, Bell, and Marshall Hall are honourably mentioned, but until recent years research in this field was apparently not much advanced in these islands.

Looking Back.

FROM

THE LANCET, SATURDAY, Oct. 15th, 1881.

COMMON PRACTICE IN IRELAND OF GIVING DIGITALIS IN EPILEPSY.

To the Editor of THE LANCET.

SIR,—Having acquired much useful information from your invaluable Journal during the last four years while pursuing my medical education in this metropolis, and knowing that your liberal pages are as open to the humble letter of the student as to the scientific communications of the more experienced members of our profession, I am induced to make a few remarks on the use of digitalis in the treatment of epilepsy, corroborative of Dr. Sharkey's statements, which appeared in THE LANCET of the 7th of August last.

It is a fact well known to most medical men practising in Ireland, that the peasantry are well acquainted with the efficacy of digitalis, or luss more, as they call it, in the cure of epileptic children. When the poor child becomes subject to this distressing affection, it is considered to be fairy-stricken, i.e., that the child has been taken away, and an old fairy sent in its place. The unfortunate being is then neglected, the extremities waste away, the abdomen is generally tumid, and the features actually assume the appearance of old age. A consultation of old women is held, with a ban lieughth, or woman skilled in herbs, as president. The fairy is counselled to leave the house quietly, and send back the people's child. If he continue obstinate, they first threaten him with the milder punishment of placing his breech (the "pelvic extremity" of -) on a red-hot shovel, or roasting him at the fire. These threats being disregarded, and the fairy's presence being still ascertained by the recurrence of the fits, he is at last doomed to take the digitalis, a dose considered most obnoxious to the fairy tribe. A handful of the fresh leaves is boiled in milk, and the decoction is strained, and when cold, poured down the poor fairy's throat, vi et armis. The consequence is, in nine cases out of ten, that a cure is effected, the child soon recovers its natural strength and appearance, and the parents believe that the luss more has banished the fairy, and that their own child is restored to

Should you, Mr. Editor, honour me by giving these remarks a place in your widely-circulated Journal, you will confer a favour on one who, in common with his fellow labourers in the pursuit of science, has always found you their advocate and friend.

I have the honour to remain, Sir, Your obedient servant, A MEDICAL STUDENT.*

* Our correspondent has enclosed us his name and address. - ED. L.

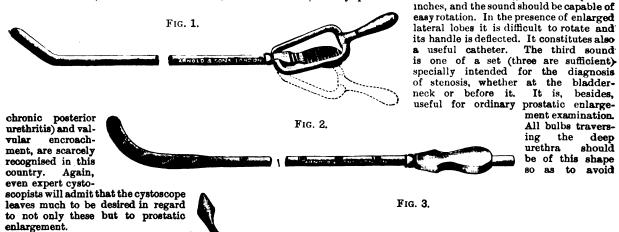
SCHOOL HYGIENE IN BRIGHTON.—The Brighton education authority has recently been showing increased interest in the hygiene of the children under its control, and has made the study of hygiene a separate subject in the school curriculum. The committee has informed a member that it will take into consideration the question of open-air schools, and Dr. J. Lambert, the school medical officer, has received an instruction to visit as an experiment the homes of any children reported to be suffering from tuberculosis and to report to the committee at the expiration of three months. The same gentleman and Mr. H. Gervis, a medical colleague on the education committee, have been appointed delegates to the International Congress on School Hygiene which is

Hew Inbentions.

SOUNDS FOR THE DIAGNOSIS OF OBSTRUCTIONS AT AND ABOUT THE BLADDER-NECK.

THE anatomy of these obstructive states is important to flat and broad where it lies in the prostatic urethra. Indetermine. Some, such as fibrous stenosis (so common after healthy parts urine should flow at eight and a quarter

traverse the healthy urethra in all directions without deviation. I withdraw it by the small handle shown in the frame. The second instrument is a long, hollow, graduated sound, flat and broad where it lies in the prostatic urethra. In healthy parts urine should flow at eight and a quarter



The sounds illustrated have been of much use to me for years past. I offer them as being simple, useful, inexpensive, and requiring no technique.

cal skill. The first is a modification of the ordinary sound. An old and well-known aid to determine enlarged "middle" lobe was the withdrawal of a sound in the axis of the urethra, when its deviation afforded some evidence. The test is unfair and rough, whereas the use of the sound shown will prove of real use. It should

hitching on the layers of the triangular ligament on withdrawal. The instruments are made by Meesrs. Arnold and Sons, West Smithfield, London, E.C.

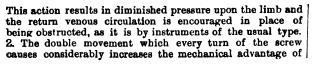
JAMES MACMUNN, M.R.C.P. Irel., M.R.O.S. Finsbury-pavement, B.C.

A DOUBLE-ACTION ALAR TOURNIQUET.

This tourniquet, as its name implies, is a double-action one and appears to present several distinct advantages over similar instruments in previous use. 1. The motion of screwing down the pad on the wounded vessel at the same time raises two metal wings at either side of the instrument.

the latter. The vessel is thus rapidly compressed by a few turns of the screw. 3. The bearing points of the instrument are so far apart that the skin cannot be nipped up between them, however rapidly it is applied. In use the pad should be applied directly over and parallel to the course of the vessel and the tape should be well tightened around the limb before the instrument is screwed down.







The instrument is made by John Weiss and Son, Limited, 287, Oxford-street, London, W.

P. N. O'GORMAN LALOR, M.B., B.Ch. R.U.I., Major, Indian Medical Service.

THE LANCET.

LONDON: SATURDAY, OCTOBER 16, 1909.

The Limitations of Operations.

THE progress of surgery during the last 30 years has been vast, and the results have been marvellous, so that it is hardly surprising that the idea has arisen in some minds that surgery has no boundaries, and that it will yearly spread more widely mainly at the expense of medicine until it forms almost the whole of the healing art. Dr. OSLER has just called our attention to the fact that the developments of medicine proper have been equally great, which is in other words a reminder to us that surgery has its limitations. Wonderful though its progress has been, and great its achievement, yet it must be acknowledged that in many ways it has limits beyond which it cannot pass. It can no more than medicine set aside the influence, for example, of old age when the reparative powers are to a great extent impaired. It is true that even in advanced age a broken bone will heal in most cases as quickly and as thoroughly as in a young child, but many tissues show a slackness in repair that betrays the harmful effect of old age. The wrinkled soft skin of the aged is typical of many of the tissues, and where elasticity should be specially marked there we find it most noticeably absent; for instance, ligaments lose their lissomness. But the chief change is seen in the arteries, where calcareous salts have been deposited both in the inner and the middle coats. The one-time highly elastic vessel has become a rigid tube. This is a potent factor in limiting the operations which can be performed on the old. In THE LANCET of Sept. 25th we recorded an operation done for the first time in a human being, consideration of which has led to these comments, for it seems to us that the experiment was one the result of which cannot be taken as a general lesson in surgery owing to the age and condition of the subject.

In consequence of a commencing gangrene of the foot in a feeble old man, 69 years of age, Mr. D. J. ARMOUR and Mr. E. A. SMITH performed arterio-venous anastomosis of the femoral vessels in order to carry blood to the limb through the vein. The patient was no loser by the brave attempt at conservative surgery. The arteriovenous anastomosis was successful, a result which does great credit to the ingenuity of the operators, but the attempt to save the limb failed, and those who read the account cannot doubt that the main cause of this failure was the rigidity of the arteries owing to calcareous degeneration. This is so common an accompaniment of old age that it must diminish to a very great extent the possibilities of operating. Even in many of those who can hardly be called aged rigidity of the arteries exists to a certain degree, and though its importance varies much with the operation to be performed it must

to a greater or lesser extent weigh against the desirability of operating at all. The inability of accommodating itself to the varying needs of the tissues which it supplies is the cardinal fault of a rigid artery, and an operation gives rise to great variations in the amount of blood-supply. General feebleness of a patient, too, is another important factor in limiting the surgeon's power of operating, but this, unfortunately, cannot always be taken into full account by the surgeon who most usually has to recognise that death will close the scene unless he interferes. Everyone knows that the risks of an operation are vastly increased if the patient is not in a condition to withstand the shock of the operation itself or the depression which so commonly follows in its train, due partly to loss of blood and partly to the influence on the nervous system. In some conditions of ill-health the body, as a whole, and the individual organs and tissues, show no resilience after the shock of the operation; they fail to respond to the demands made on them, and attempts at repair are almost wanting. In such conditions as these, rare fortunately in a marked degree, but by no means uncommonly seen slightly developed, the efforts of the surgeon are heavily handicapped, as they are when he has to operate in the presence of serious disease of important organs. Of one of the most serious hindrances to operation, hæmophilia, we may also say a few words. However skilfully the surgeon has performed the operation the tendency to bleed will assuredly prevent success, and therefore it has been the rule never to operate on a known hamophiliac unless the operation is absolutely essential to life. But recently it has been reported that the injection of a foreign serum such as that of the horse will prevent the persistent bleeding in these cases. If an extended trial of this method should confirm the mode of treatment a great step will have been taken in making operations possible in bleeders, whose condition at the present time is very sad. For sometimes such a patient will know that his tendency adds an enormous risk to a procedure which he must undergo, and his condition of mind, which serves as a factor in the decision as to the desirability of operating, becomes unfortunate. For the anxious, nervous patient will not stand a surgical treatment which in a stolid unimaginative man may be followed by complete success. Those who have had experience of lunatic asylums will probably agree that most of the inmates recover readily, even after severe operations, though some of the more acute cases bear operations badly.

The impairment of function by the removal of an excessive quantity of an organ will always tend to limit the activity of a surgeon in certain cases, but surgeons are unable at present to say what exactly are the limits of the possible in different directions. With one functioning kidney a healthy life can be passed, but whether life can be maintained with much less than one kidney has not yet been determined. We have somewhat more exact knowledge as to the extent of bowel which may be removed with impunity. The large intestine can be ablated completely and the patient seems to be none the worse; indeed, in some conditions the patient is much the better for the loss. Of the small intestine many cases are recorded where two or three feet have been excised without any noticeable impairment of function, but when the

amount of bowel removed exceeds this the result is not the same. Perhaps five or six feet may be excised without any marked effect, but even in these cases wasting to a greater or less extent may occur, while if more than this quantity be removed it is doubtful if life can be maintained for long. The power of absorption is so greatly diminished that sufficient material is not taken up from the shortened bowel. Recent progress in anæsthesia has rendered it possible for the surgeon to undertake operations which he would have looked at askance had only the older methods of preventing pain been available. Local anæsthesia has a great future before it, and the appreciation of the safety of very dilute solutions has justified surgeons in undertaking even extensive operations with its assistance. In this connexion may by mentioned Bier's method of producing ansesthesia in the extremities, and a paper by Mr. C. M. PAGE and Mr. S. G. MACDONALD describing this ingenious procedure will be found in another part of this issue (p. 1135). The production of extensive anæsthesia by means of the intraspinal injection of certain substances, such as stovaine and novocain, has opened a wide field of activity to the surgeon, and it is not improbable that improvements of technique will enhance its value greatly. Even at present the surgeon can operate in many cases in which the general condition of the patient would have otherwise gone far to negative any operative procedure. The developments in the facilities for operation are certainly large and getting larger, so that the surgeon of to-day must be on his guard against undertaking operations the just value of which, in gain to the patient in comfort and function, has not been estimated and balanced against the risk and the annoyance of the interference. The true extension of surgery is one thing, but it must not be forgotten that there are the things which ERICHSEN called "operative audacities," though the term would have been applied by him to procedures which are now so part of routine that the surgeon who did not carry them out, the right indications being present, would be a defaulter from ideal practice.

The Opening Addresses.

OLD customs die hard, and although half of the London schools of medicine dispensed with the time-honoured formal orations to usher in their present session, yet many schools continue to hold by the ancient observance. The "opening lecturer" can perform one of two functions. He can seize the rare opportunity of presenting to an intelligent section of the lay public the views of the medical profession, or of himself, upon some of the many urgent questions of the day which medicine can help the State to answer; in which case he will limit his remarks to the students whom he is nominally addressing to congratulations on the good sense they have shown in their choice of a profession and on their supreme discrimination in their selection of a school. On the other hand, he may make of the students his primary audience and offer them words of advice and encouragement concerning the study and practice of their future life-work; a discourse of this description may exhort the audience to industry in preparation or it may point to the results of

achievement. The opening addresses which our readers have had the recent opportunity of following have all been built up on one or other of these lines. Several of them contain much useful food for thought for the public, who should be interested in the maintenance of a high standard of medical education for those who are to have the future charge of its bodily welfare. Others have been primarily addressed to the student whom they have instructed in the methods of his training, often with special reference to its defects, whom they have advised as to the manner of work and attitude of mind which will enable him to carry out his education to his ultimate advantage, or whom they have encouraged by pointing either to the mountains of discovery which have been traversed by the medical heroes of the past or to the many misty peaks that still remain for conquest.

Turning to the addresses concerned more especially with medical education, our readers will have found Professor GEORGE MURRAY'S address to the students of Manchester unusually stimulating and instructive. Amongst many interesting points there especially come to mind Professor Murray's advocacy of conferences of medical teachers to ensure a better coördination between the many schools, and his remarks on the migration of students between different German universities, a system which has obvious advantages in imparting breadth of view, but which is counterbalanced, it seems to us, by considerations of convenience that render the adoption of a similar plan a difficult matter in our own country, unless it be by interchange of educational facilities between groups of the metropolitan schools, as was formerly the case. A broad outlook on medicine can be more readily given by postgraduate instruction at many centres, for which Professor MURRAY proved a strong advocate. He would have more practitioners follow the example of Cullen and William HUNTER, who when in partnership made an arrangement that each would alternately spend the winter in study whilst the other carried on the practice. Such a plan could, of course, only be adopted in the rarest instances nowadays, but there seems no reason why partners or even independent practitioners should not arrange with their colleagues to take their practice for a few weeks every third year whilst they took out a post-graduate course and renewed acquaintance with the atmosphere of medical research. Professor MURRAY'S remarks on the teaching of "clinical methods" and of clinical pathology were illustrated by certain American instances which our own teachers of these important subjects may do well to note, but at the same time he entered a plea for the formal lecture which has been abolished in the transatlantic schools and has been threatened with extinction in our own country, at least south of the Tweed. Professor MURRAY claimed that carefully planned and properly illustrated lecture courses may help the student with an imaginative faculty to acquire a power of mental visualisation over the processes of disease. A valuable suggestion was that in different schools certain groups of subjects should be studied systematically in the ward and the laboratory by men desiring to prepare their thesis for the doctorate. It is highly important that in the present inadequate state of endowment of medical research all

available facilities should be used to their utmost capacity and to a coordinated end, and we commend the suggestion to the authorities of the medical schools as worth a trial. No more striking instance could have been brought forward as showing the desirability of such a step than the unsatisfactory state of our knowledge of pneumonia, a disease which kills 40,000 people every year in England and Wales alone, and which some believe that HIPPOCRATES could treat as well as we can, even though he could not localise its seat. Of the few words on conduct which were addressed to the Manchester students we may repeat those which Professor MURRAY quoted from Professor MARX: "The best regulation for the medical profession consists in dignified humanity; this will prescribe in its simplest manner its relations to the State, to science, to the public.' Passing from Manchester to Liverpool we find Mr. C. A. BALLANCE addressing the medical faculty of the University and recommending to their attention the cultivation not only of humanity but of "the humanities," the study of books no less than of men. Medicine is not a thing apart from life; the two must ever be in the closest touch, and the physician is the man of all others who should hold nothing of human interest foreign to his own. Mr. BALLANCE did well to press home the need of general culture and knowledge of men to his student audience. His remarks on genius, on work, on play, and on attention will be found on another page of this issue of THE LANCET garnished with many gleanings from the storehouse of English letters, of which none is more inspiring than the stately address to PERSEUS which CHARLES KINGSLEY put in the mouth of PALLAS ATHENÉ.

At St. Mary's Hospital Dr. H. A. MIERS also gave his hearers some suggestions upon the methods of their study in an address which contained nothing of the conventional. He spoke of "Theories," and advised every student to formulate for himself a theory to explain every observed fact and not to abandon it until he was forced to revise it by the test of further knowledge. The advice is excellent for men of scientific honesty. If it is a little dangerous because some are too ready to find facts to fit their theories, yet we are constrained to bless it when we consider the overloading of the present course of medical study, and those facilities for the mental "spoon-feeding" of the student, to which others of the lecturers referred. The temptation must be strong for the student to acquire many facts without attempting to shape them into any useful edifice of thought, being content to bury the noble faculty of reason beneath the incubus of an artificially swollen memory. We cannot wonder that the Principal of the University of London deplored this tendency, for, as he told his student audience, he considers that men of their age should be in the most original, inventive, and creative stage of their existence. His exhortation to observation and research was thoughtfully expressed, and in speaking later of the inter-relationship of the medical sciences he could have held up no better example than the career of HELMHOLTZ. In this connexion we may direct attention to another opening address published in our present number, although delivered not at a medical school, but before the Medical Society of London, wherein Dr. SAMUEL WEST has some wery pertinent remarks to make on the mutual dependence

of the clinician, the physiologist, and the pathologist. Of the other addresses to students dealing with the means of preparation for the practice of medicine, Sir ISAMBARD OWEN at Bristol unfolded to his audience what may be called the university idea, concerning which no man has more authority to speak. One of his chief points was that the measure of success of a university is to be found not so much in the number of its graduates as in the amount of post-graduate work done within its walls. CLIFFORD ALLBUTT in his address at Charing Cross spoke in special praise of anatomy tempered by athletics, and told the wholesome truth that drudgery is a necessary condition of the proper acquirement of medical knowledge as of all other worth the having. At Middlesex Hospital Dr. J. S. GOODALL stood rather as the champion of physiology and made some courageous remarks about its teaching, with which we are in complete accord, but which can only be made effective by the goodwill of "intermediate" examiners. He passed in review the many stages of the medical student's education, and said this last word to the qualified man, "Don't make friends of your patients or patients of your friends," advice which few practitioners, we think, will be prepared to follow, though some might show good reason for doing so.

The remaining addresses were concerned with achievement. Dr. H. D. ROLLESTON at St. George's frankly took for his text "Let us now praise famous men," and a splendid roll he was able to call from the shades of HUNTER'S hospital. BRODIE, BAILLIE, THOMAS YOUNG, EDWARD JENNER were only a few of them, and a long list of those men of his school who rest from their labours he was able to add many names eminent in the living world of English medicine. At the Medical School of University College Hospital Sir JOHN TWEEDY surveyed the earlier achievements of medicine from the days of the Greeks and Alexandrians, through its dark ages down to the coming of the scientific conception of disease, which he showed was based on the experimental method and on that alone, and it is to be hoped that those of the general public who heard his address or read it in the newspapers will not forget his forcible lesson upon the need of continual research for the progress of knowledge and the advantage of humanity. At the London School of Medicine for Women Mrs. FAWCETT commemorated the work of the resolute women who opened the medical profession to their sisters this country, and showed forth the worth of the pioneer spirit, in whatever field it may be displayed. Yet another address, which also dealt with achieve ment, was delivered at Leeds, and we are tempted to award it the laurels of the October oratory. Although it came not from a medical man but from a judge of the Appeal Court, it showed an intimate understanding of certain great principles of health and disease which would have been amazing in a man whose researches have lain rather in civil than in natural law were it not for the knowledge of the methods and recent developments of curative science which Lord Justice Fletcher Moulton showed in his memorable vindication of their utility before the recent Royal Commission on Vivisection. No purpose will be gained by

summarising his address which we printed in full last week. Those who have not read it should know that they will find in it a statement of all the chief facts that have been certainly ascertained in the fields of bacteriological research and in the study of immunity, expressed in language of measured eloquence through which there breathes the true romance of scientific progress of which its speaker has clearly felt the thrill. We will recall one instance only of Lord Justice Moulton's powers of exposition, the passage in which he likens the man attacked with a sharp microbic invasion to a ship severely buffeted by the sea. The further she heels over, the stronger becomes the force of gravity known as the "righting couple," until she swings back once more to equilibrium. So in the human body attacked by a bacterial infection, the multiplication of the invading organisms calls forth Nature's own whip to scourge them, and the antibacterial forces of the body are generated in increasing quantity by the increasing violence of the bacterial attack. This is only the outline of the simile which was built up in a masterly manner in Lord Justice Moulton's address before he passed on to describe the methods of therapeutic inoculation by which our science and art can reinforce in many instances the natural defences of the body, and how this method of treatment has perhaps given us a weapon against the majority of diseases when its possibilities have been fully developed. In this account of the achievements of modern medicine given by a scientific judge we seem to read the fulfilment of the prophecy made 300 years ago by the greatest of English lawyers, the man who first opened the eyes of our own profession to the necessity of experiment for the advancement of their learning: "There is no doubt that if the physicians will learn and use the true approaches and avenues of Nature, they may assume as much as the poet saith :-

> ' Et quoniam variant morbi, variablemus artes : Mille mali species, mille salutis erunt.'''

The Employment of Patients with Arrested Tuberculosis.

THE crusade against tuberculosis is being carried on by both the profession and the public with an energy that is paralleled in the history of humanitarian movements only by the crusade against alcoholism. Every phase of the problem seems to have been discussed exhaustively over and over again. But there is one point which has not received adequate attention—the employment of patients whose tuberculosis has been arrested. In most cases the former employment is unsuitable because it has been a factor in the production of the disease; to return to it means to court a relapse. To abandon a calling in which skill has been acquired and learn another is difficult and entails pecuniary loss which few patients can bear. To join the overcrowded ranks of unskilled labour, where even the healthy often fail, is not more feasible. The prescription of a healthy open-air life is too often a counsel of perfection. If the patient is to follow it the employment must be provided for him. "Back to the land" is one of the remedies of the present-day reformer for the evil of unemployment. But farm colonies of the unemployed

are economically a failure. Would colonies of patients convalescent from tuberculosis not be a still greater failure?

In the Johns Hopkins Hospital Bulletin for August Dr. A. M. FORSTER publishes an article on the employment of patients with arrested tuberculosis which shows that the problem is not so hopeless as might be supposed. The difficulties in America are exactly the same as in this country. There many efforts are being made tocause the poor to migrate to the country. But lack of funds, ignorance and prejudice, lack of training in farm work, and the disagreeable aspects of country life all tend to retard progress. However, the convalescent consumptive who has left a sanatorium presents some differences from the ordinary city worker. He has been compelled for a time to give up his old conditions of life and been placed under a new discipline. Agricultural work, suited to his strength, will only be a continuation of the discipline—the discipline on which he knows his life depends. If the patient has been treated by graduated labour, which Dr. M. S. PATERSON has shown at the Frimley Sanatorium of the Brompton Hospital to be so beneficial, he can well undertake such work. There is one form of agriculture which the modern growth of urban life demands more and more, and which is particularly suitable for convalescent consumptives-market gardening. There is great room for its development in this country and in America, where both countries are behind the state of perfection to which market gardening has been brought in France and Japan. In many cases an entire family can live upon an acre of land. The work is not laborious, and as it is entirely open-air is very healthy. At the Eudowood Sanatorium, Towson, Maryland, of which Dr. FORSTER is superintendent, farm work has been carried on for three years with gratifying results. The system of graduated labour of Dr. Paterson was adopted-Some 50 acres of land in a very depleted condition were attached to the sanatorium. With the aid of the patients and two healthy negroes, who did the heavy work, operations were commenced. A barn and stable were built and a herd of cows added. In the second year the farm produced products of the value of 4000 dollars at a cost of 3400 dollars. Then an adjacent farm of 100 acres was added and a colony of ten. patients under the direction of a practical farmer was established. Of these men four had been tailors, one a shoemaker, one a moulder, one a blacksmith, and one a schoolboy. They formed a strange mixture of races—two native Americans, one Russian-Jew, one Pole, one Roumanian, three Irishmen, and two Germans. In five the disease had been apparently cured; in four moderately advanced and arrested; and in one far advanced and arrested. They all improved and it was found possible to pay them 10 dollars a month wages. Produce of the value of 6000 dollars was raised at a cost of 5000 dollars. Fruit trees were planted and not only was the sanatorium supplied with all its vegetables and milk but a large surplus of vegetables was sold. As a special advantage of the farm colony is that a tuberculous family can be placed on a farm to work without breaking home ties, we may find in this direction the solution of a very difficult

Annotations.

"Ne quid nimis."

THE ASSURANCE COMPANIES BILL AND INDUSTRIAL ASSURANCE.

It is much to be regretted that the Assurance Companies Bill, which has just left the Lords and is now awaiting an opportunity for consideration in the Commons, makes no attempt to deal with the serious evils connected with the present system of industrial insurance. The Bill, indeed, provides additional facilities for converting large collecting societies into industrial assurance companies; it, moreover, in Clause 36, proposes to enact that no policy, effected before the passing of the Act with any collecting society or industrial assurance company, shall be held to be void because the person effecting the policy had not at the time the policy was effected an insurable interest in the life of the person insured, if the person who took out the policy had at the time a bona-fide expectation that he would incur expenses in connexion with the death or funeral of the assured, and if the sum assured is not unreasonable for the purpose of covering such expenses. This provision was probably inserted in the Bill in the interest of present policy-holders, but its result would undoubtedly be to protect a large proportion of policies having their origin in the spirit of gambling, which is so serious a drawback to the present system of industrial insurance. It is much to be hoped that when this Bill is considered in the House of Commons some attempt will be made to deal with the undoubtedly difficult, but equally important, subject of insurable interest, especially with reference to the insurance of infants and young children. It was distinctly satisfactory to note that at the recent Trades Union Congress the subject of industrial insurance was discussed in a manner which proved that the members of trades unions are fully alive to the evils of the present system. The President of this Congress (Mr. D. J. Shackleton, M.P.) moved the following resolution :-

Having regard to the serious nature of the illegal practices connected with industrial insurance, which have led to widespread gambling in human lives, this Congress calls upon His Majesty's Government to institute an inquiry by means of a Royal Commission or a Committee with a view to legislation to prohibit such illegal practices.

Mr. Shackleton assured the Congress that its Parliamentary Committee would strenuously oppose the Assurance Companies Bill, then under consideration in the House of Lords, until some such inquiry had been held, as the facts of the case were too serious to be longer ignored. He asserted that it could be proved from the statements of insurance managers that fully 40 per cent. of the existing industrial policies were illegal. He claimed some consideration for those who were tempted by the insurance agents to take out policies, and who lost sight of the possibility of being unable to maintain the weekly payments; and also some protection for wives who were often persuaded to take out policies without their husband's knowledge. This resolution was naturally opposed by the representatives of the National Union of Assurance Agents, but on the ground that the Parliamentary Committee of the Congress was attacking a system and not individual agents the motion was approved and adopted. There can be no doubt that the proposed inquiry, in the interest of the industrial classes, should embrace consideration of the wasteful extravagance of the present system, under which the annual cost of commission to agents and the expenses of management are nearly equal to half the amount of the annual premiums, in spite of which most of the companies pay large a great extent the result of ignorance and neglect

industrial assurance offices and collecting societies shall in future report annually the number of lapsed policies, which involve heavy loss to the industrial classes and large profit to the companies and societies undertaking this class of assurance. Such an inquiry as was demanded by the recent Trades Union Congress is on many grounds urgently desirable. and there is now good ground for hoping that the Government may accede to this request of the Labour Members, who undoubtedly represent the opinions and wishes of the industrial classes on this subject and whose views are in accord with medical opinion.

A COLD SUMMER AND THE LOW DEATH-RATE.

THE mean temperature of the air at the Royal Observatory. Greenwich, was below the average for the corresponding period of 65 years on no fewer than 63 of the 91 days during the three months ending with September last. The mean temperature for this summer quarter did not exceed 58 · 7° F., and was 1.70 below the average temperature in 65 years. The mean temperature of the past summer was lower than that of the corresponding period in any year since the memorably cold summer of 1860. During last quarter 7.4 inches of rain were measured at Greenwich on 47 of the 91 days in the quarter, against an average of 5.8 inches on 33 days in the ten preceding summer quarters of 1899-1908. During the past summer the temperature was therefore exceptionally low and the rainfall was considerably above the average. It is satisfactory, but not surprising, to find that in accordance with previous experience the unseasonably low temperature and excessive rainfall during last quarter were conducive to a death-rate distinctly below the average. The mean annual rate of mortality during the 13 weeks of last quarter in the 76 largest English towns, with an estimated population of 16,445,281, did not exceed 11.9 per 1000, which is the lowest recorded rate in these towns in any previous summer quarter. This rate was, moreover, so much as 3.0 per 1000 below the mean rate in these towns in the summer quarters of the five previous years 1904-08, in which quarters the rate ranged from 17.5 in 1904 to 12.2 in 1907. The temperature and rainfall during the summer quarter of the year invariably exercise a controlling influence on the death-rate, more especially of infants, through the fatality of what is known as summer diarrhœa. The deaths of infants under one year of age in the 76 English towns during last quarter were equal to 120 per 1000 registered births, against 109 in the corresponding period in 1907, and 145 per 1000 in 1908. It is not easy to account for the excess of infant mortality in these towns during last quarter, compared with that recorded in the corresponding period in 1907, when the temperature was higher and the rainfall was exceptionally small. It is a fact, however, that the fatality of infantile diarrheea in the 76 towns was greater during last quarter than in the same period of 1907, although it was considerably below the average fatality in recent summer quarters. The mean annual death-rate from the principal epidemic diseases in the 76 towns during last quarter was equal to 1.60 per 1000, against 1.47 and 2.35 in the corresponding periods of 1907 and 1908. The death-rate from these diseases in the summer quarter of the year, as well as the rate of infant mortality, are mainly governed by the fatality of diarrhoea, more especially in urban populations. Thus, of the 6557 deaths referred to the principal epidemic diseases in the 76 towns during last quarter, 3976 were attributed to diarrhœa, against 2335 and 6929 respectively in the corresponding quarters of 1907 and 1908. The fatality of infantile diarrhoea is to dividends. It should, moreover, be enacted that all in the treatment of infants, and in view of the

recently increasing efforts of local authorities to combat this ignorance and neglect, it is disappointing to find that, under meteorological conditions exceptionally favourable, the death-rate from this cause last quarter should have considerably exceeded the rate recorded in the corresponding period of 1907, although the death-rate from all causes was lower. The forthcoming Registrar-General's return relating to the past quarter will presumably show the usual wide variations among the several towns in the fatality of diarrhea and in the rate of infant mortality. The causes of these variations have never yet been fully and satisfactorily explained, although they obviously point to corresponding variations in the care and treatment of the infants.

"THE DAY OF SMALL THINGS."

Dr. May Thorne delivered the inaugural address at the fifth annual public meeting of the Association of Women Pharmacists at the premises of the Pharmaceutical Society on Oct. 8th, taking for her text "The Power of Little Things." She first illustrated it from the realm of Medicine, showing what havoc has been, and is being, wrought in the human race by the tubercle bacillus, one of the least of all little things, and how a constant attention to methods of healthy living, which some people are tempted to consider of small importance, is our chief safeguard against the unseen but deadly attack. Her next example was the plague, which was at one time thought to be due to the presence of infected rats, whereas now the rats are believed to be free from the disease themselves but to be the carriers of fleas, which, although no human eye can see them without powerful aid, are able to harbour and spread broadcast the seeds of a terrible infection. Other well-recognised examples were mentioned to show how small insects such as flies and mosquitoes play an important part in the dissemination of disease, and that where the beasts of prey, for all their ill-repute, kill their units, fleas and flies kill their thousands, whilst micro-organisms destroy millions of human lives Other examples of the power of little things were drawn from chemistry, which teaches that by the addition of a molecule the whole character of a substance may be changed, and then Dr. Thorne brought her subject home to her audience by reminding them of what grave issues might arise from the smallest seeming slip in dispensing or writing a prescription. To those who were starting their career in pharmacy Dr. Thorne urged that it is the little things which are often the powerful factors for future good, and lastly, she recalled the word of the Lord which came unto Zechariah the prophet, "For who hath despised the day of small things?"

AN EARLY DEVELOPMENT OF THE GERM THEORY OF DISEASE.

WE have received an interesting communication from Dr. P. Fusco of Rome, who desires to call the attention of the present generation of English medical men to the views on the germinal origin of infective diseases which were held by the late distinguished physiologist Dr. Lionel Beale, who was without doubt one of the most brilliant microscopists that this country has known. In reading Beale's work on "Disease Germs, their Nature and Origin" 1 Dr. Fusco has been much struck by its author's apparent prevision of the most modern conceptions of bacterial disease, a science which at the time of his writing the book was, of course, in its infancy. It is true that nearly ten years before Davaine had suggested the filiform bodies occurring in the blood of animals suffering from anthrax to be the

cause of that disease, but it was not until five years later that Pasteur started his investigations on the subject, under the impetus of Koch's experiments and of his own discoveries in connexion with silkworm disease. It is, indeed, somewhat surprising that the following passage which Dr. Fusco quotes from Beale's book has escaped the recognition of modern bacteriologists: "Some forms of disease germs not only 'protect' the organism from a second invasion of the same kind of germ, but the change induced is a sufficient 'protection' against allied forms. And there is indeed reason to hope that means may be discovered. perhaps by passing it through the bodies of animals, or in some other way, of rendering the poison milder, without destroying its efficacy as a protecting agent—in fact, that we may produce a mild and harmless disease, in order to 'protect' the organism from the chance of suffering and being destroyed by a most virulent and very fatal form of the same malady. We may feel sure, not only that this is possible, but that it will be done. In this direction our work should be unremitting" (loc. out., pp. 227-28). This is indeed a remarkable passage, seeing that Pasteur's experiments on the attenuation of the virus of anthrax and chicken cholera were not made until five years after its publication and the formal announcement of the microbic theory of disease was not made by the great Frenchman in the names of Joubet, Chamberland, and himself until the spring of 1878. In reading the work we have come across other passages no less worthy of notice. On p. 176 we find, "No investigation is likely to be more fruitful in valuable results than a very careful inquiry into the microscopical and chemical characters of the blood just before its invasion by contagious diseases germs, and the alterations effected by them during the period of incubation. There is muchreason to think that certain states of the blood are favourable to the multiplication of the poison, while others, perhaps, render its destruction almost certain." This is so accurate an epitome of our present conception of immunity that its enunciation nearly forty years ago on inductive principles may almost be called a scientific inspiration. But Dr. Beale's book did not confine itself to speculations on the future. He wrote some very practical advice concerning the spread of contagion by infected water, giving directions for its sterilisation and on the desirability of keeping surgical patients and lying-in women separate from cases of infective disease. His remarks on the contagion of syphilis are also most interesting in the light of our recent knowledge. How comes it, then, that his claims to be a pioneer of bacteriology have been so long neglected? The answer lies in the very book from which we have quoted. He was unable to believe that vegetuble bacteria, the minute fungi which he well knew to exist, were the true cause of infective disease. Those who desire to know hisreasons for this opinion will find them on pp. 78 to 84 of the book in question, and we will content ourselves with repeating his conclusion that "the vegetable organisms when present (i.e., bacteria and micrococci)are but accidental concomitants and that a potent poison, not of the nature of a vegetable germ, is present in the animal fluid or solid in which the contagious properties are known to reside." What, then, were the germs which Dr. Beale believed to be the contagious particles of disease? The greater part of his book is devoted to their description. He considered them to be animal "germinal particles" of bioplasm, the living or self-propagating matter of living beings which had undergone a form of degradation, but in doing so had acquired toxic properties and a power of almost indefinite multiplication. He made a bold speculation that their ultimate source was in a human body, that they were in fact originally derived from diseased and degenerated

leucocytes which Dr. Beale considered to be the bioplasm of the blood; but whatever their origin might have been he was convinced of their existence and gives many figures in his book to illustrate their microscopical appearance. As to what were these bodies which he undoubtedly saw we cannot now speculate, but it seems probable that his small blood bioplasts were what we now know as blood platelets. The size of these "animal germs" he put down as 1/100000 of an inch, about $\frac{1}{4}$ μ , and, of course, much smaller than the vegetable bacteria; and he was convinced that these living germs of disease did not arise in the body de novo, whatever may have been their ultimate origin, but were introduced from without. Of their properties he gives the following description, which can be applied with astonishing accuracy to the vegetable bacteria in which he was unable to believe as the true materies morbi: "The contagious virus is living and growing matter: the particles are not directly descended from any form of germinal matter or bioplasm of the infected animal, but they have resulted from the multiplication of particles introduced from without and capable of growing and multiplying in the blood: the particles are so minute that they readily pass through the walls of the capillaries, and multiply freely in the interstices between the tissue elements or epithelial cells: they live and grow at the expense of the various tissue elements." We consider that these sentences alone should rescue Dr. Beale's name from bacteriological oblivion. They were largely the outcome of pure reasoning, and it must be remembered that when this doctrine of the germinal bioplastic cause of disease, which he applied to all the infective fevers, to syphilis, tubercle, and in some sort to cancer, was put forward to refute the theory of the vegetable bacteria none of the cultural and inoculation experiments which resulted in the confirmation of the latter conception of disease had yet been performed. We should like to give further consideration to the many ideas contained in this forgotten volume, but have perhaps quoted enough to introduce it to the notice of those who are interested in the evolution of modern medicine and to recall to memory an original and brilliant thinker who was known to not a few of our readers.

SUNLIGHT IN A TEST-TUBE.

In 1774 a theologian, described as of an eccentric, restless, fiery nature, turned the rays of the sun by means of a magnifying glass upon some red precipitate imprisoned over mercury in a tube. His curiosity was rewarded after a while by the appearance of bubbles of gas, and Joseph Priestley had discovered oxygen. The importance of the discovery to medicine amongst other sciences was, of course, very great. About 120 years later physicists calculated that the heat received by the earth under a high sun and clear sky was equivalent to about 7000 horse-power per acre, but until recently nobody has got a step farther than did Priestley towards utilising this energy for practical purposes. It has been suggested, however, that some day our centres of industrial activity may be transferred to the burning deserts of the Sahara and the value of land determined by its suitability for the reception of traps to catch sunbeams. The practical utilisation of the sun's influence is certainly of far greater concern to the human race than, for instance, aviation. The conquest of the air, like that of the sea, must be dependent upon our supply of energy. Fuel, in the shape of coal and petroleum, is the chief source of energy at the present time, but it is utilised in a clumsy and extravagant way. The tides and waterfalls will no doubt in time be made to do their share, but even the energy of these is insignificant compared

with the enormous energy received from the sun. Is the notion of utilising this energy too chimerical for serious consideration? In face of the measures of success already gained in regard to securing and controlling natura) forces it would surely be over-timid to answer this question in the affirmative. Further, although the investigation of the subject does not hold out the promise of the "sporting time" which experimental aviation appears to give, yet there is a band of busy workers giving keen attention to it. Any day the startling announcement may come that human ingenuity has succeeded in boiling the kettle with but a few minutes' exposure to the accumulated energy of the sun's rays. A bottle of water may set the house on fire just as a pipe may be lighted by means of a glass lens. A comparatively simple experiment, but of great significance, has recently been performed which may mark the beginning of a series of wonderful practical achievements in this direction. It has been shown that by focussing the sun's rays on some crystalline silicon contained in a vacuum in a glass vessel the crystals fused in a few seconds, showing that a temperature of 1450°C. had been obtained. In a similar experiment copper and cast-iron were fused almost instantaneously. The success of the experiments appeared to depend upon the fact that the substances were contained in vessels emptied of air, for on admitting air the temperature did not exceed 675°C. From the test-tube to the steam boiler, the dynamo, and the electric cell is but a step, and Priestley's classic experiment of 1774 may receive a fame not yet reached by any other laboratory success.

THE UTILITY OF EXAMINATION OF THE NOSE AND NASAL SECRETIONS FOR THE DETECTION OF LEPROSY.

Stricker some years ago asserted that the initial lesion of leprosy was a specific ulceration of the cartilaginous septum of the nose, and in view of the fact that the bacillus lepræ is frequently found in the nasal discharges of leprous patients other observers adopted Stricker's opinion. Among these supporters we may mention Dr. Victor Heiser, Director of Health for the Philippine Islands, who in a recently published paper stated that the earliest and most constant symptom observed in the Philippine cases was an ulcer situated on the nasal septum. Among 1200 cases of leprosy taken in sequence at the leper station on the island of Culion he found these ulcers noted in no fewer than 799; and he adds that probably, if very careful and special examination had been made in the other cases, some trace, such as scar tissue, would have been discovered and would have furnished presumptive evidence that ulcers on that site had previously existed. His experience of the examination of a large number of lepers in the Philippines and elsewhere confirms his view of the importance and constancy of this sign, which may be often found, he says, long before there are any other objective or conscious subjective symptoms of the disease. With the object of determining, if possible, whether the views of Stricker and his supporters could be confirmed, and, if so, whether they could be made the basis of some practicable procedure for the detection of incipient leprosy cases, some valuable and interesting researches have lately been made by Dr. Walter R. Brinckerhoff, director of the Leprosy Investigation Station for the Hawaiian Islands, and Dr. W. L. Moore of Honolulu. The results of this inquiry have been recently published in pamphlet form as No. 4 of "Studies upon Leprosy," under the authority of the Government of the United States. The report was also communicated to the Conference on Leprosy held at Bergen in August last. These two observers set themselves the task of finding out whether the

systematic inspection of the nasal septum and the bacteriological examination of the nasal secretions of a large number of individuals belonging to a race known to be susceptible to leprosy would reveal early cases of the disease which would pass undetected by other ordinary methods of investigation; and whether, when an early case of leprosy is under observation it could be said that the malady could have been discovered by examination of the nasal septum and the nasal secretions alone. For this purpose the investigators inspected the nasal septum and examined bacteriologically the nasal discharges of upwards of 700 persons, 400 of them native Hawaiians, and some of them the children of leprous parents, living in seven public institutions. They also examined a number of patients who were attending the Free Dispensary and the Public Hospital at Honolulu. Dr. Brinckerhoff and his colleague admit that the majority of those examined were living in public institutions under good hygienic conditions which were unlikely to foster the infection of leprosy; and, moreover, most of them were constantly under some sort of medical supervision, which would probably have detected any of the early manifestations of the disease. The two investigators as a result of their inquiry, so far as it went, formed the opinion that many nasal lesions seen in lepers are of a non-specific character and have no diagnostic value. They also came to the conclusion that no considerable number of individuals in Hawaiian institutions have, as the sole evidence of leprosy, lesions in the nose which are discharging the bacillus lepræ. They therefore feel justified in doubting the value of nasal examination for the discovery of incipient cases of the disease. At the same time they admit that the specific microbe is very frequently found in the nasal discharges of lepers, and the importance of this fact from the prophylactic point of view cannot be too strongly insisted upon; but they point out that in such cases the disease has existed for some time, and they conclude that the existence of nasal ulcers has not necessarily any significance in determining the site of the initial lesion. They do not therefore recommend "wholesale" nasal examinations as a certain means of detecting early cases of leprosy, but they express the opinion that in "clinics" frequented by races which have a high incidence of leprous infection it is advisable that thorough inspection of the nasal septum should form part of the routine examination of all persons applying for medical advice.

BOY AND GIRL LABOUR.

THE question of child labour is one of the greatest importance: first, as regards the health and physique of those who will be the fathers and mothers of the coming generation; and secondly, as regards matters of social economy, for child labour is a fruitful source of production of the loafer and the wastrel in both sexes. An interesting little pamphlet has been issued on the subject by the Women's Industrial Council, written by N. Adler and R. H. Tawney, in which the problem is discussed with a sanity and restraint which are rare among the mass of writings on social reform which are daily poured forth. The authors point out what is well known, that child labour is a prominent cause of unemployment, and, worse, of "unemployability," if we may coin a word. Besides, child labour, especially in the case of boys, tends "to set no end for attainment before the boy, and therefore supplies him with no motive to steadiness and self-improvement." The decline of the apprenticeship system is noted, but as the authors truly say "the real problem of the juvenile worker with which society is faced to-day is not the apprentice at

industrial training is, even ostensibly, conceded." The kind of employment to which too many boy and girl workers are put is stigmatised by the term, "blind alley occupations." Such occupations are, of course, due to two main factors, the one the modern system of division of labour, and the other the stress of modern competition and the natural desire of employers to obtain their labour in the cheapest way. It is far more paying to hire relays of boys to label bottles or to pack soap all day long than to give them any training which will enable them either to move up to a higher position in the same factory, or to find other work in a different one, on attaining the age of 18 years or so. They have learned to do nothing else, and when they ask for men's wages they are dismissed and their places taken by other boys. In this way the unskilled labour market is constantly being filled up. With regard to remedies, the authors divide their suggestions into two classes, legislative reforms and administrative reforms. The former include a series of Acts of Parliament which would firstly abolish the half-time system under 14 years of age as soon as possible and ultimately under 15 years; secondly, would prolong fulltime education up to the age of 15 years; and thirdly, would halve the present hours of labour among boys under the age of 18 years, so that they might use the time thus gained for continued education under a new and improved half-time system. The administrative reforms chiefly deal with the question of the regulation, and, if possible, the abolition, of street-trading for children under the age of 16 years, and the furtherance of attendance at evening classes. In the matter of girl labour, the authors advocate the establishment of more trade schools on the model of the Écoles Municipales Professionnelles such as exist in Paris and other French cities. At present there are 530 girls under trade school teaching in London as against nearly 2000 in Paris. Girls who wish to work later at a skilled trade should be enabled to spend one year at some trade school on leaving the elementary schools. Further, girls who intend to take up unskilled employment or domestic service should be obliged to attend a half-time continuation school for the teaching of such matters as needlework, cookery, and dressmaking. The above-mentioned suggestions seem to us to be well worthy of consideration by our legislators, although we do not assume that they should necessarily be carried out in the absolute form in which they are presented in the pamphlet. But that they form a solid ground-work for muchneeded reforms is indisputable, and we commend the pamphlet to all interested in the question. And no section of the community is more practically interested in "unemployability" than medical men, who see its miserable physical and moral results so close at hand.

[OCT. 16, 1909.

· THE WASSERMANN REACTION IN CARDIAC DISEASE.

THE sero-diagnosis of syphilis devised by Wassermann is proving its value, not merely as an index of syphilitic infection in individual cases, but also as an important witness to the syphilitic nature of certain lesions and maladies whose etiology is still under discussion. The most notable example of this application of the test is seen in the experiments which in various hands have established more firmly than before the importance of syphilis in the production of tabes dorsalis and general paralysis of the insane; and the almost equally vexed question of the importance of syphilis in the production of aortic disease receives new light from the investigators who have applied the serum test to the elucidation of this problem. Chiari's researches showed that in a large proportion of syphilitic persons examined post mortem a productive meso-aortitis was to all, but the boy and girl to whom no opportunity for be found by microscopic investigation. The further

question, answered in part by the researches of Citron 1 and Collins and Sachs,2 is the proportion of all cases of aortic disease attributable to syphilis. The former writer, testing cases of aortic regurgitation by the Wassermann reaction, gained positive results in over 60 per cent., in a proportion larger than that of a history of syphilis. two American physicians using the test in its classic form with liberal controls examined 36 cases in all—cases of aortic insufficiency, aneurysm, congenital cardiac malformation, mitral stenosis, arterio-sclerosis, angina pectoris, and other cardiac disorders. In their five cases of aneurysm they found a positive reaction without exception. There were 13 cases of valvular disease implicating the aortic valves only; in 12 of these the reaction was positive, in 10 pronouncedly so. In five cases the aortic lesion was complicated by disease of the mitral valve; in this group there was one positive reaction with two weakly positive and two negative reactions. In 11 cases of uncomplicated mitral disease a positive reaction was found twice only. From these findings the authors conclude that syphilis is an important factor in the production of cardiac disease, and that it is specially concerned with the genesis of lesions of the aorta and its valves. Here, indeed, syphilis is in all probability the most important exciting cause. The value of the test in its application to individual cases is illustrated by several examples described in detail, and it is interesting to note that only 11 of the 24 patients who reacted positively to the test gave a history of venereal disease.

THE METROPOLITAN WATER-SUPPLY.

THE Water Examiner has issued his report on the condition of the metropolitan water-supply during the month of July, 1909. The mean rainfall for the month, calculated as representing all parts of the Thames basin, was 2.95 inches, being 0.66 of an inch above the average for that month during the previous 26 years. During July the average daily natural flow of the Thames at Teddington Weir was 684 · 6 million gallons, being 141.4 million gallons above the average for the 26 preceding years. The Thames water at Hampton, Molesey, and Sunbury was in good condition during the whole of the month. Dr. A. C. Houston, the director of water examinations of the Metropolitan Board, has made a large number of exhaustive analyses of samples of water from the various sources of supply of the metropolitan area. These comprise chemical analyses of 63 samples of raw river water and of 183 samples of filtered water, also bacteriological analyses of 63 samples of raw water and of 552 samples of filtered water. The details of the analyses and the report as to the conclusions to be drawn are contained in the report by Dr. Houston which is appended. The chemical results showed for filtered waters a very slight deterioration and for the raw waters somewhat less favourable results than for the corresponding period in 1908. The deterioration is evidenced especially by the results of the albuminoid nitrogen test and the test depending on the oxygen absorbed from permanganate. The bacteriological results show that the three raw waters contain fewer bacteria than the average for this period, but the filtered waters often contained an excessive number of bacteria. It is reassuring to learn that the tests for the presence of the bacillus coli are satisfactory for both the raw and filtered waters and compare favourably with the corresponding period for last year. The filtered waters were tested as regards the presence of the bacillus coli in 100 cubic centimetres, and the percentage of negative results for each water is tabulated. A first-class water unpolluted with any sewage

or excremental matter would give 100 per cent. of negative results for the various tests made for the bacilluscoli. None of the filtered waters reach this high standard. The East London (Lee), East London (Thames), and the Rye Common waters give in this order the worst results as regards the presence of the bacillus coli. Dr. Houston is continuing his investigations on the effects of storage of water antecedent to filtration, and the results for July confirm those of previous months as to the very valuable benefit derived from this simple process. The words of his June report are applicable to July—viz.: "It is an underestimate of the actual truth to assert that (at present) a large proportion of the water now being delivered on to the London filter-beds is rendered at least 100 times less impure (bacteriologically), as the result of storage, than the raw river water."

OCULAR THERAPY IN GERMANY.

WE have received several numbers of a journal entitled La Clinique Ophtalmologique, the articles in which are chiefly devoted to therapeutical investigations. Some of these are worthy of special notice. The journal is published in Paris under the editorship of Dr. R. Jocqs, Dr. A. Darier, and Dr. L. Dor. A good idea of the present state of oculartherapeutics in Germany is given by Dr. Darier, who remarks that in that country it is held that the surgeon ought to have some slight knowledge of the diseases of the eye and know when to call in the services of a specialist, as in all cases of septic infections of the cornea, of penetrating wounds, as well as of those in which vision is compromised, where an operation is called for, and where after treatment the question of indemnity is likely to arise. The practitioner who is first called in ought to be able to ascertain the conditions that are present, and to give his reasons for active measures, which may be of great service in the subsequent history of the case, but he should not undertake alonethe responsibility of the after-treatment. Care should be taken that patients suffering from infectious disease, such as gonorrhœal or diphtheritic ophthalmia or acute epidemic conjunctivitis, should not touch their eyes, and that all handkerchiefs, towels, and cloths used by them should be purified. General hygiene and dietetics should be attended to, patients should avoid all violent efforts that may cause congestion of the head, should abstain from excess in alcohol andcoffee, and from mental strain and cold feet, while arrest of the catamenia should be avoided. Diabetes and gout should be treated secundum artem. The urine should be frequently and carefully examined. Moderate action of the bowels should be secured, especially if there be much indican in the urine; personal cleanliness should be enjoined, but hot baths and sudorifics, formerly much recommended, are apt to fatigue. Hot drinks and salicylates are of much service in iritis, choroiditis, and neuritis. Saline baths are often beneficial, especially in those affected with scrofula, and sea air often proves useful. In infectious diseases of the lids topical antiseptic remedies are used, such as solutions of silver nitrate and protargol, and Dr. Darier remarks that the remedy he himself was the first to introduce, argyrol, might well be mentioned. Sulphate of zinc is the sole remedy that seems to have a specific action on the diplo-bacillus. Infections of the globe of the eye are less accessible to antiseptics, the employment of the galvano-cautery being the most efficacious. The intra-ocular application of iodoform is considered very questionable. Serotherapy has been tried in different affections due to specific microbes, but the normal aqueous humour takes up very little antibody and the vitreous humour practically none at all. Ocular diphtheria is almost the only affection which has really benefited by serotherapy. Neither the antipneumococcic serum nor the antistreptococcic

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 American Journal of the Medical Sciences, September, 1909.

has given very satisfactory results. These remedies, however, may, Dr. Darier thinks, exert a paraspecific actionthat is, without being infallible per se, they may prove of great service when combined with topical remedies. The tuberculin of Koch is in very frequent use, primarily from a diagnostic point of view. A milligramme of the old tuberculin injected under the skin produces a general and sometimes a local reaction. If it fails to do so a fresh dose of 5 or perhaps of 10 milligrammes is injected. When once the diagnosis is established the treatment with tuberculin T.R. may be commenced with 1-500th of a milligramme, and be continued with progressive increase in the strength of the dose. Augmentation of the antibodies and of the leucocytes is thus induced. In the contest with ocular infections, in addition to preparations of salicylic acid, there are the methods of mercurial medication, effected by internal administration, friction on the skin, and hypodermic and intravenous injections. Exceptional care should be taken in the administration of mercury in tabetic patients. Preparations of iodine are frequently prescribed, especially in affections of the optic nerve and of the motor nerves, in rheumatism of the uvea and of the sclerotic, in diseases of the vessels, and in hæmorrhages. From 10 to 20 grammes are dissolved in 300 grammes of water and a dessertspoonful is taken in soup or in milk. Hypodermically iodipin is employed. Sometimes large doses, as 10 grammes per diem, will act when smaller doses fail. It will be remembered that calomel insufflation must not be practised whilst preparations of iodine are used. The beneficial effects of various remedies can be intensified by heat, by massage, and by subconjunctival injection. Solutions of from 2 to 4 per cent. of common salt are employed after cocainisation or the instillation of acoine in septic keratitis and parenchymatous keratitis when on the decline. They are not appropriate in cases of iritis Guaiacol, salicylate of sodium, and sodium iodide may be employed. Salicylates and aspirin have replaced opiates; nevertheless morphia proves serviceable in glaucoma not only by soothing pain but from its action as a myotic. Potassium bromide, veronal in doses of 0.5 to 1 gramme, and trional in 1 gramme doses have been effective in relieving pain. Cocaine retains its position as an analgesic but may be replaced by holocaine, eucaine, and dionine, but their action is briefer. Acoine in \(\frac{1}{2} \) per cent. solution renders subconjunctival injections painless. The practical nature of the information in this article is well displayed by the excerpts we have made.

THE MEDICAL INSURANCE COMMITTEE.

A MERTING of the Medical Insurance Committee was held at the offices of the British Medical Association on Thursday, Oct. 7th, when the best means of bringing the advantages of the scheme before the medical profession were discussed, and a considerable advance in business was also announced. Dr. G. E. Haslip was elected chairman of the committee in place of the late Dr. H. Radcliffe Crocker, on the motion of Dr. Dawson Williams, which was seconded by Dr. Squire Sprigge. The following resolution was then unanimously adopted :-

That the members of the Medical Insurance Committee desire to convey to Mrs. Radeliffs Crocker their sincers sympathy in her bereavement, and their sense of the loss they have sustained by the untimely death of their colleague, Dr. Radeliffs Crocker, who had acted as chairman of the Medical Insurance Committee since its formation. The members of the committee recognise that it was largely owing to his keen interest and business aptitude that it has been possible for the committee to work up so large a business.

Mr. Guy Elliston, General Secretary of the British Medical Association, who is the agent and secretary of the committee, then reported that there was a policy issued at Lloyds for insuring the motor-cars of medical men upon specially reon p. 1163 of this issue of THE LANCET, and we have much pleasure in recommending it to the favourable consideration of our readers. It is a source of gratification to us that the work of the Medical Insurance Committee continues to progress steadily, and we look forward to the time when, owing to increase of business, the committee will be able not only to offer the same substantial rebates to insurers but to carry over a surplus by which some selected medical charity or charities will be benefited.

PAINLESS DENTAL DISEASE AS A CAUSE OF NEURASTHENIA AND INSANITY.

THE multiplicity of causal factors to which the development of neurasthenia and of insanity is attributed is an indication of our ignorance on the subject. That cause and effect are integrally related is axiomatic, but when the same effect apparently is produced by a variety of causes we begin to doubt the genuineness of the latter, and feel that we have not advanced far in the matter of etiology. It has long been known that irregular teeth are common in the insane and among habitual criminals, as well as in the epileptic. but hitherto it seems that there has been no attempt to establish or to disprove a causal connexion between dental affections and nervous and mental diseases. Irregularity of the teeth has been regarded as one of the stigmata of degeneration, a group of anatomical and physiological peculiarities which is constantly being added to in a curiously unscientific way, and they have usually been considered as the outward expression of some unknown constitutional tare. It has remained for Dr. Henry S. Upson, professor of neurology in the Western Reserve Medical School of Cleveland, to suggest that dental trouble may be the actual cause of certain cases of neurasthenia and insanity. In the Cleveland Medical Journal for August he adduces interesting, if not altogether convincing, facts in support of his somewhat novel views. One, of the simplest dental lesions is impaction. When a tooth is formed in the maxilla with its axis wrongly directed it is often prevented by impaction against another tooth from appearing outside the bone or through the gum. The result in some instances is severe toothache or neuralgia, but in most cases no such pain is present. Systematic examination with the help of the X rays of a large number of patients in three of the State hospitals revealed a considerable number of cases of impaction among patients suffering from one or other of the psychoses. Prompt recovery from insomnia and melancholia after the relief of dental lesions in a few led Dr. Upson to prosecute his inquiry more widely, and in his paper he records numbers of cases in which definite nervous and mental symptoms vanished at varying intervals after a visit to the dentist. A series of excellent X-ray photographs illustrates the type of dental affection-impaction, the removal of which seems to have been followed by such beneficial results. cannot doubt the reality of the improvement achieved, although it is permissible to question the accuracy of the nervous or mental diagnosis in some instances. Further, when we consider the extent of our actual knowledge, such a statement as "of all cases of neurasthenia and the psychoses, not due to obvious physical causes, such as digestive disorders and eye-strain, the great majority, possibly four fifths in men and three-fifths in women, are due to dental diseases," is a little too sanguine, even when we admit the enthusiasm of a worker in a new field of research. The phenomenon of reflex irritation is accountable for much in nervous symptomatology, and no therapeusis is sufficient which ignores obvious sources of irritation, such as adenoids, dental caries, balanitis and preputial adhesions, aural mischief, astigmatism, and so on; but Dr. Upson maintains that impacmunerative terms. A synopsis of this scheme will be found | tion commonly occurs without any symptom, in particular

without pain, and yet we are asked to recognise it as a cause vera of dementia præcox, melancholia, manic-depressive insanity, neurasthenia, the psychoses, and what not. Of course, in many dental affections pain may be the exception, though reflex irritation may all the time be at work, but as a rule the latter shows itself in local reactions merely, such as facial neuralgia, and more generally as headache and sleeplessness. Whether to its action more profound dis turbances are to be attributed remains to be seen, and Dr. Upson is himself conscious of the need for further investigation ere the evidence be deemed conclusive.

POISONING BY ATOXYL.

In order to throw some light upon the toxic effects which sometimes occur in man as a result of the use of atoxyl Dr. J. Igersheimer and Dr. Itami have carried out a series of experiments in the Pathological Institute of the University of Heidelberg, and have recorded their results in an interesting paper published in the Archiv für Experimentelle Pathologie und Pharmakologie, Vol. LXI., p. 18. They find that both with acute and chronic poisoning in dogs severe hæmorrhage into the kidney occurred almost invariably. This they maintain is the result of a primary effect upon the circulatory mechanism of the kidney and not, as some observers state, due to a hæmorrhagic nephritis The hæmorrhage occurs between the cortex and medulla and leads to a more or less extensive atrophy of the parenchyma of the organ. In the cat in subscute or chronic poisoning a train of nervous symptoms are set up consisting in slowness of movement, ataxy, clonic twitchings, and more or less severe spasms and spastic paralyses. The changes underlying these symptoms are found to have their situation in the central nervous system, consisting in severe degenerative processes in the cells of the brain and spinal cord. In both cats and dogs the ordinary symptoms associated with poisoning by inorganic arsenical compounds may be present in addition-viz., inflammation of mucous membranes, conjunctivitis, and trophic changes in the skin. Further experiments with other organic arsenic compounds seemed to indicate that the symptoms of poisoning by atoxyl are not confined to atoxyl alone, but may occur with other aromatic arsenical compounds. By subacute poisoning with atoxyl no change in the blood picture is made other than a moderate anæmia. The experiments gave no support to the view that the action of atoxyl is due to its anilin or phenyl component. The ocular changes which are produced by atoxyl are to be made the subject of a further paper by Dr. Igersheimer.

THE EARLY TREATMENT OF THE INSANE IN THE COUNTY OF LONDON.

THE proposals of the Asylums Committee of the London County Council for the establishment of receiving houses for the reception of cases of incipient insanity, already published in these columns,1 were considered by the Council on Oct. 12th at the first meeting after the summer recess. The committee recommended, after going fully into the subject, "That application be made to Parliament in the session of 1910 for powers to enable the council to establish and maintain receiving houses for alleged lunatics in the County of London." To this an amendment had been put down by Mr. Hayes Fisher on behalf of the Finance Committee to omit the words "receiving houses" and insert "as an experiment a receiving house." Mr. Hayes Fisher being absent through illness, Sir George Goldie moved on his behalf, but omitted the phrase "as an experiment." While not professing to be an expert on the question he urged the amendment on

general grounds of economy and advisability. A. F. Buxton seconded, arguing that it might be easier to get the Bill through if powers were only asked for one receiving house. Mr. Evan Spicer, however, pointed out that by getting full powers the council did not pledge itself in any way as to the number of receiving houses, It seemed a great piece of extravagance on the part of the Finance Committee to suggest that heavy Parliamentary expenses should be incurred twice if the experiment was successful. Sir John M'Dougall urged that one receiving house for the whole of London would be worse than useless. The object was to close the lunacy wards of workhouses, but one receiving house could not have that effect. so the present expenditure would still go on side by side with the new. The experiment under those conditions would be doomed to failure. What district would one house serve? A receiving house in the east would not serve the west, and he thought that there should be at least four. Mr. Ernest Gray asked, if the experiment was a failure, would any council add to the number of houses? If, on the other hand, the experiment was a success the amendment simply delayed the accomplishment of a reform which everybody desired. Mr. E. White thought that the council should be satisfied with one receiving house, and there would be no difficulty in inserting a clause in the Annual General Powers Bill to extend the scheme if necessary. Mr. Sidney Webb retorted that further powers could not be obtained without a special Act of Parliament, as an amendment of the lunacy laws would be necessary. To go to Parliament twice when once would do would be absolutely unnecessary expenditure and "a mere wanton, wicked waste of money." On a show of hands there voted: for the amendment, 29; against, 34. A division resulted, however, in 45 votes being cast for the amendment and 44 against. An appeal that the debate might be adjourned for further consideration was disregarded and the question as amended was then carried.

THE VIRTUES OF THE ULTRA-VIOLET RAYS.

THERE can be little doubt that the ultra-violet rays are the friend of man in many ways. A series of carefully conducted researches has already shown that it is the ultraviolet rays in sunlight which are responsible for the production of ozone in the air, and the presence of ozone is an unmistakeable sign that there is a complete absence of organic impurity. In great industrial centres where a pure air is needed most the murkiness of the atmosphere acts as an effectual barrier against the rays, and therefore their beneficent work is largely hindered. The plea for the ultraviolet rays is therefore merely the plea for sunshine itself. Later investigations have shown that the ultra-violet rays have an interesting action upon water, resolving part of it into hydrogen gas and peroxide of hydrogen. It has for long been maintained by some observers that the freshness of air, particularly after a welcome or long-delayed shower of rain, is due to peroxide of hydrogen, which readily oxidises organic matters or impurities with which it may come into contact. The presence of peroxide of hydrogen in the immediate proximity of waterfalls has also been suspected. Further, the ultra-violet rays are inimical to disease organisms. Whether this destructive action is due directly to the rays or to the oxidising products which they effect is a matter which has not received a definite answer. Amongst the best artificial sources of ultra-violet ravs is the quartz mercury lamp. This, when immersed in clear water infected with ordinary microbes and the coli bacillus, destroys those organisms within the radius of a foot in a minute. It is also a curious fact that the ultra-violet rays check fermentations. Lastly, it is probable that ultra-violet rays are largely concerned in the great assimilative processes

of plant life. It has been found, for example, that the assimilation of carbon by the leaves of wheat takes place about five times more rapidly when the sky is clear—that is, when ultra-violet rays obtain—than when it is cloudy. Altogether, the evidence of experiment is in favour of the conclusion that the ultra-violet rays fulfil a rôle of benefit to the human race, and the further study of their nature and action will be watched with interest.

WE are informed that Miss Pollok and Mrs. Gilchrist, the sisters and legatees of the late Dr. Robert Pollok of Glasgow, have given out of the estate which they inherited from him the munificent sums of £10,000 each to the Victoria Infirmary and the University of Glasgow for the endowment of a ward to be called the "Dr. Robert Pollok" ward and of a lecture-ship for original research in materia medica respectively. It is understood that these gifts are made in accordance with the written suggestion of the late Dr. Pollok, who throughout his career displayed a broad and unostentations charity. Scottish medicine owes a deep debt of gratitude to the ladies who have fulfilled the wishes of their dead brother in a manner worthy of his memory.

Dr. Anton Dohn, whose death has been announced recently, was well known amongst students of natural history as the founder, and for many years director, of the Zoological Station in Naples; he was born in 1840 in Stettin, his father being an eminent entomologist as well as a Member of Parliament. He studied zoology in Jena, and afterwards by means of a scholarship from the Berlin Academy of Sciences and with grants from various other scientific bodies he was able to found the station in Naples, which has been the means of enabling students of natural history from all countries to prosecute their studies under the most advantageous conditions.

A TELEGRAM from the Governor of Mauritius to the Secretary of State for the Colonies stated that 24 cases of plague with 13 deaths were reported during the week ending Oct. 7th.

THE DANGERS OF THE DRY SHAMPOO.

I.—THE RECENT FATALITY AT A HAIR-DRESSING ESTABLISHMENT FROM THE USE OF CARBON TETRACHLORIDE AS A SHAMPOO. THE INQUEST AND PROSECUTION FOR MANSLAUGHTER. II.—FURTHER EXPERIMENTS ON THE TOXICITY OF PURE AND COMMERCIAL TETRACHLORIDE, BY V. H. VELEY, D.Sc., F.R.S.

I.—The Inquest and Prosecution.

THE recent death which occurred during the application of a dry shampoo with carbon tetrachloride at Messrs. Harrods' Stores on July 12th has attracted considerable public attention and has been the subject of exhaustive inquiry. Briefly the circumstances of the case are as follows.

Miss Dalrymple, a young lady who, according to the evidence of all her intimate friends and relatives, had always enjoyed excellent health, went on July 12th to Harrods Stores for a dry shampoo. She was told by the assistant in the hair-dressing department that "it might make her feel ill," but she decided to undergo the process. The operation, according to the evidence, was conducted in the usual manner. After it had continued for about two minutes the lady turned pale and leant forwards over the basin and collapsed. Miss Dalrymple was placed by the assistant on the floor and help was called for, but she did not speak again and ceased breathing two or three minutes after. Artificial respiration and other measures were applied with no avail.

Mr. Luxmore Drew held an inquiry as to the cause of death at the Coroner's Court, Kensington, and during the course of this it was stated by the manager of the hair-dressing department of Harrods' Stores that carbon tetra-chloride had been used there for six years, that all

shampooing assistants were allowed to use it, and that cases of slight faintness had been seen.

Dr. W. Paul Jones stated that he was called in immediately to see the deceased lady. Death had occurred before his arrival. He found the odour of tetrachloride of carbon strong in the cubicle. He also stated that in February, 1907, he had been called to see a lady who had been faint during a shampoo and who had a rapid, irregular pulse on his arrival. The lady was healthy. Dr. Jones then suggested that fans should be used, and this suggestion was adopted. He had heard of several cases of slight faintness and had seen one case where the patient was quite insensible.

Dr. B. H. Spilsbury, pathologist at St. Mary's Hospital, made the post-mortem examination. He found signs of status lymphaticus in the deceased, and expressed the opinion that the cause of death was syncope due to status lymphaticus accelerated by carbon tetrachloride. He said that "if deceased had not inhaled tetrachloride she would not have died."

The verdict arrived at by the coroner's jury was "Accidental death accelerated by the fumes of tetrachloride of carbon," and they added a rider—"That Harrods' Stores were not justified in employing an unskilled operator to perform this dangerous operation."

On August 25th a prosecution was instituted by the Director of Public Prosecutions on the charge of manslaughter against the manager of the hairdressing department of Harrods' Stores and the assistant who gave the fatal shampoo. Mr. Leycester and Mr. Travers Humphreys appeared for the prosecution.

Mr. A. J. Pepper gave important evidence as to the dangerous nature of the process and the impossibility of safeguarding against possible dangerous effects of the vapour in spite of the precautions taken as regards ventilation during the process. Mr. Pepper described the process of the dry shampoo with tetrachloride of carbon which he, in conjunction with Mr. Chaldecott, had witnessed at Harrods' Stores. Both he and Mr. Chaldecott independently noticed unmistakeable symptoms showing that the lady on whom the operation was performed had inhaled some of the vapour. This was indicated by a distinct cyanotic tinge of the lipsand face. Mr. Pepper stated that there was a powerful odour of tetrachloride of carbon, especially in the lower part of the cubicle, and that "no one could possibly have breathed the air near the floor for more than a few seconds." pointed out that in the fatal case which had been the subject of inquiry the placing of Miss Dalrympleon the floor after fainting was the worst possible procedure. since here a larger dose of the vapour would be inhaled. Heexpressed the opinion that status lymphaticus could not alone account for death, and that the important factor in causing death was the inhalation of carbon tetrachloride.

Mr. J. H. Chaldecott, honorary anæsthetist at St. Mary's Hospital, gave evidence as to the use of carbon tetrachloride as an anæsthetic in former years, and pointed out that its use was abandoned for this purpose owing to the dangerous effect of the drug on the heart. He stated that it was a powerful anæsthetic, that a person having a dry shampoo with the substance was likely to inhale some of the vapour, and therefore the same precautions should be taken as when an anæsthetic was administered—viz., previous medical examination and loosening of the clothing to allow free breathing.

Dr. W. H. Willcox, senior scientific analyst to the Home Office, gave evidence as to the dangerous nature of the substance used for the fatal shampoo. He pointed out that while pure carbon tetrachloride was more poisonous than chloroform the commercial samples, such as the one actually used, contained over 2 per cent. of carbon di-sulphide, which impurity greatly added to the poisonous properties. He had conducted a large number of experiments on animals with the substance actually used in this fatal case, and all of these absolutely proved that the liquid was a very dangerous poison. He expressed the strong opinion that no precautions could make the use of it as a dry shampoo safe. He pointed out that the few cases of fainting stated to have occurred at Harrods' Stores could not be rightly taken as representing all the cases of illness from the substance, since frequently the symptoms are delayed for some hours, and some people who have had a dry shampoo would, no doubt, have suffered from vomiting and illness afterwards just as happens to people who work with the drug in laboratories. Dr. Willcox stated that he had performed experiments which proved that the substance used would rapidly evaporate, and to such an extent

that it was possible in a few deep breaths for a healthy person to take a fatal dose. He stated that he had had considerable experience of status lymphaticus, and that in this case the immediate cause of death was, in his opinion, undoubtedly due to the inhalation of carbon tetrachloride.

Lieutenant-Colonel E. Lawrie, I.M.S., stated that he had been medical attendant of the Dalrymple family and had known the deceased for a number of years. In his opinion she was quite healthy and the only cause of death was inhalation of carbon tetrachloride.

Dr. Spilsbury repeated the evidence he had given before the coroner's jury, and stated again that death must have been accelerated by the inhalation of tetrachloride of carbon.

Mr. Bodkin, for the defence, said that he had no complaint to make at the institution of the prosecution, and stated that Messrs. Harrods, on learning that carbon tetrachloride was dangerous to certain people, immediately gave orders that this preparation was never again to be used in their establishment.

Mr. Leycester, on hearing the steps taken by Messrs. Harrods, consented to the withdrawal of the charges of manslaughter. He pointed out that the prosecution had served the purpose for which it was intended in bringing to the notice of the public the dangerous nature of the dry shampoo where carbon tetrachloride was used, and also that it would be a severe warning against the use of this substance by any other persons for that purpose, since if any future deaths occurred a serious charge would of necessity be instituted.

The learned magistrate, Mr. Horace Smith, agreed with the course taken to withdraw the prosecution.

In view of the important evidence which has been published in connexion with the case, we feel sure that the Pharmaceutical Society will consider it desirable to make a recommendation to the Privy Council to place carbon tetrachloride on the Poisons Schedule. We consider that the public should in future fully realise the dangers of the dry shampoo, not only when carbon tetrachloride is used but also with many other preparations extensively employed. Carbon tetrachloride probably came into use because it was not inflammable, though, as is evidenced above, it has other very serious dangers. Many of the preparations which are used for the dry shampoo are dangerously inflammable, and numerous serious cases of burning have resulted, while a terrible tragedy of this sort has just occurred.

Our readers will remember that in THE LANCET of August 7th we published an important note by Dr. Augustus D. Waller on the relative toxicity of chloroform and carbon tetrachloride, with a note by Dr. V. H. Veley on the danger of the latter substance as a dry shampoo. We are now enabled to print an account of further investigations by Dr. Veley on its toxicity.

II .- Further Experiments on the Toxicity of Pure and Commercial Carbon Tetrachloride, by V. H. VELEY, D.Sc., F.R.S., Physiological Laboratory, University of London.

In consequence of the important case upon this matter recently before the court, I have, in the absence of Dr. Waller, carried on experiments, supplementary to those already described in THE LANCET, on the comparative effects on isolated muscle of (1) pure carbon tetrachloride as against pure chloroform, and (2) pure carbon tetrachloride as against the same substance to which carbon disulphide had been purposely added in the proportion of 2 per cent.—namely, that in the commercial article. The sample of pure carbon tetrachloride was obtained by the fractional distillation of the commercial article; its physical properties, boiling point, density, &c., were in accordance with those found by Thorpe, Young, and previously by myself.

The experiments were conducted in the usual manner namely, to obtain the normal response from muscle in saline solution, then to substitute the chemical compound and continue until abolition of response took place, then again to put back into saline solution in order to ascertain the recovery, if any

1. Pure oarbon tetrachleride as against pure chloroform .-Solutions of both these substances were made up to $\frac{-}{100}$ contained 0.1538 per cent. carbon tetrachloride, and 0.1194 per cent. chloroform respectively, neglecting variations of density of water; the substances were weighed out to within 1 part in 500; the former solution was subsequently diluted as required.

First series of experiments. Substances both of $\frac{n}{100}$ concentration. Times required for abolition: chloroform 14', carbon tetrachloride 17'; good recovery in the case of the former, no recovery in the case of the latter.

Second series of experiments. Carbon tetrachloride $\frac{n}{150}$ chloroform $\frac{n}{100}$. Times required for abolition : chloroform 13', carbon tetrachloride 28'; recoveries as before.

Third series of experiments. Carbon tetrachloride $\frac{n}{130}$ chloroform $\frac{n}{100}$, being approximately the proportion of equal weights. Times required for abolition: chloroform 13', carbon tetrachloride 24 5'; recoveries as before.

Hence, therefore, though the action of carbon tetrachloride is less rapid than that of chloroform, its action is more deadly, as the muscles recovered from the toxic effects of the chloroform, but were killed by the carbon tetrachloride.

2. Pure carbon tetrachloride as against the same with 2 per cent. carbon bisuiphide. - The former solution was the same as that used in the experiments described above; the latter solution contained 0.1538 per cent. tetrachloride and 0.003 per cent. carbon disulphide. It might be an open question whether the latter substance really dissolved or only formed an emulsion with the water, but, however this may be, the liquid thus obtained had an odour quite identical with that of a similar liquid obtained from the "dry shampoo." Two series of experiments gave the following results:

Times required for abolition.

			re car		th 2 per c 1 disulphi	
First series					16'	uc.
Second series	•••	•••	20'	 •••••	14'	
Mean value			20′	 	15'	

There was no recovery in any case.

Hence, therefore, since the toxic or lethal values are inversely proportional to the times, one has the ratio 15:20::100=133, or, to put the matter in other words, the 2 per cent. carbon bisulphide purposely added increases the lethal value by as much as 33 per cent. It may further be mentioned that a solution (or emulsion) containing 0.1 per cent. carbon disulphide, obtained from a sample of hair-wash, killed an isolated muscle immediately.

It is to be hoped that the public warning may suffice to stop the use of carbon tetrachloride by unskilled and untrained persons.

MOTORING NOTES.

The Red Cross Doctors' Policy.

THE Medical Insurance Committee (see p. 1160) has had under consideration for some time the question of motor-car insurance, and is now in a position to recommend insurance at Lloyd's under a policy which is better calculated to meet the practical needs of motor-car owners than any other which has been inspected. It is well known that the sale value of a car purchased new deteriorates very rapidly. medical man may, for instance, purchase a new car for £700 and insure it for that amount, paying a premium on that sum annually; if, however, his car becomes a total loss three or four years later he would under ordinary circumstances receive not the replacement value, £700, but the sum at which the car is valued at the time it came to grief. A car bought new for £700 would probably in its third year not be valued at one-half that amount, although its usefulness to the owner would not have greatly diminished. The policy which the Medical Insurance Committee recommends meets this objection, since the insured value is agreed as the replacement value. Thus, in the event of total destruction or loss, the full amount insured is paid concentration in physiological saline solution, and therefore of the car and accessories and by its horse-power; for instance, on a 10 horse-power car and accessories valued at £300 the annual premium is £11 10s, and for a 14 horse-power valued at £400 the premium is £14, and so on. The rates quoted are those of the "Red-Cross" doctors policy, and the premiums cover (1) all damage to car the direct result of accidental collision, excluding wilful damage, wear and tear, and mechanical breakdown; (2) all claims for which the assured may be liable for injury to persons (excluding passengers) and animals, or damage to vehicles or property while being towed or conveyed by road, rail, or inland waterway, anywhere in the United Kingdom; (6) damage to lamps and accessories due to accidental collision, and damage to tyres from the same cause when the car also is damaged. Further, compensation of £1 a day is paid during the time the car is being repaired owing to an accident, to cover the cost of hiring a conveyance; this compensation is payable from the second day after the receipt from the repairers of the assured of an estimate for the repairs until the repairs are actually completed, but the allowance for hire of a conveyance will not be paid beyond 75 per cent. of the agreed cost of repairs. There is no restriction as to driver, all damage to the car being covered while any licensed person is driving, whether with or without the knowledge of the assured. If no claim is made in a year an amount equal to 25 per cent. of the full premium paid will be returned in cash. If the owner only drives there is a reduction of 5 per cent., and if the same owner owns two cars, only one of which is used at a time, there is a reduction of 20 per cent. on the combined premiums; if both cars are liable to be in use at one time the reduction is 10 per cent. The owner's liability with regard to his paid driver, accidents to the owner or passengers in the car, and theft of accessories can also be provided against under these policies for small additional premiums.

The Medical Insurance Committee is able to allow 10 per cent. off the total premium paid by the insurer. Special policies are also issued to owners of certain makes of cars, authorising them to have repairs up to any amount commenced immediately without consent at the authorised agents of the particular company, but for a medical man the "doctors' policy" would seem to be the best. Red Cross policies are also issued without the provision above mentioned for compensation while the car is being repaired, and can be made to cover mechanical breakdowns under certain conditions, the premiums being adjusted accordingly. A full prospectus of these may be had on application to the secretary and agent at 429, Strand, London, W.C.

The Olympia Motor Exhibition.

The only International Exhibition of Motor-cars this year will be held at Olympia, London, from Nov. 12th to 20th. This will be the eighth held by the Society of Motor Manufacturers and Traders, and as there will be no exhibition in Paris this season a large influx of visitors and buyers is expected. About 300 firms will be displaying their wares and a moderate estimate of the motor-cars on exhibition would be 600, whilst in addition there will be all kinds of engines, types of electric ignition, lamps, clothing, and tyres. Special trains at cheap fares will be run by the railway companies from the chief towns in the provinces, and doubtless many medical men, hesitating or on the verge of changing from horse-driven to petrol-propelled vehicles, will take advantage of these special railway facilities to visit the show, where the latest ideas in motor construction will be on As last year, the number of THE LANCET which is published on the same day as the exhibition opens will contain a description of the show, and especially of such exhibits as are likely to be of interest to the medical motorist.

THE autumn dinner of the Glasgow University Club, London, will be held at the Gaiety Restaurant, Strand, on Friday, Nov. 5th, at 7.30 P.M., when Lord Rosebery, Chancellor of the University, will preside. Members who intend to be present, or to introduce guests, are requested to send notice at once to the honorary secretaries, 4, Bryanston-street, Portman square, W.

THE JUBILEE OF THE CRANLEIGH COTTAGE HOSPITAL.

JUST half a century ago there was opened in the Surrey village of Cranleigh (or Cranley, as it was then spelt) the first cottage hospital in England, and this, the month of its jubilee, is a fitting occasion to recall the inception of a class of institution which has become familiar in every part of the country, and which in spite of certain adverse criticisms has largely justified the intentions of its founders. To those who are accustomed to the neat brick-built bungalow buildings, which in their equipment and design are microcosms of the larger county institutions for the sick poor and with which the name of cottage hospital is in most instances associated at the present day, it may come as a surprise to learn that the word "cottage" was accurately descriptive of the prototype of them all. The medical founder of Cranleigh Cottage Hospital was the late Mr. Albert Napper. Mr. Napper, who at one time was associated with this journal, has been dead 15 years, but he is still remembered by many of his friends, for he gained the respect of his neighbourhood as a skilful surgeon, a keen sportsman, and a humane and open-hearted country gentleman. The idea of the cottage hospital was driven home to Mr. Napper by the frequent occurrence in his practice of cases of serious illness that could not be given the treatment necessary for the patients and satisfactory to himself in the poor and frequently unhealthy surroundings of an agricultural labourer's dwelling, whilst he had frequently found it difficult or impossible to induce such patients to leave those homes to enter the county hospital at Guildford some miles away. They dreaded the unknown environment of a large institution and wished to remain in the hands of the man they knew and trusted. Others who had met with accidents might have been induced to enter a large hospital but would have undergone serious risk in the journey over country roads necessary to reach it. These facts had also struck the late Archdeacon J. H. Sapte, rector of the parish, who having a convenient old cottage in the village, offered it rent free to be equipped as a hospital for the use of a limited number of poor people needing careful attention whilst undergoing medical or surgical treatment. The scheme aroused interest in the neighbourhood and a small committee was formed to put it into execution, with the result that the following rules, amongst others, were framed for the conduct of the little hospital:

The hospital is designed for the accommodation of the poor when suffering from sickness or accident.

The establishment shall consist of a regular nurse, and another woman for the regular work of the house.

The nurse shall, at such times as her services are not required in the hospital, attend poor women in their own homes during their confinements or other illnesses, on the payment of the usual fee.

Patients shall be received on the payment of a weekly sum, the amount of which, dependent on their circumstances, is to be fixed by their employer, in conjunction with the manager of the hospital, who shall grant admission on consultation with the medical officer.

The funds for the establishment and support of the hospital shall be raised by voluntary contributions.

It was further provided that Mr. Napper should be the medical officer, but that cases admitted from the practice of neighbouring medical men should be visited by them so that they might have a voice in the treatment. A lady volunteered to give her help to the establishment in special cases. excellent rule (which has been followed since the foundation) was that parish patients might be received into the hospital for operative or other treatment, in which case the Poor-law medical officer who attended them was entitled to recover from his guardians the special fees sanctioned by the Local Government Board. The idea of the founders was to reproduce, as far as possible, the kind of life to which their patients were accustomed in their own homes, only replacing cleanliness and decently served and cooked meals for the dirt and illfeeding which were then, as now, only too common in many rural homes.

The building which was adapted to this purpose by the rector's generosity was an old and picturesque two-storey cottage. It is well shown in our illustration, and did duty until 1901, when the single-storey brick hospital, part of which can be seen behind the old cottage, was erected to meet the demands of modern surgery, the cottage being converted to the use of the nurse and the kitchen department. As it was originally used, the two chief bedrooms on the upper floor were made into wards for three male and three female patients respectively, a smaller room was employed for operations, another tiny apartment for the nurse's bedroom, and the large room downstairs was the kitchen and sitting-room for convalescents, the furniture being that of a decent cottage kitchen-parlour. Very pleasant the old place is to-day, with its wealth of black oak beams and spotless white walls, although the patients have left it for the two modern wards, properly equipped for aseptic treatment, separated from their excellent bathrooms and lavatories by properly crossventilated passages. These wards will accommodate two more patients than was formerly possible in the old building. The bathroom is not an innovation, for considerable trouble was spent in erecting a bath with hot and cold service in the original hospital, which thus boasted a possession perhaps unique amongst the English cottages of the middle of last century.





The late Mr. Albert Napper, M.R.C.S. Eng., L.S.A., medical founder of the first Cottage Hospital.

The new hospital has an operating room which in lighting and arrangement is all that can be desired, a feature that, as many of our readers know, is now common to these institutions.

The history of the Cranleigh Hospital has been almost uneventful in its prosperity, the chief incidents present having been the retirement of its medical founder in 1881 (when he was presented with a testimonial which was largely subscribed by the medical profession and which THE LANCET did its best to promote), and the move into the new quarters eight years ago. The managers have wisely contented themselves with improvement rather than expansion-the present hospital contains only two beds more than the old buildingwith the consequence that it has never had to face an adverse balance-sheet. In the four years after its opening it received 100 villagers at a total cost of £612, of which £131 were contributed by the patients themselves; and we find by the last annual report that 65 cases were treated during the year, with an average stay of 2 33 days each. Several serious





Cranleigh Cottage Hospital. In the front is the old building, shaded by the tree. At the back is one of the main wards of the present hospital.

surgical emergencies and a good number of accidents were treated, but cases of chronic illness are not received unless they require relief for urgent symptoms; and it is not usual to receive domestic servants, the institution having been specially intended for poor country folk. It is satisfactory to note that the receipts from patients amounted last year to £48 10s., a good sum in relation to the number treated, especially when we remember that it is drawn from a poor class in return for attendance, which would probably have left any medical man out of pocket who treated the patients for the customary fees in their own homes. It is clear that no case can be made out in this instance for the existence of "hospital abuse," and this is endorsed by the practical interest which Cranleigh and the neighbourhood take in supporting its little hospital.

The management has continued on its original lines with a few modifications. Mr. Arthur Napper, the present medical officer, succeeded his father in that post, in which Dr. A. H. Walker and Dr. J. K. Willis are now associated with him. The policy of inviting neighbouring practitioners to attend their own cases in the hospital has been maintained, and in this manner an ethical difficulty, which has been unfortunately prominent in connexion with several larger hospitals, has been averted. Quite recently a new post has been made, that of consulting surgeon, to which Mr. Stansfield Collier has been appointed, and we are convinced that cottage hospital managers throughout the country would do well to create similar posts where they do not already exist. The surgical skill of the country practitioners who attend the poor in cottage hospitals is not called in question by the proceeding; it is simply a recognition that many operations are now performed which were undreamt of in the middle of last century. Cases must sometimes arise in which the patient will have an appreciably better chance of recovery if operated upon by a man who devotes his whole time to the practice of surgery, and who perhaps has performed the operation in question a very considerable number of times more than opportunity has made possible for the local surgeon. In the vicinity of most cottage hospitals there are towns in which men practising pure surgery live, and from these towns cottage hospitals could easily draw consultants and thus reinforce their useful and truly charitable system for the relief of the sick poor.

The interest aroused by the opening of the Cranleigh The interest aroused by the opening of the Cranleigh Cottage Hospital at its inception was not confined to Surrey. In the early "sixties" a great many general newspapers, besides all the leading medical journals, described the experiment, and for the most part spoke of it in enthusiastic terms. THE LANCET called it "a sensible and useful development of local philanthropy, for which we desire permanence and a rich fruition of useful work," and we are cled to take the present expectation to record the fulfilment. glad to take the present opportunity to record the fulfilment of our predecessors' good wishes. The *Times*, the *Saturday Review*, *John Bull* (the first of that ilk), the *London Review*, the Scotsman, and a large number of provincial journals gave full descriptions of the hospital and its methods, and from a lengthy contemporary article in Good Words we learn that Fowey and Bourton-on-the-Water were not long in adopting the Cranleigh lead. East Grinstead and Tewkesbury were also early in the same field and within ten years there were nearly a hundred cottage hospitals built or building in various parts of the country, most of them having adopted the Cranleigh constitution for a model. In 1881 we recorded the existence of over 300 similar hospitals in the United Kingdom as well as of many in the colonies, on the continent, and in America. Their popularity has never waned, and at the present day it is probable that most of our readers in the country are in active touch with one of them, and we believe that their work will stand the criticism of results. Of their popularity with stand the criticism of results. Of their popularity with their poor beneficiaries there can be no question, and we see no reason why, if worked on the system which we have described, they should excite the opposition of any branch of the medical profession, seeing what good fruit has already sprung from the stock first planted and tended with devotion by that worthy surgeon Albert Napper.

DONATIONS AND BEQUESTS.—Under the will of the late Rev. E. L. Adams, the Manchester Royal Infirmary will receive £4000, upon the condition that a ward in the institution be named the "Elizabeth Adams Ward."

PERIODICITY IN EPIDEMIC DISEASE IN MELBOURNE.

AUTHENTIC information respecting sanitary matters in Australasia is highly appreciated in the mother country, and the interchange of ideas made practicable by the discussion of such information proves advantageous to the dwellers in all parts of the Empire. The latest mail brings us from Melbourne an instructive essay on the periodicity of epidemic diseases in that city, reprinted in pamphlet form from the transactions of the Australasian Medical Congress. The author is Dr. James Jamieson, the medical officer of health of Melbourne, who has utilised the occasion of the meeting recently held in that city to introduce this topic for discussion by his professional colleagues.

British epidemiologists will be particularly interested in this essay, for it shows that if due allowance be made for the wide differences, geographical and other, between Australia and this country, the incidence of epidemic mortality in both regions of the globe is, in many respects, similar. Dr. Jamieson selects for particular comment enteric fever, scarlet fever, diphtheria, and influenza the first three of these being those with which his duties as guardian of the public health bring him into most intimate contact. Except incidentally Dr. Jamieson does not attempt to compare the seasonal distribution of epidemic disease in his own city with that which obtains in this country. We surmise that this is because the information at his disposal is limited to fatal cases of disease, whilst concerning the far greater amount of sickness which, happily, is "not unto death" the Melbourne authorities possess no record. For the information of our Australian brethren we may mention that under a general Notification Act every sanitary authority in England is compulsorily furnished with the name and address of every person suffering from any of the more dangerous epidemic diseases, and consequently a vast amount of material is accumulating here which, if properly analysed and registered, should eventually furnish accurate information respecting the very points discussed in the present essay; and this information would be available for comparison with similar data for the colonies as soon as they are ready to utilise it. That the health officer of Melbourne desires similar equipment for his own city we gather from the following passage in his essay: "A special point in the history of the epidemic diseases (in Melbourne) is the liability which they show to successive periods of increase and decline, in prevalence, and in fatality. The problem in connexion with this would be simplified if there were a constant ratio between these, since, even in the absence of any exact returns as to prevalence, it would be sufficient to know the number of deaths in a given period. This is not the case, however, since almost all epidemics have a varying degree of virulence and of mortality at different periods. Scarlet fever has this peculiarity perhaps more than any other disease. In the early years of its appearance in Victoria it was looked upon as a trivial ailment, whilst the great outbreak of 1875-76 showed a severity which must be described as excessive. Again, in recent years the mortality has been actually trifling. Of these alternations we have as yet no approach to an explanation, and can only postulate some cosmic conditions as operative in their production." This being so, the omission to which we now call attention is a little puzzling. Dr. Jamieson illustrates his essay by means of a series of charts which, with the belp of his assistant, Dr. Walter E. Summons, have been carefully drawn to scale and which add materially to the value of the work. Much labour has evidently been expended on these charts, which relate to the mortality from epidemic diseases for a series of years, but the chief meteorological data, such as temperature, rainfall, and atmospheric pressure, which in this country are usually appended to diagrams of this kind, have been omitted.

Dealing with the question of epidemic prevalence generally, the writer remarks that at longer or shorter intervals there occur in Australia severe outbreaks, followed by periods of diminished prevalence or complete cessation. In isolated districts this may be merely a question of fresh introduction of infection from without. But in districts where the disease is always more or less present recurring outbreaks

are probably due to the growing up of a fresh body of susceptible subjects. While in either of these ways it may be possible to account for the recurrence of outbreaks at intervals more or less regular, they supply no explanation of the fact that the same disease shows a varying degree of virulence and of fatality at different times. reference to the incidence of scarlet fever mortality Dr. Jamieson's experience confirms that of this country, that the disease shows a marked tendency to increased prevalence in autumn, with a climax of severity in September. This is the case in Melbourne, for a similar tendency is seen there at the corresponding season—that is, in March. The character of the curve is convincing as to the general tendency to increased prevalence from October to March, with a corresponding decline to October again. It might be supposed, he suggests, that the rise to a maximum in March is related to school attendance. But in a rather slowly spreading epidemic like scarlet fever there would appear to be nothing in such an explanation adequate to account for the rapid fall in April. To assume a varying susceptibility in the child-population at different seasons, or some corresponding variation in activity of the infecting agent, is mere theorising. Moreover, it has to be noted, as against such a hypothesis, that the climax in diphtheria falls in May, though the two diseases have the same proneness to localise their early manifestations in the fauces.

By means of a chart relating to diphtheria in Melbourne it is shown that, as in Europe and in America, this disease is far more fatal there in the colder months of the year and less so in the warmer. How regular is this seasonal recurrence when account is taken of a large number of cases spread over many years is shown by the curve, which, in the uniformity of its ascent and descent, is remarkable. Discussing the probable causes of the increased prevalence of diphtheria at this season of the year Dr. Jamieson passes in review some suggestions emanating from this country and elsewhere. Among these is one that the winter prevalence of this disease depends largely on the concurrent presence of catarrhal affections of the nose and throat, but it is dismissed by the author with the remark that whereas catarrhs are never so common as they are during influenza epidemics, no concurrence is observable when the curves of these two diseases are exhibited in the same diagram.

Among the commoner diseases of the epidemic class enteric fever is the one that most perfectly illustrates what may be termed cyclical periodicity—i.e., the recurrence at regular intervals of outbursts of illness of great extent or severity. This disease, as it occurs in Australia, is dependent more than any other on external conditions; in only slight measure is it directly contagious; it has no special liability to affect children; and it has a regular seasonal periodicity. Up to 1890 the disease seemed to run riot in Melbourne, whilst from 1891 to 1907, during which period there have been improvements in sanitation and steady extension of sewerage works, typhoid pre-valence has been reduced to quite a low level. In the first of these periods there are clear signs of a tendency to severe recurrence at intervals of four years, whilst in the second the mortality varies little from year to year. In the first the inhabitants of the city were left almost at the mercy of external influences, whilst in the second such conditions were either curbed or kept in abeyance. "It is fortunate," adds Dr. Jamieson, "that though we have no solution of the theoretical problem we have at least succeeded in attaining the valuable practical result of getting typhoid mortality reduced till it is in a fair way of becoming a vanishing quantity."

ASYLUM REPORTS.

Royal Albert Asylum.—The annual meeting of the Royal Albert Asylum (Training Institution for the Feeble-Minded of the Northern Counties), Lancaster, was held on Sept. 30th, at Bradford town hall, Lord Richard Cavendish, deputy chairman of the central committee, being in the chair. The report spoke of the loss by death of Sir J. T. Hibbert, the Marquis of Ripon, Earl Egerton, Sir Edward Lawrence, and other supporters, but said they had been fortunate in obtaining the services of the Earl of Lathom as chairman, and of Lord Richard Cavendish as deputy chairman and chairman of the house committee. The appointment of Mr. of this amount under all meteorological conditions, and some

E. Tootal Broadhurst was referred to as being very gratifying as chairman of the Manchester and Salford committee. subscribers were asked to give their approval to the incorporation of the asylum under the amended title of "the Royal Albert Institution, Lancaster." Incorporation would confer many advantages, and care had been taken to comply with the views of the founders, while the alteration of title would remove some of the disadvantageous associations connected with the word asylum. The fortyfifth annual report was testimony to the increased and increasing work of the institution. There are now 678 inmates, 431 males and 247 females. 292 were election cases, an increase of 22 during the last two years, and 332 were cases received at reduced rates of payment. There were 273 patients from Lancashire, 210 from Yorkshire, 63 from Cheshire, 59 from Durham, 31 from Cumberland, 20 from Northumberland, 16 from Westmorland, and six from other The average number resident during the year had been 661, as against 647 in the previous year. With increasing numbers increased support is necessary, which the committee confidently look for, although from the severe depression of trade there was some decrease in the year's subscriptions. The inmates of the institution were said to look cheerful and happy, as well as being neatly dressed. During the year there had been 65 admissions, 34 discharges, and 13 deaths. The aggregate number under treatment during the year had been 725, 682 being the highest number resident on any one day. Of the 34 discharged, there had been material improvement in 13 cases, moderate improvement in ten, and nine others showed slight improvement. The deaths showed a percentage of only 1.79 of the aggregate number under care. There has been a considerable strain on the resources of the infirmary as to space, and Mr. Archibald R. Douglas therefore recommended the erection of an inexpensive building for the quarantining of infectious cases. The value of such an institution as this is far greater than is indicated by the mere numbers given. It is to be hoped that in time the whole nation will be alive to the necessity of maintaining life-long control of these unfortunate members of the community, and not be satisfied that in early adolescence the feeble-minded ones shall beunprotected and left to their own devices.

THE CHEMICAL PRESERVATION OF JUG-CREAM.

Under the exigencies of our present-day existence and by virtue largely of our insular position traders are compelled in the case of many of our foods and drinks to resort to some method of preservation. By the introduction of substances which are also prescribed for use as drugs fraught with physiological results they have been able to introduce and retain in grocers' and fishmongers' shops foods which without such medicines might have betrayed their presence in unpleasant fashion. On the other hand, the employment of these chemical preservatives, such, for example, as salicylic and boric acids, has in the past placed a discount upon cleanliness and freshness by enabling less care to be exercised in the choice and preparation of the original articles. It is said, for instance, that the unwholesome conditions under which certain firkin butters are prepared would long have ceased were it not for the large amount of preservatives which are added to them. But it is alleged that in the case of certain foods it would not be practicable to rely entirely upon methods of preservation such as cleanliness and the application of cold or heat, since sometimes these methods render the foods unpalatable, and therefore unsaleable. In the case of milk the Departmental Committee on Preservatives and Colouring Matters in Food recommended in 1901 that in no circumstances should any chemical preservatives be added, since it was able to show that under existing arrangements an invalid infant might easily, day by day, have unconsciously administered to it far larger doses of certain drugs than would be prescribed for an adult by the physician. But as regards cream, it was decided that provisionally boric acid or mixtures of boric acid and borax might, if declared, be added in amounts not exceeding 0.25 per cent. expressed as boric acid (H₃BO₃). At that time there were but few experimental data available as to the effect

of the small dealers in jug-cream have, it appears, experienced difficulty in carrying on their trade during the hotter months with this maximum. Accordingly Dr. J. M Hamill, one of the food inspectors of the Local Government Board, has recently investigated the subject from the point of view largely of the jug-cream traders. The result of his investigation is to show that a cream trade can be carried on without the use of any preservatives at all by large firms who send their cream direct to their customers; but that there are great difficulties in the case of the "indirect" cream trade, where it is desired to keep the cream fresh for a week in retailers' shops. It is, in fact, alleged that without preservatives the jug-cream trade could not exist at all, especially in summer a consummation which has apparently been reached in Germany and America, where no preservatives whatever are allowed in cream. France, however, where presumably no preservatives are actually allowed, appears to be doing a thriving trade, both in her own and in this country, in jugcream, but whether or not her home trade is conducted by some other method of preservation it seems clear that the cream which reaches this country from France contains a considerable amount of chemical preservatives.

In so far as the United Kingdom is concerned, it certainly seems, on a basis of careful experimentation by Dr. A. Harden at the Lister Institute, that in the summer months an addition of 0.15 per cent. of boric acid to the maximum provisionally laid down by the Preservatives Committee may be necessary from May to October inclusive, the maximum of 0.25 per cent. remaining operative during the rest of the year, and this forms one of Dr. Hamill's recommendations. It has, however, been necessary to provide against the addition of this amount of preservative to very thin cream-such, for example, as that which contains as little as 8 to 9 per cent. of fat, and which might be consumed, with its attendant 0.4 per cent. of boric acid, in large quantities with undesirable results. It has, therefore, been recommended that the cream to which the limits of boric acid above referred to are added should contain at least 40 per cent. of milk fat. In all cases the declaration of the preservative should, Dr. Hamill thinks, be made compulsory and adequate and not, as at present, in microscopic letters in out-of-the-way corners of the labels. Some dealers have, it seems, recently intimated on the label that boracised cream is not suitable for infants and invalids, and there is obvious advantage in a declaration such as this; in fact, if it is made and if the amounts of boric acid prescribed are never exceeded the risks should prove practically negligible.

But, nevertheless, there is much to be said for the way in which they deal with these things in the Fatherland-i.e., entire prohibition of all chemical preservatives in cream. Dr. Hamill points out in his report that, notwithstanding the recommendation of the Departmental Committee above referred to, boric acid in definite proportions should be the only preservative permitted in cream. There is a general disposition on all sides to accept this recommendation and to act upon it in the law courts, but nevertheless efforts are being made to introduce in addition into the cream other preservatives, such as sodium salicylate or sodium benzoate, these preservatives being used to reinforce the preservative effect of boric acid. The fact that these additional preservatives are an infringement of the recommendations of the Departmental Committee is quite well known to those who employ them, and who apparently act in the belief and hope that if the analyst finds boric acid in amounts not in excess of the maximum he will not pursue his researches further, and, as Dr. Hamill crisply puts it, "there is reason to believe that their expectations in this respect are frequently realised." It also appears that sodium fluoride a sufficiently dangerous substance—is sometimes employed as a cream preservative.

Thus we are not altogether out of the wood in this matter of chemically preserved cream, and although there is no need for serious alarm, those who know the difficulty of searching for every conceivable preservative in every sample of cream may wish to have their cream labelled "guaranteed to be free from all preservatives" or to confine their consumption of cream to their visits to Germany. But perhaps if the traders obtain their additional 0.15 per cent. of boric acid during the summer months as a provisional concession pending further research and, it has to be added, also the

the Teutonic example be ultimately copied. The cream traders have been treated with great consideration and in a wholesome spirit of compromise by the food department of the Local Government Board, but they must remember that there is a limit to the chemical experimentation which should be carried on within the human test-tube.

MEDICINE AND THE LAW.

A Prosecution under the Public Health Act at Willesden. AT the Willesden second court recently Mrs. Rose Hibbard, residing at Harlesden, was convicted under section 126 of the Public Health Act, 1875, of wilfully exposing her son while suffering from scarlet fever, the evidence showing that the offence was not only of a dangerous character but was also followed by serious results for others. The boy was excluded from the school which he attended on Sept. 6th on the suspicion that he was suffering from chickenpox, and a health visitor on the following day warned the mother and instructed her to look out for signs of peeling. On Sept. 13th another health visitor called and found that desquamation was taking place, and on the 16th the medical officer at the school examined the child and diagnosed scarlet fever, again warning the mother. On the same day the boy was seen playing with others in the road where he lived, and he also took a ride in a baker's cart. Subsequently to this the mother called in the medical practitioner attending her family, who came to the same conclusion as the school medical officer, informed her, and notified the medical officer of health. There was evidence that the child attended the "Socialist Sunday School" after the mother had been warned, although the father, who was the secretary of the school, did not accept his wife's admission that this had been the case. Apparently as the consequence of the recklessness of Mrs. Hibbard two children of neighbours contracted the disease and became seriously ill, the medical evidence being to the effect that either of these resulting cases might have had a fatal termination. In the circumstances the Bench certainly did not err on the side of severity in inflicting a fine of 20s. and in declining to include the fees of the medical witnesses in the costs which the defendant was ordered to pay. This inflicts a hardship not upon the medical profession but upon the sanitary authority and upon the ratepayers. The public might justly have been relieved of as large a proportion as possible of the heavy expense incurred by it owing to the conduct of a person who, as the chairman of the Bench pointed out to her, was not able to plead ignorance or lack of power to understand the nature of her acts. The same gentleman observed that her own motherhood and natural sympathy with other mothers should have caused her to behave differently. It is to be hoped, however, that if the fine inflicted was light the weight of public opinion may make itself felt, and that both Mrs. Hibbard and her husband may realise that the community expects from its members consideration for others in such matters, although this may entail some slight trouble and self-sacrifice on the part of those exercising it. Even in a socialist state the equal distribution of disease by unrestricted infection could hardly be considered desirable, and the defendant and her husband can scarcely be regarded as practical exponents of such doctrines of unselfishness as may be included in the tenets of

VITAL STATISTICS.

socialism.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 7920 births and 4066 deaths were registered during the week ending Oct. 9th. The annual rate of mortality in these towns, which had been equal to 13.0, 12.6, and 12.3 per 1000 in the three preceding weeks, rose again to 12.9 in the week under notice. During the 13 weeks of last quarter the annual death-rate in these towns averaged only 11 9 per 1000, and in London during the same period the rate did not exceed 11.4 per 1000. The lowest annual rates of mortality recorded in the 76 towns last week were 5.9 in East Ham, 6.4 in Rotherham, 6.5 in Croydon, and 7.1 in Hornsey; use of hydrogen peroxide as a preservative, they may think it the rates in the other towns ranged upwards, how-the better course to abstain from further sophistication lest ever, to 19.3 in Huddersfield and in Merthyr Tydfil,

19.5 in Bootle, and 21.1 in Bury. In London the recorded death-rate last week did not exceed 12.2 per 1000. The 4066 deaths in the 76 towns last week showed an increase of 187 upon the number returned in the previous week, and included 402 which were referred to the principal epidemic diseases, against numbers declining steadily from 849 to 431 in the six preceding weeks; of these 402 deaths, 230 resulted from diarrhea, 49 from whooping-cough, 40 from scarlet fever, 30 from measles, 28 from diphtheria, 24 from "fever" (principally enteric), and one from small-pox. The 402 deaths from these epidemic diseases last week were equal to an annual rate of 1.3 per 1000, a lower rate than in any week since the middle of August. No death from any of these epidemic diseases was registered last week in Plymouth, Birkenhead, South Shields, Rochdale, or in six other smaller towns; the annual death-rates therefrom ranged upwards, however, to 3.3 in Coventry and in Merthyr Tydfil, 3.4 in Salford, and 3.8 in Hanley. The deaths attributed to diarrhosa in the 76 towns, which had declined in the six preceding weeks from 676 to 263, further fell last week to 230, but caused annual death-rates ranging upwards in the several towns to 2:1 in Walsall, 2:4 in Gateshead, 2:5 in Hull, and 2:9 in Great Yarmouth. The fatal cases of whooping-cough, which had ranged in the six preceding weeks from 73 to 51, declined last week to 49, of which 21 occurred in London and four in Liverpool. The 40 deaths from scarlet fever showed a further increase upon recent weekly numbers, and included 12 in London and its suburban districts, seven in Birmingham and Smethwick, seven in Manchester and Salford, and two both in Liverpool and in Bolton. The 30 fatal cases of measles showed an increase of 13 upon the low number in the previous week, but caused annual rates equal to 1.3 per 1000 in Coventry and in Merthyr Tydfil, and 2.0 in Newport (Mon.) The deaths from diphtheria, which had been 37 and 43 in the two previous weeks, declined last week to 28, of which six occurred in London and its suburban districts, four in Manchester and Salford, and two in Hanley, in which town nine fatal cases of this disease occurred during last quarter. The 24 deaths referred to "fever" showed a further increase upon the low numbers in the two previous weeks, and included two in West Bromwich. The fatal case of small-pox, the first recorded in the 76 towns since the middle of May, occurred in the Metropolitan Asylums Hospital at Joyce Green. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospitals, which had steadily increased in the six preceding weeks from 2347 to 2737, had further risen on Saturday last to 2745; 324 new cases of this disease were admitted to these hospitals during last week, against 438 and 373 in the two preceding weeks. Of the 1127 deaths registered in London last week, 186 were referred to pneumonia and other diseases of the respiratory system, against 149 and 132 in the two preceding weeks, and exceeded by 19 the corrected average number in the corresponding week of the five years 1904-08. The causes of 32, or 0.8 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death registered during last week were duly certified in London, Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Nottingham, Leicester, Salford, and in 49 other smaller towns; the 32 uncertified causes of death in the 76 towns last week included six in Liverpool, five in Manchester, four in Gateshead, and two both in Sunderland and in West Bromwich.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 902 births and 428 deaths were registered during the week ending Oct. 9th. The annual rate of mortality in these towns, which had been equal to 13 · 8 and 13 · 1 per 1000 in the two preceding weeks, further declined to 12 · 0 in the week under notice. During the 13 weeks of last quarter the annual death-rate in these Scotch towns averaged 12 · 6 per 1000, and exceeded by 0 · 7 the mean rate during the same period in the 76 large English towns. The annual death-rates last week in these Scotch towns ranged from 7 · 2 and 10 · 2 in Greenock and Paisley to 12 · 7 in Glasgow and 14 · 8 in Dundee. The 428 deaths from all causes in the eight towns last week showed a further decline of 42 from the numbers in the

two previous weeks, and included 45 which were referred to the principal epidemic diseases, against 52 and 48 in the two preceding weeks. These 45 deaths were equal to an annual rate of 1.3 per 1000, and corresponded with the mean rate from the same diseases last week in the 76 English towns. The 45 deaths from these diseases in the Scotch towns last week included 18 from diarrhœa, 12 from diphtheria, seven from scarlet fever, four from "fever," three from measles, and one from whooping-cough, but not one from small-pox. deaths attributed to diarrheea in the eight towns, which had been 20 and 22 in the two previous weeks, declined to 18 last week, of which eight occurred in Glasgow, three in Dundee, and two each in Edinburgh, Paisley, and Leith. The 12 deaths from diphtheria showed a further increase upon the numbers in recent weeks, and included eight in Glasgow against seven and four in the two previous weeks. Of the seven fatal cases of scarlet fever three occurred in Edinburgh, and two both in Glasgow and in Aberdeen. The four deaths referred to "fever" included two both in Glasgow and in Edinburgh; three were certified as enteric, and one (in Edinburgh) as cerebro-spinal meningitis. The three fatal cases of measles occurred in Glasgow. The deaths referred to diseases of the respiratory system in the eight towns, which had been 41, 59, and 66 in the three preceding weeks, declined again last week to 59, and were three below the number in the corresponding week of last year. The causes of 15, or 3.5 per cent., of the deaths in the eight towns last week were not stated or not certified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0.8 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of rather more than a million, 581 births and 330 deaths were registered during the week ending Oct. 9th. The annual rate of mortality in these towns, which had been equal to 15.1, 16.9, and 16.2 per 1000 in the three preceding weeks, declined again to 15.1 in the week under During the 13 weeks of last quarter the annual death-rate in these Irish towns averaged 15.8 per 1000, whereas during the same period the death-rate did not exceed 11.9 in the 76 largest English towns and 12.6 in the eight principal Scotch towns. The annual death-rate last week was equal to 16.8 in Dublin (against 19.5 and 17.5 in the two previous weeks), 12.8 in Belfast, and 21.0 in Cork, and ranged in the smaller Irish towns from 3.9 and 5.1 in Waterford and Clonmel, to 19.7 in Kilkenny, 22.9 in Newtownards, and 32.7 in Drogheds. The 330 deaths from all causes in the 22 towns last week showed a decline of 24 from the number in the previous week, and included 37 which were referred to the principal epidemic diseases, against 42 in the previous week; these 37 deaths were equal to an annual rate of 1.7 per 1000, against rates last week from the same diseases not exceeding 1.3 in the English and in the Scotch towns. The 37 deaths from these epidemic diseases in the 22 Irish towns last week included 22 from diarrhoea, 10 from whoopingcough, three from "fever" (enteric), and one each from measles and diphtheria, but not one either from scarlet fever or small-pox. The 22 fatal cases of diarrhoa showed a decline of six from the number in the previous week, and included 11 in Belfast, five in Dublin, and four in Cork. The 10 deaths from whooping-cough included three both in Dublin and in Belfast, and two in Cork. Two of the three deaths from enteric fever occurred in Belfast. The 50 deaths referred to pneumonia and other diseases of the respiratory system last week in the 22 towns were fewer by six than the number in the previous week. The causes of seven, or 2.1 per cent., of the deaths in the 22 towns last week were not certified by a registered medical practitioner or by a coroner; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0.8 per cent., while it was equal to 3.5 per cent. in the eight Scotch towns.

VITAL STATISTICS OF LONDON DURING SEPTEMBER, 1909.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from

	mol:			Northied		CASES OF INFECTIOUS DISEASE.	Inter	TIOUS	DISEA	 				DRATHS FROM PRINCIPAL INFECTIOUS DISEASES.	FROM	PRIN	JIPAL	NFECT	TOUS E) ISEABR	, gá				
Cities and Boroughs.	Estimated popular in the middle o 1909.	Small-pox.	Bearlet fever.	Dipptheria."	Typhus fever.	Enteric fever. Other continued	fevera.	Puerperal fever.	Brysipelas. Cerebro-spinal	meningitis. Total.	Annual rate per 1000 persons 1001 persons	.xoq-liamB	Messles.	Scarlet fever.	Diphtheris.*	Whooping-	Туррия 1676г.	Enteric fever.	Other continued fevers.	Diarrhœs.	.latoT 19q əsar layınıA	1000 persons living.	Deaths from all	Death-rate per 100	Deaths of Infan under one year to 1000 births.
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" Including membranous eroup,

one or other of the nine diseases specified in the table was equal to an annual rate of 7.1 per 1000 of the population, estimated at 4,833,938 persons in the middle of the year; in the three preceding months the rates were 6.5, 6.4, and 5.0 per 1000 respectively. The lowest rates last month were recorded in Kensington, Chelsea, Hampstead, Stoke Newington, Holborn, the City of London, and Wandsworth; and the highest rates in Paddington, Islington, Bethnal Green, Poplar, Deptford, Lewisham, and Woolwich. Scarlet fever was much more prevalent than it had been in the preceding month; the greatest proportional prevalence of this disease was recorded in St. Marylebone, Bethnal Green, Poplar, Lewisham, and Woolwich. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals, which had been 2539, 2628, and 2329 at the end of the three preceding months, had risen again to 2717 at the end of last month; the weekly admissions averaged 394, against 353, 358, and 274 in the three preceding months. The prevalence of diphtheria also showed an increase compared with that in other recent months; among the various metropolitan boroughs this disease was propor-tionally most prevalent in Hammersmith, the City of Westminster, St. Pancras, Finsbury, Deptford, and Lewisham. The Metropolitan Asylums Hospitals contained 901 diphtheria patients at the end of last month, against 890 and 795 at the end of the two preceding months; the weekly admissions averaged 119, against 105, 107, and 83 in the three preceding months. Enteric fever continued to show an increasing prevalence; this disease was proportionally most prevalent last month in Islington, Holborn, Poplar, Battersea, Wandsworth, Deptford, and Greenwich. The number of enteric fever patients under treatment in the Metropolitan Asylums Hospitals, which had been 58, 60, and 55 at the end of the three preceding months, had risen again to 75 at the end of last month; the weekly admissions averaged 13, against nine, seven, and ten in the three preceding months. Erysipelas was proportionally most prevalent in Hackney, Finsbury, Shoreditch, Stepney, Poplar, and Deptford. The 22 cases of puerperal fever notified during the month included four in Wandsworth and two each in St. Pancras, Hackney, Camberwell, Greenwich, and Of the nine cases notified as cerebro-spinal meningitis three belonged to Lewisham and two to the City of Westminster.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in institutions having been distributed among the several boroughs in which the deceased persons had previously resided. During the five weeks ending Oct. 2nd the deaths of 5346 London residents were registered, equal to an annual rate of 11.5 per 1000; in the three preceding months the rates were 11.1, 10.2, and 10.5 per 1000. The lowest rates recorded last month were 6.1 in Hampstead, 8.6 in Paddington, 8.8 in Lewisham, 9.0 in Stoke Newington, 9.1 in Hackney, and 9.3 in the City of Westminster; the highest rates were 14.7 in Southwark, 14.9 in Finsbury, 15.4 in Bethnal Green, 15.8 in Poplar, 15.9 in Bermondsey, 16.3 in Holborn, and 18.0 in Shoreditch. The 5346 deaths from all causes included 803 which were referred to the principal infectious diseases; of these 30 resulted from measles, 27 from scarlet fever, of these of leading from measure, it from scales from diphtheria, 93 from whooping cough, 10 from enteric fever, one from ill-defined pyrexia, and 591 from diarrhea, but not any from small-pox or from typhus The lowest death-rates from these diseases last month were recorded in the City of Westminster, St. Marylebone, Hampstead, and Stoke Newington; and the nighest rates in Fulham, Finsbury, Shoreditch, Bethnal Green, Poplar, Southwark, Bermondsey, and Deptford. The 30 deaths from measles were 34 fewer than the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal in Shoreditch, Stepney, Poplar, and Lambeth. The 27 fatal cases of scarlet fever showed a decline of 19 from the corrected average number; the greatest proportional mortality from this disease was recorded in Bethnal Green, Poplar, Bermondsey, Lambeth. and Deptford. The 51 deaths from diphtheria were 13 below the average for the corresponding period of the five preceding years; among the metropolitan boroughs this disease caused the highest death-rates in the City of Westminster, Finsbury, Bermondsey, Lambeth, Camberwell, Greenwich, and

Lewisham. The 93 fatal cases of whooping-cough showed an excess of eight over the corrected average number; this disease was proportionally most fatal in Hammersmith, Holborn, Finsbury, Shoreditch, Bermondsey, Deptford, and Woolwich. The 11 deaths referred to "fever" were 26 below the corrected average number in the corresponding period of the five preceding years; of these 11 deaths, two belonged to Battersea and one each to nine other boroughs. The 591 fatal cases of diarrhoea were 447 below the corrected average; the greatest proportional mortality from this disease was recorded in Fulham, Finsbury, Shoreditch, Bethnal Green, Poplar, and Southwark. In conclusion, it may be stated that the aggregate mortality in London last month from these principal infectious diseases was 39 per cent. below the average.

Infant mortality, measured by the proportion of deaths under one year of age to registered births, was equal to 138 per 1000. The lowest rates of infant mortality were recorded in St. Marylebone, Hampstead, Stoke Newington, Holborn, Lewisham, and Woolwich; and the highest rates in Hammersmith, Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, and Bermondsey.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeons: H. X. Browne to the Europa, H. B. Hall to the Lancaster, A. G. Wildey to the Venerable, on commissioning, and H. Holyoake to the Vivid. Staff-Surgeons: J. Mowatt to the Cressy, on recommissioning, and J. D. S. Milln to the Hawke. Surgeon: J. McCutcheon to the Venerable, on commissioning.

ROYAL ARMY MEDICAL CORPS.

The following tour-expired officers from India will proceed to England: Lieutenant-Colonel Forrest, Major Burnside, Major Thacker, Major Clark, Major Kiddle, and Captain Patch, by the Robilla, on Oct. 14th, from Bombay. Lieutenant-Colonel Blackwell, Major Jennings, Captain Pallant, Captain Turner, and Captain MacNicol, by the *Dengela*, on Oct. 27th, from Bombay. Lieutenant-Colonel Jencken, Lieutenant-Colonel Lequesne, Major Mudlison, Major Winter, Major K. Read, and Captain Vaughan, by the *Plassy*, on Nov. 5th, from Bombay. Lieutenant-Colonel Aldridge, Captain J. Richmond, Captain Harding, Captain Hole, and Captain Grant, by the Robilia, on Dec. 10th, from Karachi. Lieutenant-Colonel Nicholls, Lieutenant-Colonel Haines, Lieutenant-Colonel Nicholis, Lieutenant-Colonel Haines, Lieutenant-Colonel O'Callaghan, Major Innis, Captain Meadows, and Captain Ahern, by the *Dongola*, on Dec. 31st, from Karachi. Lieutenant-Colonel Wilson, Lieutenant-Colonel Rowan, Captain Carter, Captain Hildreth, Captain Osburn, Captain Wiley, and Captain Otway, by the *Plassy*, on Jan. 11th, 1910, from Bombay. Lieutenant-Colonel Cocks, Lieutenant-Colonel Elkington, Major Dalton, Captain Hall, Captain Fairbairn, Captain Arthur, Contain Wasson by the *Dufferin*, on Jan. 25th, from Captain Watson, by the Dufferin, on Jan. 25th, from Lieutenant-Colonel Swan, Major Anderson, Bombay. Captain P. Collins, Captain Hull, by the Rena, on Feb. 2nd, from Karachi. Lieutenant-Colonel Gordon-Hall, Major Grech, Captain Wetherall, and Captain Douglass, by the Robilla, on Feb. 11th, from Karachi. Lieutenant-Colonel Gordon, Major Luther, Captain Hardy, Captain Johnstone, and Captain Lewis, by the *Dongola*, on March 2nd, from Bombay. Lieutenant-Colonel W. W. Pike, Lieutenant-Colonel J. R. Stuart, Major T. MacDermott, Captain J. A. Turnbull, Captain F. J. Garland, Captain F. M. M. O'Omanney, Captain F. H. Noke, and Captain O. E. Cathcart, by the Plassy, on March 11th, from Bombay.

Captain M. F. Foulds has been appointed specialist in. advanced operative surgery for the Belfast District.

The undermentioned Captains, from the Seconded List, are restored to the establishment (dated Sept. 27th, 1909):—Francis J. Brakenridge and Raymond L. V. Foster.

INDIAN MEDICAL SERVICE.

Captain White has been appointed specialist in advanced operative surgery 8th (Lucknow) Division, vice Captain Browne, R.A.M.C. Lieutenant Russell, Brigade Laboratory, Bangalore, has been appointed specialist in the prevention of disease. The services of Captain Peebles are placed at the

disposal of the Punjab Government for employment in the analyst's department. Captain Nutt is temporarily posted to the United Provinces. Major Sutherland, principal and professor of medicine, Medical College, Lahore, is confirmed in that appointment; and Major Hugo, professor of surgery, Medical College, Lahore, is also confirmed in that appointment. Captain Hamilton is selected permanently for appointment in the Jail Department. Lieutenant-Colonel Baker and Major Pigon and Major Daniell retire from the Indian Medical Service.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Supplementary List, Lieutenant William M. Browne, from the Army Medical Reserve, to be Lieutenant, and to retain the rank and seniority which he held in the Army Medical Reserve (dated Sept. 23rd, 1909). John Charles Hall to be Lieutenant (dated August 18th, 1909).

TERRITORIAL FORCE.

Royal Army Medical Corps.

3rd London (City of London) Field Ambulance: Reginald Martin Vick to be Lieutenant (to be supernumerary) (dated July 23rd, 1909).

For Attachment to Units other than Medical Units.—Lieutenant Henry S. Walker to be Captain (dated April 1st, 1908).

Surgeon-Major James Harris Garcia Whiteford, from The Clyde Division (Electrical Engineers), Royal Engineers (Volunteers), to be Major, with precedence as in the Volunteer Force (dated April 1st, 1908).

Surgeon-Captain John Rowan, from The Clyde Division

Surgeon-Captain John Rowan, from The Clyde Division (Electrical Engineers), Royal Engineers (Volunteers), to be Captain, with precedence as in the Volunteer Force (dated April 1st, 1908).

THE COURSE OF INSTRUCTION AT HASLAR.

The course of instruction of the newly entered surgeons at Haslar was brought to a close on Oct. 6th by the distribution of prizes by Inspector-General Thomas D. Gimlette, C.B., R.N. The gold medal was gained by Surgeon A. A. Sanders of the University of Birmingham and the silver medal was awarded to Surgeon K. H. Hole of Guy's Hospital. These officers also took the first and second places respectively in the combined London and Haslar examinations. Three navy regulation pocket-cases—prizes for subjects in which instruction is given at Haslar—were awarded to Surgeon Sanders, Surgeon M. P. Fitzgerald, and Surgeon G. F. Syms. The following list shows the places gained by the combined marks of the London and Haslar examinations:—

			Marks.	1		Marks
A. A. Sanders	•••	•••	5178	J. Barrett		 4399
K. H. Hole	•••	•••	5152	G. A. Jackson		 4205
G. F. Syms			5051	W. Miller		 4167
H. F. Briggs		•••	4944	R. P. M. Roberts		
M. P. Fitzgerald	•••	•••	4873	A. G. Malcolm		
J. Hadwen		•••	4479	H. C. Devas	•••	 3749
J. S. Orwin	•••	•••	4423	H. W. Nicholls		

Of these 14 surgeons 10 possessed University degrees.

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

The October issue of this journal opens with an introductory article on the Medical History of the South African War from the pen of Lieutenant-Colonel R. J. S. Simpson, O.M.G. Referring to the unjust criticisms of our sanitation during the war, the writer is of opinion that some were prompted by the parochial tendency of the average man devoid of imagination, others were the habitual, probably unthinking, criticisms which must always be expected, and others founded on mis-statements of fact. He believes that when the actual incidence of disease is considered in all its relations it will be found that the results, though not such as would be expected under our present improved organisation, are better than is generally believed. Lieutenant-Colonel T. Du B. Whaite writes some personal recollections of the early months of the South African War, which show that the risks run by the medical officer may often be as great as those of his brother in the fighting line. There is much exciting incident in the recol-lections, and the paper will be perused with interest. Among the other contents of the journal are some remarks on the treatment of gonorrhœa in Malta, by Major C. E. Pollock, R.A.M.C., chiefly with reference to the irrigation treatment, and a note on a method of securing

dressings without the use of bandages by means of gelatia. The writer, Major F. J. W. Baker, D.S.O., gives credit for the idea to Mr. B. G. A. Moynihan of Leeds.

THE NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund, held on Oct. 12th, Sir C. J. Thomas, K. C. B., in the chair, the sum of £40 was distributed among the several applicants.

Correspondence.

"Andi alteram partem."

THE TREATMENT OF SYPHILIS BY INTRAMUSCULAR INJECTIONS OF INSOLUBLE PREPARATIONS OF MERCURY.

To the Editor of THE LANCET.

SIR,—We have read with interest Dr. G. Pernet's paper in THE LANCET of July 24th "On Intramuscular Treatment of Syphilis," and the "Critical Rejoinder" of Major H. C. French in your issue of Sept. 25th, as well as the reply of Dr. Pernet in your issue of Oct. 9th. Dr. Pernet is quite able to defend himself against the attack of the gallant major and does not require any support from us, but as the value of the method of treating syphilis by intramuscular injections of insoluble preparations of mercury is the matter at issue we feel we have some title to join in the conflict. In the past five years we have made a very extensive trial of grey oil in the treatment of syphilis both in hospital and private practice, and have administered several thousand injections, and we are firmly convinced that it is one of the most efficient remedies for syphilis at our disposal.

Every opponent of the use of intramuscular injections of insoluble preparations of mercury ransacks the literature to discover fatalities following their use; and every now and then, though at ever-increasing intervals, a fresh death is discovered. We have no hesitation in suggesting, in the light of present-day knowledge, that with ordinary care every one of these deaths might have been prevented. In some of the fatal cases recorded no details as to the doses administered were given, and in others there is no indication as to who administered the injections. These two points are of prime importance, for if no record of the dose is kept, and as in some hospitals in this country and in France untrained porters, dispensers, or orderlies are allowed to administer the injections, the wonder is that disasters do not occur more

frequently.

We would strongly endorse Dr. Pernet's statement, "That when intramuscular injections of grey oil are carried out with care and precaution complications do not arise." But we insist on more care and precaution than Dr. Pernet would seem to indicate, for in addition to examining the urine of patients for albumin we make periodical examinations to ascertain the rate at which the mercury is being eliminated by the kidneys. Only by doing so can we be sure that mercurial stasis is not occurring in the system, and our repeated examinations have enabled us to forecast with a tolerable measure of accuracy the number of weeks that elapse before the mercury disappears from the urine of a patient after a course of 12 or more injections. Deficient elimination leads us at once to diminish the dose or interrupt the treatment. We have also taken skiagrams of the Hg in the muscles and have estimated the number of days required for an injection to be completely absorbed. By taking these precautions, and by gradually improving our technique of administering injections, we have so far avoided all complications.

It has not been our experience that patients take only one injection and never come again. Some years ago we made statistics of the attendance at hospital of syphilitic patients before and after we began to employ intramuscular injections, and we found that patients treated by injections attended much more regularly than those treated by oral medication. We do not believe that "severe relapses are twice as frequent after injections as after the inunction or pill treatment," nor are we alarmed by the bogey of salivation. The severest cases

of salivation we have ever seen have been in patients treated with hydrargyrum cum creta, and we have seen patients with severe ptyalism produced by oral medication with syphilitic lesions that showed no sign whatever of yielding to the mercury which had been administered. Only a few days ago we saw a young man who had been taking 6 grains of hydrargyrum cum creta daily till marked gingivitis appeared without the slightest improvement in a large papular eruption on his face, and two years ago a young man, aged 30 years, came under our care who for five months had been taking 4 grains of hydrargyrum cum creta daily till he was salivated, and yet without any amelioration of a copious papulo-pustular syphilitic eruption which covered his whole body. An examination of his urine showed that though he was suffering from gingivitis he was eliminating mercury in a fair quantity by his kidneys. In spite of the condition of his gums we did not hesitate to begin intramuscular injections, and his ptyalism disappeared, and his eruption rapidly cleared up under injections of grey oil. He received at weekly intervals four injections of 14 cgs. of metallic mercury, and then 14 injections of 7 cgs. each, and then at intervals of a fortnight two injections of 10 cgs., and when last seen was in splendid health and had put on

We are surprised that Major French should lend the weight of his authority to the recommendation "that weekly insoluble injections of standardised grey oil should not ever be made for over six weeks, and in certain cases four weeks." Each case should be treated on its merits, and it may occasionally be advisable to give a patient such scanty treatment. But our experience has been that larger doses than his (Hg—grain 1) may be safely administered for 12 or more consecutive weeks, and we are prompted to wonder whether it is for this reason -viz., inadequate dosage-that Major French has been led to conclude that "Injections of insoluble salts of mercury have not the same curative action on syphilis in the early stages as inunction or hydrargyrum cum creta with opium." We have great confidence in intramuscular injections, and so have all our patients who previously have had experience of other treatment. Our experience has been that in medical circles the strongest opponents of the method are those who have never tried it.

We are, Sir, yours faithfully,

Liverpool, Oct. 11th, 1909.

STOPFORD TAYLOR, R. W. MACKENNA.

IS SNOW-WATER UNWHOLESOME?

To the Editor of THE LANCET.

SIR,—The theory that endemic bronchocele and cretinism are due to drinking snow-water is of considerable antiquity. Peter Lowe, in 1612 ("A Discourse of the Whole Art of Chirurgery," Lib. V., cap. 40), speaking of the causes of "The Tumour in the Neck or Cragg, called Broncocele or Hernia Gutturosa," says:—

Some are externall, and some internall, proceeding of a cold and humid ayre, drinking of evill water, as those who dwel in Pimount, and about the Alpes are much subject, because the most part of their drink is melted snow: it happeneth also by the retention of monethly courses in women, and Hemorrhoides in men, with great repletion of the melancholique humor in both sexes.

Lowe gives as his authorities, Chelmetius (Enchiridion Chirurgicum) and Arnaldus de Villa Nova. I cannot trace Chelmetius, but Arnaldus lived between 1235 and 1312 A.D. In his Breviarium (Lib. II., cap. 4. Ed. Basle 1575) he describes the swelling in the throat which Arabians call "Botium." In certain districts, for instance, in Coriphiane, he says that all men and women, or the greater part of them, are so affected, "forte ex natura aeris vel aquarum," and he adds that they cannot be cured, "nisi ad aliam aquam, vel aerem alium traducuntur." He does not, therefore, attribute the disease specifically to snow-water, but to some impurity in the air or water of the country.

John Evelyn, who in medical knowledge was usually up to date, refers in his diary for 1645 to the goitrons cretins whom he saw on his journey across the Alps.

"Their drinking so much snow-water," he says, "is thought to be the cause of it; the men using more wine are not so strumous as the women. The truth is that they area peculiar race of people, and many greate water-drinkers here have not these produces tumours; it runs as we say, in the bloud, and is a vice in the race."

The belief that goitre is caused by snow-water was held in the middle of the last century, for B. Nièpce ("Traité du Goitre et des Crétinismes," Paris, 1851) discusses and dismisses the view on the grounds that goitre and cretinism are not seen in high altitudes where only snow-water is obtainable. Perhaps this old doctrine that snow-water causes so terrible a condition as goitrous cretinism has led to the belief that snow-water is generally unwholesome. Like your other correspondents, I am curious to know whether there are any other grounds for the statement. Theoretically, snow-water, like rain-water, should be the purest of beverages, and it is interesting that rain-water has only recently been advocated as a remedy for goitre.

I am, Sir, yours faithfully,

LEONARD G. GUTHRIE.

Upper Berkeley-street, W., Oct. 12th, 1909.

PS.—"Snow-water," I assume, is the result of artificially melted snow.

THE HYPNOTIC TREATMENT OF MORPHINISM.

To the Editor of THE LANCET.

SIR,—In the treatment of drug addictions, as of disease generally, two totally opposite points of view may be adopted. By some a malady is looked upon as a something to be expelled by something to be taken. For headache, for instance, take phenacetin, for rheumatic pain take aspirin, for addiction to a given drug take a different drug. By others this routine prescription of medicines is held to be an encouragement of fetichism, and although we cannot always do without them it is maintained that they should only be prescribed exceptionally, that our main reliance should be upon preventive hygiene and dietetic measures, together in what are termed nervous ailments, with re-education of selfrestraint, character, and judgment. In THE LANCET of Oct. 2nd Dr. C. J. Douglas advocates the first of these plans in the treatment of morphinism. Whilst recognising the advisability of any treatment that can overcome habit in the case of an inveterate drug-fiend, incapable of recuperation of self-control, for the ordinary habitue who continues the use of morphia only because he has never been able to renounce it entirely, the "knocking-out" (as the Americans call it) of any drug addiction by a still stronger narcotic is, I would submit, very bad practice, and only exceeded in harmfulness by the method recommended by Sir William Whitla of keeping the patient in a state of alcoholic intoxication.

The temporary suppression of morphia by such a plan is not difficult, but such a suppression does not constitute a cure of habit, which can only be effected by a restoration of resolution to have nothing to do with narcotics. To teach that one narcotic is a panacea for another is, in my experience, to ensure future relapse, as an ex-habitué is sure to return in times of insomnia, irritability, or depression to what he has previously found preventive of suffering and will almost infallibly revert to the former condition. This is the opinion of Dr. Kellogg of Battle Creek, who insists upon the necessity for drug addicts of a return to a natural life, after a weaning without drugging. An equally eminent authority, Dr. T. D. Crothers, of Hartford, Connecticut, considers it is true that "drug restraint and narcotism are demanded imperatively in some cases," but his general experience is against it, and he says that "the substitution of even a mild narcotic early in treatment has been very unsatisfactory." "Insomnia," he adds, "should not be treated by hypnotics with any degree of regularity. The danger of another addiction is so great that it is unwise to use any of the hypnotics except for a brief time."

In his more recent essay on "Drugs and the Drug Habit"

In his more recent essay on "Drugs and the Drug Habit" Dr. Harrington Sainsbury looks upon the cure of addiction as almost entirely a question of re-education of self-control. "The kernel of the system," he says, "must be re-educational." If the patient is treated in an institution "self-restraint all round will be the key-note of treatment." This is his doctrine, and even as regards suggestion, hypnotic influence that takes the place of the will and which is the psychological correlate of hypnotic drugging is to be condemned. Hypnotism should not be used as counselled by Dr. Quackenbos at a recent congress as a substitute for the will. When, says Dr. Sainsbury, a patient is influenced in this way (and the same applies to hypnotic drugging), "his

reformation is not reform at all so far as he is concerned; he has been reformed from without, but inwardly he is wholly unregenerate. The will power must be led forth from its retreat." I should like to quote more fully from Dr. Sainsbury's learned and philosophical work, which should be read and meditated by every drug habitué, but those of your readers who are interested in this subject are, no doubt, acquainted with it already.

In conclusion, I would suggest that Dr. Douglas should make known through THE LANCET the after-history of his An easy cure without the intervention of personal effort is, in my opinion, a premium to renewed indulgence, but if the results claimed for this method have stood the test of time the publication of statistics of cases permanently cured will be most interesting.

I am, Sir, yours faithfully,

Oct. 5th, 1909.

OSCAR JENNINGS, M.D. Paris.

THE ANTITRYPTIC INDEX IN DIAGNOSIS.

To the Editor of THE LANCET.

SIR,-In your first leading article in to-day's issue of THE LANCET you allude to the non-specificity of the rise of the antitryptic index of the serum in malignant disease. This statement I can thoroughly endorse as a similar rise occurs in all of the general bacterial diseases so far examined, as well as in numerous conditions in no way associated with bacterial activity. The rise in antitryptic values in all these conditions I have long considered as possibly an index of the liberation of endocellular enzymes and other products owing to cell-destruction, and not merely of leucocytic products as your article suggests. In spite, however, of this non-specificity there is a limited range within which estimation of the antitryptic index is of the greatest diagnostic value in the differential diagnosis of cancer. In cases where the index is normal discoverable cancer can be almost positively excluded, six cases of 100 failing to conform to this rule. Since 94 of these cases showed a rise, the great value of the method lies in the demonstration not of rise but of absence of rise. Your article reflects only on the inverse of I have elsewhere shown how this mode of blood examination can, in conjunction with other clinical evidence, enable us to distinguish in many cases ulcer of the stomach from carcinoma of that organ, benign stenosis of the esophagus from malignant, the presence or absence of malignant mediastinal neoplasm, carcinoma mammæ from simple growths, benign cerebral tumours from malignant, and so on, and guide us as to recurrence. Hence, feeling as I do that, within the limits I have indicated, the estimation of antitryptic values is often of great service in diagnosis, as well as in other no less important directions, I venture to hope you will find room for this letter, and in so doing correct an impression of the worthlessness of the method that might arise from the perusal of your article.

Of all the numerous observations which I have published and of others as yet unpublished, I have not yet encountered a rise in antitryptic index which could not be confirmed by other methods of estimation undertaken by other observers. This holds true of the chemical method, the viscosity method, and that of electro-conductivity. I know of few blood estimations capable of corroboration by three distinct reliable I am, Sir, yours faithfully, E. C. Horr. methods.

Harley-street, W., Oct. 9th, 1909.

THE STANDARDISATION OF THE DIGI-TALIS SERIES OF HEART TONICS.

To the Editor of THE LANCET.

SIR,—On June 19th last there was published in THE LANCET a paper entitled "Proposed International Standard for the Physiological Assay of the Heart Tonics of the Digitalis Series," which I read before the Seventh International Congress of Applied Chemistry on May 31st, 1909. Since this paper was published I have deemed it wise to modify my definition of a heart tonic unit, and would be pleased if you will give publicity to the following statement, which is taken from a paper presented before the American Pharmaceutical Association on August 19th :-

Ten times the normal minimum fatal dose (M.F.D.) per gramme body weight of frog of the injected drug properly diluted for the standard preparation is considered as a heart tonic unit (H.T.U.); consequently the number of H.T.U. in a given evoic centimetre of a preparation of the heart tonics is equal to one-tenth of the quotient

obtained by dividing 1 by such M.F.D.—i.e., the number of H.T.U. in each cubic centimetre of fluid is one-tenth of the reciprocal of the M.F.D. To illustrate: If the minimum fatal dose of a given drug per gramme body weight of a frog is found to be equivalent to 0.01, then the given substance, assuming that it belongs to the group of heart tonics, would contain 10 heart tonic units: M.F.D. $\frac{1}{0.0\overline{1}} - 10 = 10$ H.T.U.

Definition.—A heart tonic unit (H.T.U.) is ten times the normal minimum fatal dose per gramme body weight of standard test frogs kept under proper test conditions. This rule can be applied to any of the heart tonics as a means of expressing such values in whole numbers.

the heart tonics as a means of expressing such values in whole numbers.

It is to be understood that the H.T.U. is a measure of toxic value, although such toxic values may be translated directly into therapeutic values, based on the U.S.P. average dose or any other dose, but there is great discrepancy in doses for the preparations which we expect in the near future to consider in another paper.

Proposed Standards for the Most Important Preparations of the Digitalis Series of the Heart Tonics.

·		M.F.D.	Exact No. of H.T. units per c.c.	No. of H.T. units in round numbers per c.c.
Digitalis :				
Extract	 	0.0005	200	200
Fluid extract, U.S.P. 1890	 	0.0015	66	65
Tincture, U.S.P. 1900	 	0.015	6	6
Digitalin (Germanic)	 	0.00005	2000	2000
Squill:				
Fluid extract, U.S.P. 1890	 	0.0012	83	80
Strophanthus:				
Tincture, U.S.P. 1900	 	0.0000833	1200	1200-
Convallaria—Fluid extract :				
Rhizome and roots, U.S.P.	 	0.00025	400	400-
Herb	 	0.00015	666	650
Flowers	 	0.00009	1111	1100

I am, Sir, yours faithfully,

E. M. HOUGHTON, M.D.

Detroit, Michigan, Sept. 30th, 1909.

THE BENHAM TOP.

To the Editor of THE LANCET.

SIR,-Mr. C. E. Benham asks in THE LANCET of Oct. 2nd why, if my explanation of the phenomena of his top be the correct one, the green colour seen as the after-image of the black disc is not seen on the black lines. It should be noted that the red colour appears on the black lines corresponding to a portion of the retina which has not been stimulated at all because for that portion of the retina the black lines are only a continuation of the black disc. This seems to have been generally overlooked by those who have offered an explana-We have therefore to account for the red colour appearing on a part of the top corresponding to a portion of the retina which has not been stimulated by light. conditions are perfect for a contrast phenomenon, as there is a large mass of a dilute colour and a small dark portion. In many contrast experiments the induced colour so overpowers the inducing colour as to make it very difficult to ascertain the presence of the latter.

I am, Sir, yours faithfully, F. W. EDRIDGE-GREEN. Hendon, Oct. 7th, 1909.

VACCINATION WITH ATTENUATED LIVE CULTURES.

To the Editor of THE LANCET.

SIR,-Referring to my paper with the above title, published in THE LANCET of August 21st, I beg to draw attention to the fact that while typhoid vaccine (dead or alive) may be with advantage prepared with broth oultures, the dead or live dysentery vaccine and the mixed dysentery-typhoid vaccine should always be prepared with pepton-water cultures, as the inoculation of broth cultures of the Shiga-Kruse bacillus often induces a very painful infiltration at the seat of the I am, Sir, yours faithfully, inoculation.

Colombo, Sept. 16th, 1909.

ALDO CASTELLANI.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The University.

AT a recent meeting of the Council the following resolution was unanimously passed:—

The Council desires to express its profound regret at the untimely death of Professor Foxwell, and to convey to Mrs. Foxwell and the members of her family its deep sympathy with them in their bereavement. It wishes to place on record its high appreciation of Professor Foxwell's services to the University as professor of therapeutics.

-Professor Jordan Lloyd has accepted the invitation of the Council to succeed Professer Bennett May as professor of surgery.—The vacancy caused by Professor A. Robinson's acceptance of the chair of Anatomy at the University of Edinburgh has been filled by the election of Professor Peter Thompson of King's College, London. Professor Thompson was educated at the Owens College, where he became demonstrator of anatomy. He was lecturer in anatomy at Middlesex Hospital, and in 1905 was appointed professor of anatomy at King's College. It is an interesting coincidence that in each of these appointments he succeeded Professor Robinson. Dr. Robinson's services as professor of anatomy and sub-dean of the medical faculty were greatly appreciated both by his colleagues and students, and much regret was expressed at his resignation.—The chair of Zoology, vacant by the death of Professor T. W. Bridge, F.R.S., has been filled by the appointment of Dr. F. W. Gamble, F.R.S. Professor Gamble also received his early training at the Owens College, where he has been assistant director of the zoological department and lecturer and examiner in zoology. He is widely known for his researches in connexion with the colour physiology of animals. - Mr. John Dale, M.B., Ch.B., B.Sc., has been recommended for election to the Walter Myers Travelling Studentship, and the Senate has approved of his holding the studentship at Hamburg. This is the first time this scholarship has been awarded since its foundation in 1901.

Hospital Sunday Fund.

The committee of this Fund is endeavouring to meet the difficulty patients often have in obtaining notes for those hospitals which require them. Out of 17 charities participating in the collections nine have a ticket system. On the committee's suggestion, three institutions, the General, Dental, and Orthopædic Hospitals, have agreed to issue circulars to subscribers, suggesting to the latter that if they were not prepared to undertake the distribution of their own tickets they should fill a form requesting the hospital authorities to hand them over to the City Aid Society. Thus there would be a centre where patients would be most likely to get the tickets they required, and so avoid the weary tramp from one subscriber to another. Negotiations are being carried on with the remaining hospitals which at present find some difficulty in participating in the scheme.

West Bromwich District Hospital.

The annual report, which has just been adopted, shows that the number of patients treated during the year ended June 30th was in the general department 780, and in the eye department 116, an increase of nine and seven respectively over the previous year. The general out-patients numbered 9566, an increase of 1242, and in the separate eye department there were 2751 out-patients, a decrease of 89.

LIVERPOOL.

Oct. Ilth.

(From our own Correspondent.)

University of Liverpool: Interesting Blue-book.

THE Blue-book just issued from the Board of Education containing reports from the universities and university colleges in Great Britain which participated in the Parliamentary grants during the year 1907-08 contains interesting matter in regard to the University of Liverpool. There were 1004 day students, of whom 294 were women, while there were 595 persons attending the University evening courses, of whom 97 were women. About 78 per cent. of the total number of day students entered from public secondary and private schools, 21 per cent. coming from pupil-teacher centres and primary schools. A students union is in course of erection on a site adjacent to the University which will provide accommodation for men and women students

in different wings. The portion of the union building to be first erected will cost about £10,000. A students' magazine is published fortnightly during the terms. There are three terms of 11 weeks each, but the evening-class terms are of ten weeks' duration. Two halls of residence have been established in connexion with the University under the control of resident warden and separate committees, one for men and the other for women. The financial statement shows the receipt of Government grant, £13,000; city of Liverpool, £10,000; Lancashire county council, £1100; Cheshire county council, £300; Birkenhead council, £500; fees from students, £17,900; interest on investments, £10,450; special donations, £5000. The endowments represent over £300,000 and sites and buildings £350,000.

Drink and Insanity: Cost of Institutions.

Two interesting reports were presented to the city council at its recent meeting, one by the representatives of the council on the Lancashire Inebriates Board, and the other by the representatives of the council on the Lancashire Asylums Board. The reports show that more female inebriates are becoming chargeable to the public funds and lunacy is increasing alarmingly. The amount paid by the Liverpool Watch Committee towards the expenditure of the inebriates board since its inception in 1902 was £15,216, an average of about £2000 a year. The total sum paid to the asylums board for the year 1908-09 in respect of lunatics sent from the parish of Liverpool, the township of Toxteth Park, and such portion of West Derby as is within the city of Liverpool, was a little over £100,000; in addition to which the Liverpool corpora-£34,543. Out of the total patients under care in the county asylums during 1908, over 24 per cent. have been sent from Liverpool. Great difficulty is now experienced in accommodating the patients in the existing five county asylums and the cry is for more asylums. Since the opening of the reformatory for inebriates at Langho, near Blackburn, in April, 1904, 78 persons have been committed from Liverpool. The average number of convictions against Liverpool inmates at present in Langho is 21. The report states that one woman from Lancaster had been convicted 149 times.

Liverpool and Vaccination.

The anti-vaccination movement in Liverpool does not appear to find much favour with the sensible inhabitants of the city. At a meeting of the select vestry held on Oct. 5th it was reported that for the half year ending December, 1908, 2452 births were registered in the parish of Liverpool, and of these 2044 were successfully vaccinated; one child was returned as insusceptible to vaccination, and 11 children were returned as not having been vaccinated owing to the conscientious objection of their parents. The remainder of the children had either died or been removed from the parish before the period allowed for vaccination had expired or had the operation postponed by medical certificate. None of the children had been reported as having suffered from small-pox.

The Liverpool Crematorium.

The crematorium at Anfield has now been acquired by the corporation of Liverpool, and the municipality is desirous of popularising the institution. For the first nine months of this year there were 37 cremations, as compared with 34 during the whole of the year 1908. The medical officer of health, Dr. E. W. Hope, and the city engineer are at present preparing a report on the subject of cremation, which will, no doubt, take into account the progress of cremation in other towns in this country as well as on the continent. Hopes are now entertained that, under the change effected, the fees, which at present are above the reach of many, will be materially reduced. Dr. Richard Caton, formerly Lord Mayor of Liverpool, has been elected the chairman of the new crematorium subcommittee.

Munificent Gift to Bury.

Mr. Thomas Aitken of Bury has, I hear, given Holcombe Hall and the grounds adjoining to the Bury and District Joint Hospital Board for a hospital for the treatment of phthisis. The gift is valued approximately at £30,000.

Liverpool School of Tropical Medicine.

Mr. Wilfred Parsons, who was selected to take charge of a branch of the school in Grand Canary, sailed for Las Palmas on Oct. 8th.

Oct. 12th.

WALES.

(FROM OUR OWN CORRESPONDENT.)

Phthisis in Cardiganshire.

THE high death-rate from phthisis prevailing in Cardiganshire has frequently been commented upon. In the last published annual report of the Registrar-General, that for 1907, it is stated that in the five years ending 1907, of the 14 counties in England and Wales suffering the highest fatality from phthisis not fewer than seven were Welsh, and among these, Cardiganshire experienced a death-rate nearly double the average for England and Wales. The actual rates were 1.17 per 1000 in the whole country and 2.30 per 1000 in Cardiganshire. In the summary of the reports of the medical officers of health, which has just been presented to the Cardigan county council by Mr. Walter Ll. Davies, it is stated that in 1908 the phthisis death-rate in the whole county was 2.03 per 1000. Contrary to what is found elsewhere, the death-rate in the urban districts (1.7) was lower than that in the rural (2.1). In Newquay urban and Lampeter rural districts the rate was 0.8 per 1000. In no other district was it below 1 per 1000. In five districts it was over 2 per 1000 and in the town of Cardigan it was as high as 3.1 per 1000. This deplorable death-rate from a preventable disease is attributed by some of the medical officers of health to the dietary of the people, by others to the dampness and dilapidated conditions of many of the dwellinghouses, while one considers that the high fatality is influenced by the return home of persons infected elsewhere. The West Wales Sanatorium at Alltymynydd is thought to be doing something in the way of reducing the incidence of the disease, but Mr. Davies considers that the first step to take in fighting the scourge is to adopt a system of compulsory notification, together with adequate arrangements for the free bacteriological examination of sputum. There is ample evidence in the reports of the district medical officers of health that the housing conditions in the county are responsible for a large amount of ill-health among the inhabitants. In Aberayron, for example, there are damp houses built up against the live earth, without ceilings, without rain-water gutters or damp courses, and insufficiently lighted and ventilated. In three localities in the Aberystwyth rural district the houses are described as being in a dilapidated condition and hardly fit for human habitation. In many of the houses in Tregaron the only fresh-air inlet is said to be the door, and after making a house-to-house inspection the sanitary inspector found that among 720 dwellings there was no bedroom fireplace in 260, while at 230 there was no privy accommodation.

Medroal Officers' Focs.

At the last meeting of the Aberystwyth board of guardians (Cardiganshire) on Monday objection was made to the payment of £1 2s. 6d. to the district medical officer, Mr. G. R. E. Bonsall, for the quarterly visit of nine imbeciles under his charge, on the ground that one of the paupers included in the list was examined by another medical officer (Dr. J. A. Rees), who had failed to satisfy himself that the woman referred to was a lunatic. The clerk explained that there was undoubtedly a distinction between lunatics and imbeciles, and before any of them could be sent to the asylum or workhouse an order must be obtained adjudicating them lunatics under the Act. The second medical officer was called in for the purpose of certifying whether the woman could be removed into the workhouse. was agreed to pay the bill. Objection was also made to the payment of a fee of £1 1s. charged by Dr. A. Bassett Jones for assisting Mr. Bonsall in administering chloroform in the workhouse. During the discussion it was stated that the guardians had decided that all communications between them and Mr. Bonsall, who is also the workhouse medical officer, should be made in writing. The fee was objected to on the ground that the guardians had agreed, after ascertaining the fees allowed in other unions, to allow a fee of 10s. 6d. only for extra medical attendance. allowed to speak, Mr. Bonsall said he would like to know what his position would be, as he did not think any medical men in Aberystwyth, or elsewhere, would give him assistance for less than £11s. He positively declined to administer chloroform alone in instrumental cases, and it was unreasonable to expect him, when his fee was only 15s., to pay £11s.

from his own pocket for assistance. The guardians decided to allow a fee of 10s. 6d. subject to the Local Government Board's approval.

Pontyprol Water-supply.

At the last meeting of the Pontypool urban district council the medical officer of health (Mr. S. B. Mason) reported that owing to the large number of cases of diarrhœa and enteritis he had had a sample of the water examined and with not very satisfactory results. Two years ago a serious epidemic of typhoid fever in Pontypool and the adjoining districts was attributed to the water supply.

Oct. 12th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh Post-Graduate Course.

With the last week of September the Edinburgh Post-Graduate Course was completed, and the senior members of the medical school who had not shared in the work of the course begin to return from holiday and to take up their official duties. The course was again a gratifying success. It was attended by about 90 doctors of both sexes drawn from many parts of the world, who had received their student training in many different schools. The entrants worked with extraordinary zeal from morning to night and were pleased at the provision supplied by many classes. What seemed to please them especially was the number of things they could do in the small number of weeks embraced in the course.

Opening of the Winter Session at the University of Edinburgh.

The winter session of the medical faculty of the University of Edinburgh began officially on Oct. 1st, and, as was anticipated, the attendance of students was not large. The new professor of anatomy, Professor Arther Robinson, however, delivered his introductory lecture on that day in the McEwan Hall and got a very hearty reception. He spoke of "Anatomy from 1705 till 1909." On Oct. 4th, Professor Alexis Thomson delivered his introductory lecture as professor of systematic surgery. This address was also delivered in the McEwan Hall, and the new professor was accorded a hearty welcome. He dealt with the history of surgery.

Changes in the Edinburgh Extramural School of Medicine.

The main changes in the extramural school of medicine have been in the department of surgery. Mr. James Hodsdon, F.R.C.S. Edin., has resigned the lectureship in systematic surgery at Surgeons' Hall and has been succeeded by Mr. Henry Wade, F.R.C.S. Edin.; Mr. A. Miles, F.R.C.S. Edin., has resigned his lectureship at the New School and has been succeeded by Mr. J. W. Struthers, F.R.C.S. Edin. It is a fact worthy of note that at the present time not a single ordinary full surgeon to the Royal Infirmary is lecturing on systematic surgery; all the lecturers are assistant surgeons either at the Royal Infirmary or at Leith Hospital, and are consequently classed as juniors. This seems to be an unprecedented state of affairs.

The Medical Staff of the Eastern Hospital, Dundee.

The question of the medical staffing of the East Poorhouse Hospital was discussed at a recent meeting of the Dundee parish council. Various proposals were brought forward, but eventually it was unanimously decided that the matter should be referred back to the poorhouse committee. A letter was read from Dr. Eric A. Thomson tendering his resignation of the post of resident medical officer at the East Poorhouse Hospital.

Dundee Town Council and the Treatment of Phthisis.

The Dundee town council on Oct. 8th had the question of phthisis again under discussion. A subcommittee of the public health committee recommended compulsory notification, isolation of advanced cases, and negotiation with the sanatorium authorities for the acquisition of 20 beds in the institution. In support of these proposals it was pointed out that voluntary notification and the dispensary had been failures. The former had failed because of the inadequacy of the means available for securing complete and perfect notification, and the dispensary had failed because it was altogether

inadequate for the treatment of cases which they knew to exist. Compulsory notification, so far as Dundee was concerned, would cost £50 per annum at the most. In opposition to the proposals it was argued that compulsory notification would mean labelling as consumptives 2000 people, and would practically throw these people out of work. The committee's proposals were rejected by 15 votes to 9. It was then moved as an amendment that the recommendations be adopted, except the last, that referring to the 20 beds in the sanatorium. This was defeated by 13 votes to 10. It was then moved that compulsory notification be adopted and that consideration of the other proposals of the subcommittee be dropped, but this was defeated by 13 votes to 10. A proposal that provision of a simple nature be made at King's Cross Hospital for advanced cases was carried by 19 votes to 5, and the meeting, which had lasted for four and a half hours, then terminated.

New Professors.

A meeting of the Senatus of the University of Aberdeen was held at Marischal College on Oct. 5th, Professor W. Stephenson presiding. Dr. John Marnoch presented his commission by the Crown in his favour as professor of surgery in room of Professor A. Ogston. A cordial welcome was extended to the professor by the chairman. Professor Marnoch afterwards signed the roll and took his seat as a member of the Senatus. On the following day the winter session of the University of St. Andrews was opened, when Dr. J. C. Irvine was installed to the chair of chemistry in the University in room of Professor Purdie. Principal Sir James Donaldson administered the oath, and the new professor received the right hand of fellowship from his brother professors.

Medical Inspection of School Children: The Aberdeenshire Scheme.

The adjourned conference between the members of the secondary education committee and representatives of the school boards of the county of Aberdeenshire, called to consider the scheme prepared by the county committee for the medical inspection of school children was held in Aberdeen on Oct. 9th. Sir Arthur Grant of Monymusk moved:—

That the secondary committee be most respectfully asked to take back the present scheme, to reconsider the matter both from the pecuniary and other points of view, and to bring forward an amended scheme or another scheme.

The motion was unanimously agreed to and the meeting terminated.

Oct. 12th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Prevention of Cruelty to Children: Infantile Hygiene in Ireland.

READERS who are specially interested in the all-important subject of the treatment of children and who have listened with attention to the cascade of jeremiads on the subjects of "race suicide" and "physical deterioration," have taken special notice of an address delivered a few days ago to the Clonmel branch of the Society for the Prevention of Cruelty to Children by Mrs. Schooling, a member of the central executive of the organisation. As the speaker lives and works in England she was able to speak with authority, and her hearers had some substantial reason for gratification when she told them that the parents of Irish children treated children more affectionately than did the English. In none of the cases which had been investigated in the district during the past year had anything worse than neglect been brought to light, and after a prolonged and varied experience she did not think that she had ever had such a clean list in England. In Ireland they did not find the continuous and systematic brutality of treatment of children which was so frequently and so painfully revealed on the other side of the Channel and on the continent. The Irish might be hot-tempered (which was not a bad fault), and they might have other faults, but they were not brutal to little children. She had seen in Dublin, Cork, Bandon, and other places, children who, though they might be dirty and ill-clad, were still healthy and strong looking; and one would never see amongst them little wizened faces—the little old men and women children—one saw in English cities. Whilst we were very much pleased to receive this tribute of important expert testimony from a visitor coming from English districts, and with long experience therein, we fear that the contrast of the relationship between parents and children on the two sides of the Irish Channel holds good far more in the country than in the city. The children in our cities do not display the racial vigour of which Mrs. Schooling has said such complimentary things.

The Temperance Movement in Ireland.

The Father Mathew Memorial Hall was opened in 1891 by Dr. Walsh, the Catholic Archbishop of Dublin, who had laid the foundation-stone of the building in 1890, the centenary year of the Irish Apostle of Temperance. The gratifying history has since been that of a continuous increase of the roll of membership. An extension wing of the hall was opened early this month, and the vitality of the temperance movement is also testified to by its patronage in the highest places, as well as by the construction of a horse-drawn caravan which conveys pure and pasteurised milk around the roads and avenues of Phoenix Park. The "Temperance Drink Caravan" is another fruit of Lady Aberdeen's interest in the material prosperity and physical comfort of the Irish people, and to hear a country cattle-driver come to town for the day, bawling out at the top of his voice, "Will you, plaize, hand me out a glassful o' that paralysed milk as quick as ye can, for I'm very droughthy," shows the widespread good that is being done.

Royal College of Surgeons in Ireland.

Dr. A. Campbell Geddes, assistant professor of anatomy, Royal College of Surgeons in Ireland, has been elected professor of anatomy in room of the late Professor A. Fraser. Professor Geddes was formerly assistant to the late Professor D. J. Cunningham in the University of Edinburgh.

" Christian Soicnoe" in Ireland.

The estimate of "Christian Science" which has been arrived at by the Irish people has been formulated in the Freeman's Journal. A fact which can hardly fail to interest all readers of THE LANCET is that the widely read Irish newspaper was originally founded by a Dublin apothecary, and a well-known feature of its policy remains, its sympathetic attitude towards the medical profession. Research Defence Society and its able exponent, Mr. Stephen Paget, have rarely been exhibited in a better setting than in the article referred to, which bears the title of "Unchristian The text was furnished by the appearance of Mr. Paget's recent "work exposing the methods of the pseudoscience that has annexed the name of Christianity as a covering to its callous obstinacy and folly," and the quotation shows that the writer of the article minces no words. He alludes to persons who are "lacking the sound basis of a training in logic or in the principles of evidence, who because of that lack find in their education their worst enemy. Opened, by what they call their education, to the attraction of intellectual dabblings, anxious to have intellectual sensations, unable to see life as a concrete whole, supremely able to ignore half its facts if only they get a pseudo-intellectual leading towards mystic fancyings, they expose themselves to follies which the uneducated and the well-educated alike reject with loathing. These people, the crudely emotional, the entirely credulous, unbalanced, half-blind, seem to be one of the great unforeseen dangers of modern society." The view here so forcibly enunciated exposes one of the painfully conspicuous results of education at its present point. I regard the publication of this article at this juncture as one of the specially hopeful prognostics of the future of medicine in the new National University.

Belfast Charity Organisation Society.

The Charity Organisation Society in Belfast has for some time been trying to get the various hospitals and other eleemosynary societies in that city to agree to a proposal to collect subscriptions for the various philanthropic bodies by means of a schedule issued by a central agency. The scheme has, notwithstanding great opposition, been vigorously pushed, with the result that of 56 local institutions whose opinion was asked on the matter by the executive committee of the Belfast Charity Organisation Society, 17 promised to support the scheme were it adopted, 22 declined to fall in with it, while 17 have either not

replied or have replied indefinitely. The executive committee consider now that the number of institutions prepared to support the scheme is quite sufficient to warrant a beginning, and they recommend that a central scheme should be proceeded with at once, with a view to issuing the first appeal pamphlet and schedule in the beginning of next year. The Mater Infirmorum Haspital and the Royal Victoria Hospital did not see their way to join in the scheme.

Londonderry Fever Hospital.

At a meeting of the Londonderry board of guardians, held on Oct. 9th, replies were received from the medical officers of the workhouse in reference to complaints made recently by the staff nurse. It was agreed that the telephone to the hospital did not work well, but one of the medical officers pointed out that he had frequently reported the matter to the guardians. As regarded want of assistance, it was explained that when the nurse complained there were only 14 patients in the fever hospital, of whom nine were convalescent. The medical officer thought that two nurses, one for day and one for night duty, and three able-bodied women to do the rough work were sufficient. The lectures given to the probationer nurses were delivered when the staff-nurse was on duty in hospital and did not need the use of her sitting-room. As to the question of personal disinfection the medical attendant claimed to be a better judge of that matter, and he did not think the guardians need be alarmed. It was decided by the board of guardians to order a new telephone, and by 12 to 3 votes a motion was passed marking both letters as satisfactory, that is, the complaint of the nurse and the reply from the medical attendants.

Oct. 12th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Naval Medical History Sheets.

THE Under-Secretary of State for the Navy has directed that every sailor shall be provided with a medical history sheet, on which shall be entered all particulars relative to the man's height, weight, chest measurement, vision, and hearing, and which shall accompany him throughout his progress in the service. The surgeonmajors or hospital medical officers shall enter on it the results of such examinations as they make, as well as references to attacks of illness, hospital treatment, and convalescence. This record will be passed on, enclosed in a sealed envelope, from one medical officer to another by the director of the service de santé or by the officer commanding the depôt or ship in question. When a man has been treated for an illness of a confidential nature it shall be denoted only by the number contained in the nomenclature used for that purpose. Wounds or accidents which may entitle a man to a pension are to be very precisely described in this record.

Raperimental Transmission of Exanthematic Typhus by the Agency of Lice.

At a recent meeting of the Academy of Sciences M. Charles Nicolle, M. Comte, and M. Conseil said that some experimental observations on which they had been engaged seemed to show that the pediculus corporis was the principal agent in the transmission of the pathogenic virus of exanthematic typhus. Pediculi corporis collected from the human body and kept without food for eight hours were placed on a monkey suffering from this disease; they were then transferred to a healthy animal of the same species which eventually became infected. These observers therefore believed that for the prevention of exanthematic typhus it would be desirable to get rid of the parasites which infested alike the body, clothing, and bedding.

The Prevention of Cholera.

The Minister of Marine has sent to all the ports and to the officers in command of squadrons a telegram stating that in the event of cholera being notified in any port or squadron he is to be informed of the fact by telegram. During the recent epidemics in St. Petersburg some use was made of a specific serum discovered at the Pasteur Institute in Paris and the Minister of Marine has directed that it shall be employed in the navy. The quantity in the possession of the

institute being very small, it has been arranged that when the existence of cholera is telegraphed to the Minister a representative of the institute shall proceed to the scene of the outbreak for the purpose of conducting the serum treatment.

The Third Congress of Medical Practitioners.

The Third Congress of Medical Practitioners will be held in Paris at Easter in 1910, and some of the subjects to be brought forward at the meeting will include the collective results of replies to specific inquiries. The organisers of the congress appeal to the courtesy and professional fellowfeeling of the secretaries of medical associations in the hope that they will assist these investigations by either personally replying to the lists of questions which will be sent to them or by giving the names of members who may be willing to do so. In consequence of the information thus supplied the speakers who will introduce the subjects will not confine their remarks to their personal opinions, but will in addition give prominence to the ideas communicated to them by their correspondents, and the interest which these addresses will possess for the medical profession will be greatly increased. The subjects of the official programme will include the illegal practice of medicine, medical aid associations, hospital treatment of the poorer classes, hospital administration, increase of medical fees, and the application of the statutes relative to public health.

Prize Essays on the Punishments of Children.

The Société d'Hygiène de l'Enfance is offering prizes for essays on the Punishments of Children. Essays will be received up to Dec. 31st, 1909. They must not have been already published and must be written in French, German, English, Italian, or Spanish. They will not bear the author's name, but will have at the top a motto which will be repeated on a sealed envelope containing the author's name and address. Authors disclosing their identity will be excluded from the competition. The essays will not be returned even though they do not gain a prize; they become the property of the society and may not be published by their authors. The society reserves the right of extracting from the best of them the materials for a pamphlet. The prizes, which will be awarded at the annual public meeting of the society in 1910, will consist of gold, silver-gilt, silver, and bronze medals. The essays should be sent before Dec. 31st, 1909, to the President of the Société d'Hygiène de l'Enfance, 10, rue Saint Antoine, Paris.

Oct. 12th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Remarkable Case of a Morbid Craving for Glycerine.

A CURIOUS case of what might be called the glycerine habit is described in the Deutsche Medizinische Wochenschrift by Dr. Schmey of Beuthen, in Silesia. Instances of acute poisoning by glycerine have been described by a few observers. Professor Nothnagel has recorded one in which the symptoms included severe colic and syncope. Professor Lewin has remarked that the symptoms were sometimes very like those of cholera nostras together with a state of nervous excitement similar to that of alcoholic intoxication. The case recorded by Dr. Schmey is the first one of habitual consumption of glycerine amounting to a morbid habit that has been described in medical literature. The patient was a young man who, according to the statement of his mother, had contracted the habit of taking glycerine internally in great quantities. He had attended a college in a neighbouring town, but as his obsession had become known to his mother she took him home and consulted Dr. Schmey. The patient did not show any peculiar symptoms; he was rather pale, the liver was somewhat enlarged, the urine did not contain either albumin or sugar, the bowels were regular, and his appetite was tolerably good since his return home. There were slight nervous symptoms, including dermographia and an increase of reflex irritability. He only complained of general debility and weakness. He admitted that he had been in the habit of taking glycerine for the previous three months, having heard that it was a useful remedy for nervous pains. He had at first taken 100 grammes per day, but he had After these great doses he had afterwards felt a certain sleepiness, so that he used to go to bed. Dr. Schmey saw the patient on only one occasion, after which all offers of attendance or advice were refused; the mother, however, told Dr. Schmey that her son, who formerly had been good-tempered, had become impatient and irascible and that he would even steal money from his mother and sister to buy glycerine. The mother did not follow the advice of the medical man to have her son sent to an institution for medical treatment. Dr. Schmey remarks that the glycerine seemed to have produced no other ill effect than a slight enlargement of the liver. It was not easy to understand why the young man took such great quantities of glycerine; obviously it had the effect of producing in him certain pleasurable sensations similar to those of alcoholic intoxication, as mentioned by Professor Lewin.

Illegitimacy in Germany.

Dr. Fischer of Karlsruhe in Baden has drawn attention to the fact that Germany, Austria, and Sweden have a very high proportion of illegitimate children; whilst in Switzerland, England, and the Netherlands only 4 per cent. of the births are illegitimate the corresponding number for Germany was 8.5 per cent., and in some parts of Germany, such as Bavaria and Saxony, it was even 13.4 per cent. He said that illegitimate children were a danger for the community, not because of their illegitimate birth itself but because they were badly fed and were liable to contract and to spread infectious diseases; they were, as a rule, in a worse state of nutrition than legitimate children because they were more seldom suckled. But apart from their physical condition they were on an average inferior in respect of their morality, statistical researches having shown that the proportion of illegitimates among the prisoners in the penitentiaries of Würtemberg was 27 per cent., whilst in Berne it was 14 per cent., and this large proportion was reached notwithstanding the high mortality of the illegitimate. To ascertain the causes of the great number of illegitimate children the condition of the mother was of importance. In Berlin it was stated that the number of unmarried mothers under 20 years of age was nearly double that of married mothers, being 2000 for the unmarried and 1116 for the married. In the Grand Duchy of Hesse of 35,563 married mothers only 1 per cent. were under 20 years of age, but of 2756 unmarried mothers 21.8 per cent. were under 20 years of age. It has been alleged that for the improvement of the race it was desirable that women should become mothers while comparatively young, but this was only true to a certain extent, the limit being 20 years; women under that age produced, as a rule, weaker children than older women did. Dr. Fischer concludes from the above facts that in the majority of cases the young women become mothers against their will, sometimes perhaps through frivolity, but in a great many cases certainly through imprudence. It must, according to him, be a matter for careful consideration whether a remedy for this lamentable state of affairs was to be sought in legislative measures or in instruction in sexual matters as proposed by many medical men, hygienists, teachers, and philanthropists. Oct. 11th.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

Hygiene at Zürich Municipal Schools.

THE annual report of the municipal schools of Zürich for 1908 has just been published. The number of school children was 23,385. Of 3652 who were examined for the new school year 288 (or 7.8 per cent.) had to be refused owing to bodily (228) or mental (60) deficiencies. Owing to infectious diseases in their homes, 1462 children were temporarily forbidden to attend school (mostly home cases of scarlet fever and diphtheria). The ophthalmological examination of these school children showed 22·1 per cent. to have anomalies of vision, half of which (11·4 per cent.) referred to astigmatism. This year 2627 scholars of the sixth class (aged 11 to 12) were also examined. 24·7 per cent. had visual defects (astigmatism 8·7 per cent., myopia, 5·7 per cent.). The aural examination refers to 3606 children. 300 of these (8·3 per cent.) were affected. 200 cases of catarrh of the Eustachian tube were diagnosed, the majority of which (169)

had adenoids. The dental surgeon, who entered on this ew sphere of action on May 1st, 1908, had an immense amount of work in the investigation of the teeth of 3652 new scholars. Caries is very prevalent in Zürich, and only 45 (1·5 per cent.) had absolutely healthy teeth—a truly appalling fact. With due assistance he treated over 3000 patients. 27 children were given a course of treatment for stammering. The schoolmasters and parents must continue the good work begun if definite good results are to be obtained. Thousands of children joined in the sports classes arranged officially, and 1208 passed successful examinations after taking a swimming course. An investigation showed that 63 per cent. of all the scholars of the sixth class could swim. I may mention that all classes of society send their children to these municipal schools, a small minority (perhaps 200 only) attend private schools, and some 400 so-called Church schools.

Accidental Deaths in Switzerland.

The Federal Statistical Department in Berne publishes statistics for the quinquennium 1901 to 1905, of which an extract is of general medical interest. The total number of fatal accidents has increased during the last 20 years from 7949 to 10,308, or from 266 to 343.5 per 10,000 inhabitants. Falls occasioned 2608 deaths (75 being due to mountain accidents), carriage accidents 508 (motor-cars 10, bicycles 28), railway and tram accidents 410 (trams 65), bites 8, gunshot wounds 141, poisoning with berries 28, with mushrooms 19, with acids 24, with alkalies 21, with arsenic 5, with phosphorus 8, acute alcohol poisoning 34, meat poisoning 39, medicinal poisoning 29, death under anæsthetics 37, from insect stings 33, from snake-bites 2, after infection from slight wounds 232, drowning in lakes 1187, in ponds, &c., 501, poisoning by carbonic oxide 90, other gases 14, suffocation in bed 121, and from other causes 156, deaths from avalanches 56, from frost-bite 177, from burns 976, from sunstroke 60, from lightning 46, from electric currents 92, from hunger 5, and from undetermined cases 63.

Zürich, Oct. 6th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Award of the De Vincenzis Prize in Ophthalmology.

AT the "Congresso Internazionale di Oftalmologia," held at Naples in April last, it was announced that a special prize had been instituted in that department of medicine to be called the "Premio di Oftalmologia De Vincenzis," in memory of the life and work of that great pioneer. The prize, consisting of seven gold medals, is open to foreign and to national competitors, three of the medals to be awarded to the former and four to the latter. The award of the national medals is entrusted to specialists holding chairs in the several seats of learning throughout the kingdom, and one has just been conferred on Dr. Gaetano Sampieri of the Army Medical Department for his essay bearing the title "Dei Linfatici delle Palpebre e loro Vie di Reflusso" ("The Lymphatics of the Palpebræ and their Channels of Reflux").

Epidemic of Small-pow on the Neapolitan Riviera.

While a friendly controversy is now being waged between the medical schools of Paris and Turin as to whether France or Italy had the honour of being the first to practise the Jennerian prophylactic; and while there has just been unveiled at Frascati a statue of Cardinal Massaia, the great Capuchin missionary, to commemorate (inter alia) his successful introduction of vaccination among the savage tribes of Western Abyssinia-an innovation which marvellously facilitated his Christianising efforts prolonged over 35 years—we are having fresh proof of the persistence of small-pox in various provinces of the Italian kingdom, the outbreak at Parma having, at a short interval, been followed by a still more formidable visitation at Salerno. For two months, it seems, this much-frequented sun-trap on the Neapolitan Riviera has witnessed an epidemic of variola, of which 60 cases have been reported and 20 with fatal results. As recently as Sept. 27th the municipality proceeded to energetic prophylactic measures and the official vaccinators were on active duty accordingly. But the people forcibly resisted. The incident demonstrates the difficulties with which public hygiene has to struggle in Italy, and must be attributed, in the last resort, to the ignorance in which the

people are still immersed in spite of State education. The Home Office, the sanitary inspector whom it deputed to the seat of infection, the sanitary officer acting at his instance, the practitioners of the province, backed by the municipal authorities—all alike are "suspect" in the eyes of the populace, who, under that suspicion, deny themselves in presence of a loathsome and often fatal disease the benefit of a safeguard recognised as of sovereign efficacy in all civilised nations—even, teste Massaia, in benighted Ethiopia. But the interests at stake are too vital to admit of this defiance of hygienic law, and the approval, at headquarters, of the measures now taken, seconded by Government subsidies and the erection of isolation huts, above all, the preponderating good sense of the better educated, may be trusted to prevail. It would indeed be more than regrettable if, at the opening of the tourist season, the infatuation of the faex populi were allowed to deter the travelling world from one of its favourite winter resorts.

A Medical Martyr.

The sixth meeting of the "Società Italiana di Patologia," held on Sept. 27th, attracted a numerous body of the profession to the Aula Magna of the University of Modena, under the presidency of the Senator Dr. Pio Foa of Turin. In the course of the day a "targa" (memorial shield) with the portrait of Profesor Tito Carboni of Tortona, a pupil of Dr. Foa, was unveiled in the presence of the congressisti. A felicitously worded inscription from the pen of Dr. Mariano Patrizi, professor of physiology in the Modenese School, set forth the many merits of the deceased, who, a brilliant student at Turin, had achieved an honoured name in pathological research when, at the age of 42 years, he succumbed to pyæmia contracted while conducting an experiment in the laboratory. Touching attestations of Carboni's exemplary life and work were delivered by Dr. Arnaldo Maggiora, professor of hygiene at Modena, and by his old master, Professor Foa, after which the congress proceeded to business—the first paper on the agenda being Professor Bonomo's on Tuberculosis.

The Recent National Congress of Midwives.

The Seventh National Congress of Midwives was held at Bologna in September, and in response to an invitation sent through Sir William Sinclair by the president of the Congress, Professor Pazzi, the English Central Midwives Board asked Miss Rosalind Paget to attend as its delegate. Miss Fynes-Clinton represented the Incorporated Midwives' Institute. A most cordial reception was accorded both by the medical faculty and the midwives to the English representatives, who were invited to attend an operation at the "Clinica" by Professor Calderini, the well-known obstetrician. Opportunity was also afforded them of seeing the routine work of the Maternity Hospital. Italian midwives undergo a two years' course of training, and hold a position of considerable importance, and the Congress has no doubt proved an interesting object-lesson to the English visitors in the organisation and control of their profession.

The Congress of Internal Medicine at Milan.

The congress of Internal meatures at muan.

The outstanding features of this meeting were three in number: (1) the Senator Mangiagalli's paper on the "Fattore Meccanico ed il Fattore Biologico nella Patologia della Gravidanza" (The Pathology of Pregnancy: its Mechanical and its Biological Factor); (2) "The Baccelli Treatment of Tetanus"; and (3) the foundation of the National League Against Malaria. The first of these evoked special interest from Dr. Mangiagalli's well-known mastery of the whole field of obstetrics, wherein he has shown himself a worthy successor of Edoardo Porro. But the rigidly scientific tenor of the exposition, while impressing the audience profoundly, was so technical and so detailed that even experts, clinical and consultant, were fain to reserve judgment on it till they could peruse it in published forman opportunity which they will soon enjoy.

The Baccelli Treatment of Tetanus.

This again was a most interesting paper which it will be enough for the present to summarise. Baccelli's experience of the action of phenic acid, hypodermically introduced, in the "neuromyalgia" and the "neuritides" previously found intractable induced him to exhibit it in tetanus. The antitetanic serums of Behring and Kitasato, of Tizzoni and of many others, proved much less efficacious than the treatment by phenic acid, the mortality according to the two former

averaging between 40 and 50 per cent., while Tizzoni's statistics (taken from his last publication) register not less than 30 per cent. The phenic acid treatment, on the other hand, proved much more successful. Indeed, in the latest statistics of Professor Vittorio Ascoli of Rome 25 recent cases subjected to the treatment register but one terminating fatally. Dr. Baccelli then gave a clinical account of an octogenarian (male) treated by him for tetanus in its severest form. Injected in repeated high doses the phenic acid wrought a speedy and permanent cure. Dr. Victor Babes, professor of pathology at Bucharest, has published a series of experiments carried out in his laboratory on dogs, rabbits, and pigeons in which the induced tetanus was successfully treated by the same method, while Kitasato, on the lines of Baccelli, has recently made researches which demonstrate that a phenic acid solution in the proportion of 1.5 per cent. sufficed in half an hour to neutralise the toxic force of the culture in glass of the bacillus of tetanus. Quite lately Baccelli has received from correspondents in clinical schools, non-Italian as well as Italian, confirmation of the efficacy of his method, showing, inter alia, that the phenic acid develops a distinct inhibitory action on the "reflector" power of the tetanic infection on the spinal cord; that it is not only "antithermic" but antitoxic; and that the marvellous tolerance shown by the severest cases under doses of one, two, and even more grammes per diem entitles us to formulate the axiom that "tolerance of an heroic remedy stands in direct proportion to its clinical indication." This axiom, according to Baccelli, holds good for the sublimate he was the first to inject into the veins for infections of various kinds, particularly for those called by Professor Bozzolo of Turin masked infections, corresponding, in part, to the "septicæmiæ crypto-geneticæ" of Leube. The importance of the results claimed by Baccelli for his phenic acid treatment may be estimated from the fact that in the North American Civil War (1861-64) the mortality from tetanus was 93 per cent. and in the Franco-German war 90 per cent.

The National League against Malaria.

The originator of this movement, too long deferred, is Dr. Pietro Castellino, professor of medical pathology in the Neapolitan school, who won his spurs in the campaign against malaria in the Abruzzi, whose knowledge of the malady is in some respects unique, who has conducted at his own expense a "giornale anti-malarioo" already counting three years of life, and who has offered a prize of 3000 fr. (£120) for the best manual for practical and popular use on the prevention and cure of malaria. Professor Castellino, who, I may mention, sits as representative of a provincial constituency in the Chamber of Deputies, has very decided views as to the etiology and prevention of the disease, holding that the true cause of it resides in the soil, which in turn infects the air, which in turn supplies the mosquito with its pabulum. "Bonifica tellurica" must go hand in hand with "bachieve prevention—nature resenting neglected husbandry and neglected hygiene, and penalising the individual and society accordingly. Prophylaxis by systematic exhibition of quinine he does not believe in. Even if the drug could be uniformly, steadily, and intelligently consumed as an adjunct to food the prophylactic result would be nil. This, he maintains, has been proved by statistics, but he allows, on the other hand, that when the disease is present quinine is a certain cure, the vastly extended exhibition of it in regions in which it was previously unknown having reduced the yearly mortality from the disease by more than two-thirds. Admitting that the mosquito is a carrier and propagator of malaria, he quite acknowledges the efficacy of wire gauze as a protection from the insect-a resource which must be put in practice pending the thorough arrest of the infective poison at its source in the "bonifica del suolo" and the "bonifica umana." Quinine, too, must be supplied provisionally in sufficient quantity and in unadulterated quality in the malaria-haunted districts, and to this duty the Government as well as the profession are now thoroughly alive. Inspired by these principles the National League will, he believes, and before the century is much older, solve the enigma of malaria, enjoying, as it will do, the coöperation of the profession with the administration, and of both with the properly instructed individual. The Senator Camillo Golgi, at Wednesday's sitting, read a paper, "Sulla Questione della Malaria," in which he insisted, with Castellino, in the primary necessity of agrarian and hydraulic reform; and

then on the "bonifica umana" as pari passu indispensable, while (again in accord with Castellino) he scouted the "chininizzazione" (quininisation) of the human subject as worse than useless prophylactically and likely to impair the efficacy of the drug when opportunely taken. The "profilassi meccanica" (wire gauze) he recommended as a provisional protection from the mosquito, which he recognised as a carrier merely of the infection. Baccelli followed in the same sense, after which a "statuto" was drawn up and approved, succeeded by the nomination of a "Consiglio Direttivo Centrale" which will guide the operations of the league from its headquarters in Rome.

Oct. 8th

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

A Standard Medical Curriculum.

In order further to secure greater uniformity in the courses of medical education in the schools of this country the annual conference of the Council on Medical Education, at its meeting in April, recommended a standard medical curriculum, which has recently been published. In the absence of a standard as a guide there is the likelihood that some colleges would attach too much importance to some subjects and too little to others, or might go to the extreme of overloading the curriculum with unimportant details. The aim and purpose of the council were to arrange a medical curriculum which would not be so overcrowded as to prevent the best training and equipment for practitioners of medicine in all of its branches. In the preparation of the curriculum the council selected a committee of 100 men from the leading medical teachers of the United States and Canada to make an exhaustive examination of the entire problem. The curriculum was constructed on the following lines: (1) The entire medical course was to cover four years of at least 30 weeks each, exclusive of holidays, consisting of at least 30 hours per week of actual work; (2) a four years' high school education, and in addition at least one year of college work devoted to courses in physics, chemistry, biology, and modern languages was to be required for admission; and (3) the total requirement for the study of all branches of the medical curriculum for the four years was to be at least 3600 hours.

Ambulance Preparations at the Hudson-Fulton Celebration.

The Hudson-Fulton Celebration which has just closed was interesting in the elaborate preparation made by the authorities to prevent accidents and to provide facilities for the immediate care and treatment of injuries to persons. A "Committee on Public Health and Convenience" created, with the State Commissioner of Public Health as its chairman. This committee established "medical emergency stations"—viz., field hospitals, of which there were 23, open day and night, and first aid to the injured stations located at intervals of three or four blocks. These hospitals and stations were placed along the entire route of the processions and along the shore of the Hudson river opposite the fleets of battle-ships. The hospitals and stations were fully furnished, equipped, and provided with surgeons and trained nurses by the New York county branch of the Red Cross Society and by the National Volunteer Emergency Service. To supplement the regular city ambulance service a larger number of extra ambulances were provided which were utilised to convey serious cases to the city hospitals. Fast ambulance launches patrolled the river in the vicinity of the warships and accompanied the naval parade. Ambulance stations were located at several piers to facilitate the transfer of patients from the launches to the hospitals. The entire service was conducted without expense to the public. The result of these elaborate preparations was most gratifying. of the several millions of people who participated in this carnival of a week's duration not one suffered a fatal injury.

Course in Public Health.

The University of Pennsylvania has established its proposed course of lectures on public health. It is intended to qualify students for office, and includes courses on sanitary engineering, public water-supplies, theory of hydraulics, sanitary engineering of buildings, inspection of meat, milk, and other animal products, practical methods used in sanitary work, personal hygiene, general hygiene, sanitary legislation,

and the examination of social and vital statistics in the United States. The course of instruction covers a period of one academic year. All those who qualify in the final examinations will receive a diploma and will be designated as "certified sanitarians." Only persons holding the degree of doctor in medicine are eligible to the full course and entitled to the diploma.

Leprosy in the United States.

The official statistics of the Commission of the United States and Marine Hospital Service gave the number of lepers in 1892 as 278, and this is about the present number. Of those of foreign birth the Norwegians were the largest number, being 22; the Chinese are next in the list, 20; Germans and Bohemians are 12 each; and Icelanders are 11. The forms of leprosy are as follows: anæsthetic, 107; tuberculous, 88; and mixed, 83. Of the total number but 72 are segregated. The 41 Icelanders are settled in the State of North Dakota and all contracted the disease in Iceland. The large number of Norwegian lepers may be due to the fact that 170 are reported to have emigrated from Norway to the United States. The presence of so many lepers is attracting public attention, and there is a growing belief that they should be colonised.

Antituberculosis Organisations Among the Negroes.

The mortality among the negro population from tuberculosis has always been excessive. The public interest in the prevention of the disease has awakened an interest in this class, and plans for organising "Coloured Tuberculosis Leagues" have been perfected by the United States Public Health Service. The plan is to organise a branch "league" in every negro church in the country, and any coloured person may become a member of such body by payment of annual dues. The fund from the annual dues is to be used for the care and treatment of society members of that league who may be suffering from tuberculosis, and for dissemination of information by publication and lectures and the establishment of dispensaries and sanatoriums. A State league has been established in Georgia and many branch leagues have been formed.

Ether Day Celebration.

The trustees of the Massachusetts General Hospital have issued invitations to attend the exercises of the Sixty-third Anniversary of "Ether Day," on Oct. 16th. These exercises consist of demonstrations and operations in the hospital in the forenoon and exercises proper in the afternoon, when diplomas will be presented and an address will be delivered by President Eliot of Harvard College.

Sept. 30th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Plague.

THE plague returns for the week ending Sept. 4th show 1952 deaths, compared with 1811 in the week preceding. The Bombay Presidency reported 703, Madras 155, Bengal 38, United Provinces 455, the Punjab 39, Burma 60, the Central Provinces 243, Mysore State 149, Central India 85, and Rajputana 25.

The Health of Bombay.

The mortality in Bombay during the past week reveals no special features of interest in the health of the city. The total deaths were rather more numerous than in the preceding week, amounting to 602 as against 593, while the number for the corresponding week of last year was 572 and the mean for the past five years 681. Plague has very slightly subsided and accounted for only 27 deaths, the number in the previous week being 31 and in the corresponding week last year 22, while the five-yearly average is 34. Fortunately, cholera also shows signs of abating, the result, no doubt, of the fewer importations which took place. Only two cases came down from Nasik, and the total mortality of the week was 27, as against 43 the previous week. The death-rate is 32.01 per 1000 of the population and the corrected death-rate 31.27. The figure at this time of year previous to the outbreak of plague was 31 .26.

The Manufacture of Quinine.

The report of the Government cinchona plantation and factory in Bengal for the year ending in March last shows

that 938,800 pounds of bark were put through the factory. When the extensions of the factory were completed two or three years ago it was estimated that it would be possible three years ago it was estimated that it would be possessed to manufacture 30,000 pounds of quinine yearly. Last year 36,919 pounds of quinine and 7281 pounds of cinchona febrifuge were manufactured. The output of quinine has practically trebled since 1904. A quite satisfactory start was made with the manufacture of quinine in tablet form, and the factory could turn out any quantity of quinine tablets, but to do so more machinery would be required. The work of building up a reserve of quinine was continued during the year, over 18,000 pounds of quinine sulphate and nearly 4000 pounds of cinchona febrifuge being added to the stock. At the lowest estimate this was worth about one and a half lakhs of rupees, so that though the actual receipts fell short of the expenditure by some Rs. 31,000 the factory had quite a substantial balance to the good in the shape of the quinine reserve. An increase from 4000 to 5000 pounds took place in the amount of quinine utilised for pice packets, and a further large increase under this head is expected during the coming year.

Cholera in Calcutta.

In the annual report of the health officer of Calcutta attention is again directed to the high rate of mortality among Hindus; they form about 65 per cent. of the total population, but contribute 82 per cent. of deaths. suffer particularly from cholera, and there can be no doubt that the careless use of polluted water results in serious loss of life. In spite of the fact that the general water-supply of Calcutta has been improved and increased, the death-rate from cholera has been higher in the past ten years than in the previous decade. Non-Hindus, who use pipe-water freely, suffer comparatively little from the disease; and the conclusion drawn is that the sources of infection are in the river, the canal, and Tolly's Nullah. The Hindus, especially at certain festivals, drink freely from these sources, and hence they are the greatest sufferers. The health officer, in noticing the fact that cholera never leaves Calcutta entirely, observes :-

entirely, observes:—

I do not believe that Calcutta infects itself, so to speak, or that the recurring outbreaks are always indigenous in origin. Numerous deaths occur amongst the thousands who are continually streaming into the city, and many local outbreaks, if not many of the general epidemics, are due to infection brought in. We may, I think, fairly assume that as the disease wanders, so to speak, over Bengal, infecting place after place, the several attacks are due to the import of infected individuals, with the concomitant pollution of water-supplies. The river Hooghly, like the Ganges, probably receives from time to time the germs of this disease, whence they come we know not, and with such infection it produces outbreaks of cholera along its course until it ceases to be dangerous.

The only explanation, therefore, of the continuance of cholera in epidemic form in Calcutta is that the river becomes polluted at irregular intervals. Returns show that after all the great bathing festivals epidemics occur, the Ardhodaya Joge being particularly disastrous. It seems impossible to prevent these outbreaks, for the pilgrims and others who drink the foul water of the Hooghly and Tolly's Nullah, which passes near the Kalighat Temple, cannot be made to understand the risks which they run. Sanitary science is helpless in the face of popular ignorance and superstition; and cholera will take its toll of lives in Calcutta yearly until the people learn to protect themselves against the disease. The health officer deals also with epidemics of small-pox, and his remarks as to the necessity of revaccination are much to the point. It may be noted as an interesting fact, that the whole town of Calcutta is singularly free from malaria, the deaths last year being only 1.2 per 1000. The suburban wards are not so healthy, but even there the mortality is less than 3 per 1000. In rural Bengal malaria is far more deadly, especially in certain districts, which are constantly stricken with fever in the autumn.

The Malaria Conference.

Among officials attending the malaria conference in Simla next month will be Colonel T. E. L. Bate, I.M.S., and Colonel G. F. W. Braide, I.M.S., from the Punjab; Colonel W. G. King, I.M.S., Inspector-General of Civil Hospitals, Burma; and Mr. Cholmeley, Commissioner of the Magwe Division.

The Move of Troops from the Hills.

British troops will this year move down from hill stations at the normal time, unless there is a severe outbreak of malaria in the plains. So far there are no signs of this in the big cantonments. Sept. 12th.

Gbituary.

WILLIAM RIVERS POLLOCK, M.D. CANTAB., F.R.C.P. Lond.,

OBSTETRIC PHYSICIAN TO WESTMINSTER HOSPITAL; SENIOR PHYSICIAN TO QUEEN CHARLOTTE'S HOSPITAL.

By the death of Dr. William Rivers Pollock the medical profession has sustained the loss of a capable teacher and administrator and a devoted follower of our science, while his admirable personal qualities, which had endeared him to a wide circle of colleagues, friends, and pupils, have made that sense of loss far-reaching as well as personal. Dr. William Rivers Pollock was born in 1859, being the third son of Master George Pollock, formerly Queen's Remembrancer, and grandson, therefore, of the famous Chief Baren Pollock, among whose numerous descendants so many have excelled, especially at the bar, in medicine, and in literature, that they have a most interesting tabular statement to themselves in Professor Karl Pearson's "Treasury of Human Inheritance," published by the Francis Galton Laboratory, in illustration of the influences of heredity.

At Haileybury, of which school he was a member from the autumn of 1873 to the spring of 1878, "Jim" Pollock, as his boy friends always called him, showed little promise of future success in the practice of an intellectual profession. Always industrious, he never found learning easy, but he attained considerable distinction in athletics, for which he was well fitted physically and to the mastery of which he brought to bear some of the methodical persistency which characterised his work in after life. At Haileybury, as later, his high moral character and unobtrusive "goodness," his geniality and unaffected charm of manner, won for him the affectionate esteem of all with whom he was brought into contact.

On leaving Haileybury he entered St. George's Hospital, where his father's cousin, Mr. George Pollock, was at the time senior surgeon. He was an industrious student, and more than at school showed the quality of mind which later secured him his high position in medicine. Having qualified as M.R.C.S. Eng., he duly became house surgeon. He was also a prominent football player, and repeated his athletic prowess at Haileybury, in particular becoming known as one of the best hurdle-racers in the country. On the termination of his appointment at St. George's Hospital he was elected house surgeon and anæsthetist to Addenbrooke's Hospital, Cambridge, entering at the same time as an undergraduate at Trinity College, Cambridge. In 1888 he graduated as M.B. and B.C., finding time to complete his medical course while discharging his hospital duties under such vigilant eyes as those of Sir George Paget and Sir George Humphry, who was especially attached to him, and while at the University he confirmed his successes as a hurdler by winning the inter-University contest in 1884 in the then record time of 16 seconds. He did not represent the University in the athletic field in following years because he sustained a server and observe in the sustained as severe and obscure injury leading to extensive and acute phlebitis of the iliac veins which spread to the inferior vena cava and nearly proved fatal. The condition was probably due to the violent muscular exertion of hurdle-racing, and although an early diagnosis, prompt treatment by the medical staff at Addenbrooke's and Mr. George Pollock, and careful nursing restored him to health and vigour, the abdominal and venous trunks were greatly and permanently obstructed, leading to the development of a vast series of superficial veins, and necessitating the wearing of elastic supports over the lower limbs and abdomen.

On leaving Cambridge Pollock took a long sea voyage, in the course of which he met his future wife, who was the daughter of Mr. James Horne Stewart of Bathurst, N.S.W., and completed his restoration to health. He returned to London, and having decided to practise in obstetric medicine took the Membership of the Royal College of Physicians of London in 1890, and was elected in 1891 assistant physician to Queen Charlotte's Hospital. In 1893 he was appointed assistant physician to the Westminster Hospital, and at the time of his sudden death he was senior physician to the Westminster Hospital. In both capacities he rapidly established a position as one of our leading obstetricians. As a teacher he succeeded because not only had he the necessary learning and gifts of arrangement and

exposition, but he had a pronounced vein of dry and quiet humour. A very tall, serious-looking man of a notably undemonstrative manner, a droll story or an apt allusion gained point by his superficial appearance of melancholy and his aptitude as a mimic. By the various students under his teaching Pollock will be greatly missed, and no less so by his colleagues upon the staffs of the two great charities which he served. As treasurer of the medical school of Westminster Hospital he gave up his time without stint to the perfecting of the working arrangements of the school and to regular attendance at committees, and both at Westminster Hospital and at Queen Charlotte's Hospital he was most earnest in his endeavours to improve the clinical teaching in midwifery. All that he did and said on the subject was informed with practical knowledge, for in addi-tion to the appointments which we have mentioned he was consulting obstetric physician to the Westminster Dispensary and had been physician both to the St. George's, Hanoversquare, Dispensary and to the Grosvenor Hospital for Women and Children. He was also examiner in midwifery and diseases of women both at the English Conjoint Board and the University of Cambridge. In 1901 he was elected a Fellow of the Royal College of Physicians of London.

We have said almost enough to show the manner of man that Pollock was, for this brief record indicates the straightforward and simple character of the man and his steady devotion to work, which were the things that combined to bring him professional success and to bring to light that clinical skill which he always appeared to hide; but we add two brief notes from personal friends, one of whom was Pollock's teacher and the other his fellow student, because it is not always that a man is regarded with exactly the same affection and respect by his seniors and his contemporaries.

Mr. J. Warrington Haward writes: "To his numerous friends the death of Rivers Pollock is an irreparable loss. It not only takes from us a physician whose sympathetic insight into character and whose acute perception of symptoms made him an exceptionally valuable consultant, but it also robs the medical profession of one who maintained its highest traditions and who set an example of the most perfect and straightforward uprightness. In private life he was a delightful companion, full of wit and humour, and with a most amusing power of mimicry. He was, moreover, kindly, good-natured, and thoughtful for others to an extent which made him universally beloved. To his intimates his death has brought deeply felt sorrow and regret."

Dr. F. W. Hewitt writes: "Absolutely frank and straightforward in all his dealings with others, Pollock never seemed to find it necessary to adopt that unsympathetic brusqueness which so often characterises the so-called honest man. He was ever considerate for the feelings of others. whether they were rich or poor; ever courteous, ever kind, ever unselfish. Though religious in the best sense of the term, he never paraded his religion. He had a merry wit, a love of the ridiculous, and a keen sense of humour which endeared him to those who knew him best. He rarely, if ever, spoke of himself or of the physical disabilities from which he suffered though his intimate friends were well aware how greatly the latter handicapped him when in active work. By his death the medical profession has lost more, perhaps, than it realises.'

Dr. Hewitt's allusion to the deeply religious character of Rivers Pollock will be appreciated by all who knew him. His tenderness and loveableness, no less than his cheerful sense of humour, had their origin in his happy faith. This it was that enabled him, though suffering from severe physical disability, to carry on, and carry on cheerfully, his busy professional life and to project himself with the fullest sympathy into the lives of his patients.

He has left behind him a widow and two children, a son at Cambridge and a daughter a few years younger. With them we sympathise in their great bereavement.

GEORGE JOSEPH COOPER, M.R.C.S. ENG., L.S.A., M.P.

WE have to record the sudden death of one of the few medical practitioners sitting in the present Parliament, a man who was not only an enthusiastic politician but at the same time a hard-working member of his profession. If George Joseph Cooper, who was born in 1844, was educated at Leeds Grammar School and subsequently at the edical schools of Leeds, Manchester, and University College Hospital. He qualified M.R.C.S. Eng. in 1867 and took his following the debate until 6 or 7, when he returned home-

L.S.A. four years later. He gained his early clinical experience as resident medical officer at the Poplar Hospital for Accidents, and subsequently became house surgeon at the Bristol General Hospital. Returning to London, he settled in practice in Bermondsey, where he has lived ever since. He was not long in entering public life, taking a prominent interest in various questions of social and municipal reform, with the result that he was elected to the London County Council in 1889, serving on the Progressive side for 17 years, during 13 of which he was a member of the public health committee and for six years its chairman. He was on the asylums committee for 13 years and served on 14 other committees, in the business of which he proved himself an indefatigable worker. The scheme which led to the foundation of the Colony for Epileptics at Epsom was the outcome of Mr. Cooper's professional knowledge, and its successful realisation was in great measure due to his administrative ability and powers of persuasion. Perhaps his chief service to the public health was during his chairmanship of the committee charged with its protection, when his personal tour of every common lodging-house in London, and the consequent revelation of the danger from fire and infection to which many of their inmates were exposed was chiefly responsible for the formation of the register of lodging-houses. His special knowledge was also of considerable service to the Council during the small-pox epidemic of 1902, and more recently in dealing with the problem of a pure milk-supply for the metropolis. His municipal services earned him a place on the Commission of the Peace for the County of London. He only severed his connexion with the London County Council when at the last general election he was asked to stand as the Liberal Parliamentary candidate for Bermondsey, where he had become a well-known social reformer and was extremely popular with the working classes, amongst whom his medical practice largely lay. He gained the seat for his party by a very decisive victory, and during the four years that he has since spent at St. Stephen's he has taken a close interest inquestions affecting public health and the medical profession: He was among those who made a successful appeal to the Chancellor of the Exchequer to grant a rebate on the tax on petrol used by medical men in their motor-cars, and was one of the speakers when Mr. Lloyd George received a deputation on the subject. In fact, the second last division in which Mr. Cooper voted took place in connexion with the schedule of the Finance Bill dealing generally with rebates on motor spirit duty.

During the present session of Parliament Mr. Cooper introduced an Ansesthetics Bill. It stood on the order paper for second reading at the time of his death. Owing to the motions for its rejection of which notice had been given there was, of course, no chance that it would be further proceeded with this year, but he did not withdraw the Bill. He promoted an early Bill for the provision of a metropolitan ambulance service, which, however, was dropped pending the investigation of the Departmental Committee on that subject. Mr. Cooper was as enthusiastic in his Parliamentary duties as he had been when a county councillor, and there is little doubt that he allowed too great a strain to be placed on his health by his close attention to his work at Westminster, which he carried on without abandoning a professional practice of an exacting class. Only a man of exceptional grit could have served both his party and his patients as devotedly as did Mr. Cooper. He was in the House of Commons and apparently well on the evening of Oct. 6th, but was seized with sudden symptoms after he had returned home. His condition grew rapidly worse and he died within 24 hours. His remains were buried on Oct. 12th, in the presence of a gathering which included several of his former colleagues of the County Council and of the House of Commons, amongst whom was the President of the Local Government Board.

Mr. Cooper leaves a widow, a married daughter, and four sons, to one of whom, Mr. Reginald Cooper, we are indebted for some of the foregoing facts of his father's career, and the same gentleman has given us the following typical time-table of a recent day's work such as Mr. Cooper was doing. almost down to the time of his death. From 9 A.M. until 11 he would see patients at home and then pay pro-fessional visits until 1.30 or 2 in the afternoon. After a light lunch he was to be found in his place in the House of Commons as early as the Speaker, and he remained keenly

for two hours more work in his surgery. He then returned for an all-night sitting of the House, sometimes addressing a meeting of his constituents on behalf of the Budget on his way back to Westminster. To find a match for such public activity in a medical practitioner we have to cast our minds back to the strenuous life of the Parliamentarian and reformer who founded this journal.

EDWARD CLAPTON, M.D. Lond., F.R.C.P. Lond., F.R.C.S. Eng.

LATE PHYSICIAN TO, AND LECTURER ON MATERIA MEDICA AND THERAPEUTICS AT, ST. THOMAS'S HOSPITAL.

Dr. Edward Clapton, whose death we announced last week, was not known to the present generation of medical men as an active practitioner, for he has lived in retirement at Lee for a considerable time, and was in his eightieth year when he died. He was associated throughout his active career with St. Thomas's Hospital, where he passed his student life and upon the staff of which he served subsequently. He was a man of great industry and capability, and was one of the few who have taken the Fellowship of the Royal College of Surgeons by examination and subsequently turning their attention to medicine have been elected to the corresponding dignity of the senior College. In the year 1857 he graduated M.D. at the University of London and also took his F.R.C.S. Eng., and in the next year he was admitted to the Membership of the Royal College of Physicians. At this time of his life the subject of plants and their medicinal application, in which he always took a lively interest, began to engross his attention, and in 1860 he was appointed lecturer on botany in St. Thomas's Hospital Medical School, a post which was the preliminary to his appointment as assistant physician and lecturer on materia medica in the following year. Ten years later he was elected full physician to the hospital, a post from which he retired in 1875 when he was still in middle age, though he remained in active practice for many years later. He took a great interest in other matters besides those immediately concerned with his profession. A religious man, he was an earnest student of Biblical archeology, as was evidenced by his works on "The Precious Stones of the Bible" and his "Life of St. Luke," a catena of statements collected from the New Testament, Josephus, and the writings of the Fathers. In this little book he made the ingenious suggestion that "the thorn in the flesh, the messenger of Beelzebub," of which St. Paul complained, was recurrent malaria produced by mosquitoes under the control of Beelzebub, the Lord of Flies, a theory which would seem to credit the apostle with an astonishing gift of scientific prevision. He wrote a "Life of St. George," and also turned his attention to the history of his own science. Many will remember how Dr. Clapton journeyed to Cos to identify the plane tree under which the Father of Medicine sat to expound his wisdom, and how his modern disciple was so confident that he had achieved his quest that he presented the Royal College of Physicians of London with two branches plucked from the sacred tree. He wrote freely upon drugs, amongst his papers being those on the "Acid Oxalates of the Earths," the "Action of Copper in the Human System," and the "Action of Tea," whilst he prepared a map of the geographical distribution of the medicinal substances contained in the British Pharmacopæia of 1867. Dr. Clapton had a very practical and enlightened knowledge of the action of medicines and their variability in different constitutions. Besides his professional fellowships he held those of the Linnæan and Zoological Societies, and he was no collector of empty titles but a man who followed up keenly every interest with which he concerned himself. No man, perhaps, followed out more thoroughly the maxim that if a thing be worth doing it should be done with all one's might. The way in which he undertook the examination of the health resorts at home and abroad was an illustration of this. In holiday times he visited in succession all the spas of Europe in order to assure himself of their utility or the reverse, and his authority in this matter was undoubted. We are indebted to one of his former colleagues at St. Thomas's Hospital for the following appreciation of his personal qualities.

"Dr. Edward Clapton was the type of an amiable gentleman. We shall long remember his earnest, modest gaze, at once the expression of his gentle, cheery nature, and the

assurance to friends and patients alike that there was a ready access to a heart full of human sympathy. In action he was an indefatigable worker, and it was not until the yoke of many years oppressed him that his friends induced him to cease from labour. With great reluctance he did so, and gave up most of his cherished work. But even so he turned with avidity to the pursuit of a hobby which had occasionally influenced him—the formation of a collection to illustrate the early history of Judaism, of Christianity, and of Medicine—a collection which I believe to be unique. was very pleasant to listen to him when with uncommon lucidity and enthusiasm he expounded the symbolism of the precious stones in the breast-plate of the high priest. ence to these matters reminds one of the personal interest which he took in the rearrangements of the parochial matters incident to the establishment of the episcopate in Southwark. His friends have often said that he ought to have been a bishop, and truly he would have well filled a cathe-To know him was to esteem him, and to know dral throne. him intimately to love him."

Dr. Clapton's remains were buried at Stamford, Lincs, on Oct. 2nd, on which day a memorial service was held at the church of St. Margaret's, Lee.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Weeks, formerly professor of surgery at the Medical School of Maine, Brunswick.—Dr. W. T. Smith, formerly professor of physiology in Dartmouth Medical School, Hanover, U.S.A.—Dr. Heurtaux, formerly professor of clinical surgery in the Nantes Medical School and associate of the Paris Academy of Medicine.—Dr. Tourneaux, formerly physician to the Rouen hospitals.—Dr. Julius Elischer, privat docent of gynæcology in the University of Budapest.

Medical Rews.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the Second Professional Examination of the Examining Board in England in Anatomy and Physiology held on Sept. 30th and Oct. 1st, 4th, and 5th, 70 candidates presented themselves, of whom 54 per cent. were approved and 46 per cent. were rejected. The following are the names of the successful candidates:—

Edward Smith Abraham, University of Bristol; Harry Arnold Ash, Guy's Hospital; Raymond Brewitt-Taylor, St. Bartholomew's Hospital; Nai Cheune, London Hospital; Edward Robert Cecil Cooke, B.A. Cantab., Cambridge University; Frank Cuninghame Cowtan, St. Thomas's Hospital; William Townsend Dobson, University College, Cardiff; Alexander Rentoul Esler, St. Thomas's Hospital; Meredydd Ffoulkes, St. Thomas's Hospital; Ali Athar Hassan Fyzee, Bombay University; Hubert Gibson, Liverpool University; Norman Grellier, Charing Cross Hospital; Cecil Cantilupe Harrison, B.A. Cantab., Cambridge University and St. Mary's Hospital; William George Helsby, Charing Cross Hospital; Cecil Cantilupe Harrison, B.A. Cantab., Cambridge University and St. Mary's Hospital; William George Helsby, Charing Cross Hospital; George Ashby Hooton, St. Bartholomew's Hospital; George James Proctor Huddleston, University College; Frank Mainwaring Hughes, London Hospital; Frederick Malcolm Stirling Hulke, Middlesex Hospital; Arthur Richard Jennings, B.A. Cantab., Cambridge University; James Evelyn Thoresby Jones, University College; Geoffrey William King, Guy's Hospital; Edmund Thomas Howard Lea, King's College and Westminster Hospital; Charles Cooper Ling, London Hospital; Edward MacMahon Mahon, Guy's Hospital; Oswald Pitt, Manchester University; Maitland Radford, University College; Harold Robinson, Manchester University, Arthur Burch Rosher, Charing Cross Hospital; Herbert Sharpe, B.A. Cantab., Cambridge University and Guy's Hospital; Bombay University and St. Bartholomew's Hospital; Arnold Viney, St. Thomas's Hospital; Trevor Mathias Owen Williams, B.A. Cantab., Cambridge University Hospital; Arnold Viney, St. Thomas's Hospital; Trevor Mathias Owen Williams, B.A. Cantab., Cambridge and Birmingham Universities; and Henry Stanley Young, St. Thomas's Hospital:

At the quarterly examination in Practical Pharmacy held on Oct. 7th and 8th the following gentlemen were approved:—

Alan Douglas Anderson, University College; Sealy Highmore Andrews, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Cecil Stuart Baxter, Liverpool University; Cecil Bluett, Sydney University and London Hospital; Lancelot Bromley, B.A. Cantab., Cambridge University and Guy's Hospital; Arthur Charles Oakley Brown, Birmingham University and private study; Norman Stuart Carruthers, Guy's Hospital; Thomas Hungerford Cresswell, Middlesex Hospital; David Lloyd Davies, University College, Cardiff; Henry Harvard Davis, Guy's Hospital; James Anthony Delmege, Guy's Hospital; James Douglas Driberg, London Hospital; Bertle Cecil Eskell, University College, Bristol; Arthur George Bisset Fenwick, St. Thomas's Hospital; Frederick Thomas Fisher, Birmingham University; Robert William Beor Gibson, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Kenneth Banks Greenwood, London Hospital; Bvan Williams Griffith, University College, Cardiff; Norman Lester Guilford, King's College; Edward Hosward Heston, London Hospital; Herbert Richard Barnes Hull, University College, Cardiff; Sydney Anderson Keys, Middlesex Hospital; Thomas Clatworthy Kidner, private study; Alfred Bertle Kramer, Edinburgh University and London Hospital; William Ewart Latham, Liverpool University; David Charles Lloyd, Guy's Hospital; James Parkinson Lupton, St. Thomas's Hospital; William Fidler Mason, Leeds University; John Mitchell Mehaffey, London Hospital; Claude Harry Mills, Guy's Hospital; Charles Gordon Holland Moore, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Richard Goodhart Oram, Guy's Hospital; William Percival Penhalc, Middlesex Hospital; Harold Fey Percival, B.A. Cantab., Cambridge University and Guy's Hospital; Walter Alexander Reynolds, St. Mary's Hospital; Charles Dudley Roberts, Guy's Hospital; Alec Linford Saul, L.D.S. Eng.. Guy's Hospital; Thomas Harold Thomas Stoney Sharpley, Guy's Hospital; Thomas Harold Thomas, London Hospital; Llewellyn Rhys Warburton, St. Thomas's Hospital; Alec Linford Saul, L.D.S. Eng.. Guy's Hospital; Vivian Thomas Pearce Webster, B.A. Cantab., Cambridge University and Guy's Hospital; Thomas Harold Thomas, London Hospital; Llewellyn Rhys Warburton, St. Thomas's Hospital; and Leslie Gordon White, Leeds University.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated :-

PRIMARY EXAMINATION, PART II.

Anatomy.—J. M. Coplans, Westminster and Guy's Hospitals; M. J. McEnery, Royal Free Hospital; O. W. D. Steel, Cambridge and London Hospital; W. G. Tickell, Middlesex Hospital; W. H. Vincent, St. Mary's Hospital; and C. G. Waddington, Leeds.

Physiology.—P. Dvorkovitz, St. Bartholomew's Hospital; J. P. Jones, Guy's Hospital; M. J. McEnery, Royal Free Hospital; O. W. D. Steel, Cambridge and London Hospital; C. G. Waddington, Leeds; and V. J. A. Wilson, Liverpool.

FOREIGN UNIVERSITY INTELLIGENCE. Amsterdam: Dr. J. P. Kleiweg de Zwaan has been recognised as privat-docent of the History of Medicine.—Berlin: Dr. Forster has been recognised as privat-docent of Psychiatry, Dr. J. Katzensteim as privat-docent of Otology, and Dr. Paul Franckel as privat-docent of Forensic Medicine.—Breslau: Dr. Robert Scheller of Königsberg has been recognised as privat-docent of Hygiene.—Budapest: Dr. Edmund Krompecher, privat-docent of Histology and Bacteriology, has been promoted to an Extraordinary Professorship.—Cornell: Dr. Charles N. B. Camac has been appointed Professor of Medicine; Dr. Frank S. Meara, Professor of Medicine and Therapeutics; and Dr. William J. Elser, Professor of Bacteriology.—Greefswald: Dr. Edmund Allard, privat-docent of Medicine, has been granted the title of Professor.—Harrard: Dr. Edward H. Nichols has been appointed Assistant Professor of External Pathology.—Kazan: Dr. V. Burgsdorf has been appointed Professor of Dermatology.—Kharkoff: Dr. A. Cherevkoff has been appointed Professor of Physiology.— Munich: Dr. Max Richter of Vienna has been appointed Professor of Forensic Medicine.—Prague (Bohemian University): Dr. Wenzel Libensky has been recognised as privatdocent of Medicine, and Dr. Franz Procházka as privatdocent of State Medicine. - Vienna: Dr. Karl Reitter has been recognised as privat-docent of Medicine, Dr. Hans Lauber as privat-docent of Ophthalmology, and Dr. Albert Blau as privat-docent of Midwifery.

CHINESE PORK.—A recent report of the City medical officer of health states that the cargo of frozen pigs from China which arrived in the s.s. Palermo on July 31st, after they had been examined by Dr. Herbert Williams, of the Port, for trichinosis, from which they were found to be free, were transferred to the Up-town Stores, in the jurisdiction of the City authority. Although they bore a label stating that they had been inspected and were fit for food, it was found that the glands had not been examined, and therefore such inspection must have been of a perfunctory character and certainly not sufficient to allow of their being admitted without further investigation. For satisfactory examinawhethout that the three signature. For satisfactory channels, the same consider that the same than the debarred from so practising. It was decided that the Board from so practising. It was decided that the Board debarred from so practising. It was decided that the Board consider the suggestion desirable, and that it should be done as the market required. Out of a total consignment of 4663 carcasses 884 have been examined, and of these 80 was considered from the secretary of the Miller General

condemned as diseased and unfit for food. Further information on this subject will be found in our Parliamentary Intelligence in answer to a question put to the President of the Local Government Board.

MEDICAL MAYOR.—Mr. Henry Nuttall, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been selected as the Mayor of Accrington.

THE GRESHAM LECTURES.—Dr. F. M. Sandwith, Gresham lecturer in physic, will give his four lectures for the Michaelmas Term on Oct. 26th and the three following days at the City of London School, Victoria Embankment. He will deal with "Some Medical Aspects of the Poor-law Commission" under the following heads: 1. Historical survey and modern requirements. 2. Medical relief and some causes of pauperism. 3. Pauperism as it affects women and children. 4. Further causes of pauperism. These lectures are open free to the public and will begin each evening at 6 o'clock.

A GENERAL meeting of the Balneological and Climatological Section of the Royal Society of Medicine will be held at 20, Hanover-square, London, W., on Friday, Oct. 29th, at 5.30 P.M., at which the new President, Dr. Leonard Williams, will be inducted to the chair, and will deliver a presidential address entitled "To Redress the Balance." The annual dinner will take place at Oddenino's Imperial Restaurant, Regent-street (Glasshouse-street entrance), on the same evening when Dr. Williams will preside. A testimonial to Dr. S. P. Sunderland for his services to the Balneological Society during the 13 years that he was secretary will be presented at the dinner, and it is particularly hoped that there will be a good attendance.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held at Caxton House, West-minster, on Oct. 7th, when Dr. F. H. Champneys occupied the chair. A letter from the Clerk to the Privy Council, transmitting an Order of Council continuing the present rules in force for a further period of one year from Sept. 30th, 1909, was received. Before the Board directed this letter to be entered on the minutes Mr. E. Parker Young said that as no provision had been made for the payment of medical men called in by midwives some protest should be made. Resolution after resolution had been sent up by the Board on the subject, but nothing had been done. A short Bill could be passed through Parliament easily because the matter was non-contentious. The Board having had its attention called to the report of the Midwives Act committee decided to hold a special meeting of the Board on Oct. 28th. The chairman, in the course of his remarks, intimated that the question of payment of medical men called in by midwives was one of the important matters that should be considered. A letter from Mr. W. J. Robertson of Clapham, complaining of the conduct of a certified midwife, was further considered. The Board decided to refer the matter to the local supervising authority. A petition, signed by Dr. S. H. Smith of York and other persons interested in the training of midwives in Yorkshire, asking the Board to permit the written examination to be held at some recognised centre in the county, was further considered. The Board decided (a) that Leeds should be constituted one of the provincial examination centres; and (b) that the secretary should be instructed to communicate with the registrar of the University of Leeds as to holding the examinations at the University, and as to the best method of advertising locally for examiners. A letter was considered from the county medical officer of Worcestershire proposing that in cases where a certified midwife sends in a notification of a stillbirth under the Notification of Births Act, the notice required by Rule E. 20 (c) of the Board's rules should not be insisted upon. The Board decided that the reply should be that the Board has no power to dispense with any of its rules. A letter was considered from the clerk of the Hunts county council suggesting that some means—e.g., advertising in the local papers—should be taken to draw the attention of the public and of uncertified women who are still practising as midwives to the fact that after April 1st, 1910, they will be

Hospital for South-East London inquiring what course should be adopted on an occurrence of an outbreak of infectious disease in the house of a parturient woman. The Board decided that the reply should be that the Board does not see its way to advise on such cases as are not dealt with by its rules and regulations.

THE MEDICAL SERVICE OF THE METROPOLITAN ASYLUMS BOARD.—At the last meeting of the Metropolitan Asylums Board the hospitals committee reported that it had considered as to whether or not there should be a time-limit of service for assistant medical officers in the infectious hospitals of the Board. The medical superintendents had been consulted on the subject. The committee had finally decided (1) that there should be a time-limit of service for four years for junior assistant medical officers, and (2) that in the case of junior medical officers promoted to be senior assistant medical officers the limit of the total period of service should be ten years. The decision of the committee was confirmed

by the Board.

Hospital Saturday at Birmingham.—The year's collections to date amount to £19,306 9s. 7d., and contributions are still outstanding. The amount is about £1000 less than last year. The committee again recommends that £10,000 be distributed among the Birmingham hospitals and nursing societies. The convalescent home work has been carried on with great success, and the efforts in obtaining open-air treatment for consumptives have been of great value. The committee feels that the time has come to establish a home for consumptives, and hopes to make an official announcement at an early date. £4000 have been given or promised for this purpose, but at least £8000 more are required.

KING'S COLLEGE (UNIVERSITY OF LONDON).—A course of special lectures on the Pineal and Pituitary Bodies will be delivered in the Physiological Laboratory at King's College on the following Mondays at 4.30 p.m. Nov. 1st, 8th, and 15th, on the Pituitary Body, by Professor W. D. Halliburton, F.R.S; Nov. 29th, Dec. 6th, and Dec. 13th, on the Pineal Body and Reissner's Fibre, by Professor A. Dendy, F.R.S. The course is free to all members of King's College, to all students of medical schools in London, to all internal students of the University of London, and to medical practitioners on presentation of their cards. As a result of the recent examination at the King's College Hospital Medical School (University of London) Mr. P. L. Gibson (Trinity College, Oxford) was awarded the University Scholarship at this school. Proxime accessit, Mr. S. P. Rowlands.

APOTHECARIES' HALL OF IRELAND.—At a meeting of the Court of the Apothecaries' Hall the following were elected examiners for the ensuing year:—Surgery: Professor Conway Dwyer and Sir Thomas Myles. Medicine: Dr. J. M. Day and Dr. John O'Donnell. Midwifery: Dr. R. H. Fleming and Mr. R. J. White. Ophthalmology: Dr. E. Magennis and Dr. R. J. Montgomery. Pathology: Mr. J. L. Keegan and Dr. R. J. Rowlette. Medical Jurisprudence: Dr. J. C. M'Walter and Mr. W. Fottrell. Hygiene: Sir Charles Cameron and Mr. H. F. Powell. Materia Medica: Mr. J. D. Crinion and Mr. Seymour Stritch. Pharmacy: Dr. F. G. Adye-Curran and Dr. E. F. Hanrahan. Physiology and Biology: Professor D. J. Coffey, Dr. W. O'Kelly, and Dr. John Knott. Anatomy: Professor E. P. M'Loughlin and Mr. P. J. Fagan. Chemistry: Professor Hugh Ryan and Mr. B. Bourke Kennedy.

FIRE TESTS WITH FLANNELETTE.—The British Fire Prevention Committee conducted a further series of fire tests with flannelette at their Regent's Park testing station on Oct. 6th, the number of specimens that have now been under review being over 400. The reason for these tests is the great number of fatalities arising from flannelette catching fire. Ordinary flannelette, fine flannelette, non-inflammable flannelette, union and wool materials were under test in lengths of one or two yards and in the form of garments on dummies representing children. The materials had been washed at three different laundries 5, 10, and 20 times respectively. The afternoon's operations went to show that there is certainly a non-inflammable treatment available of

practical value by which fiannelette can be made effectively flame-proof. The object of the tests was to endeavour to obtain precise data as to the fire-resistance of treated flannelette after many washings, as also to devise some easy method of rapidly proving the precise resistance of flannelette sold as "non-inflammable." A report on the subject illustrated by diagrams will be shortly issued by the committee.

THE ROYAL COLLEGE OF PHYSICIANS OF LONDON—Professor J. A. Lindsay will deliver the Bradshaw Lecture at the Royal College of Physicians on Nov. 2nd, taking for his subject "Darwinism and Medicine," and Professor Sir T. Clifford Allbutt will deliver the Fitz-Patrick Lecture on "Greek Medicine in Rome" on Nov. 4th and 9th.

WESTMINSTER HOSPITAL MEDICAL SCHOOL.—
The following entrance scholarships have been recently awarded in this school:—J. S. Ranson: Epsom Scholarship, value 120 guineas. S. B. White: University Scholarship, value 70 guineas. M. C. Breese: Scholarship in Arts, value £60. H. J. Hoyte: Natural Science Scholarship, value £60. A. M. Hughes: Scholarship in Arts, value £40.

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.—The annual "public night" will be held on Oct. 20th when Mr. W. Arbuthnot Lane will give an address on "Civilisation." The chair will be taken at 8.30 P.M. by Mr. Arthur E. Barker. The first entrance scholarship at the University College Hospital Medical School (University of London) has been awarded to Mr. G. C. Chubb, D.Sc., and the second scholarship to Mr. Julian Taylor, both of University College, London.

THE NORTH LONDON MEDICAL AND CHIRURGICAL SOCIETY.—The nineteenth session of this society opened successfully on the evening of Oct. 9th with a conversazione, given by the President and council, in the boardroom of the Great Northern Central Hospital. The guests numbered between 60 and 70, and were received by the President, Dr. James Crabb. An excellent programme of music had been arranged by Mr. L. H. Glenton-Kerr, the secretary of the hospital, to whom the society is greatly indebted in many directions. There was a display of surgical instruments and appliances in the hall and the adjoining rooms. A hearty vote of thanks was accorded to the performers and to Mr. Glenton-Kerr and the guests then dispersed after a very successful evening.

LITERARY INTELLIGENCE.—Messrs. Rebman, Limited, announce for issue in October a new work on naval hygiene by Dr. James Duncan Gatewood of the United States Naval Medical School, and a little book by Dr. Robert Park entitled "The Case for Alcohol"; or, the Actions of Alcohol on Body and Soul, based largely upon the researches and discoveries of the late M. Emile Duclaux of the Pasteur Institute in Paris. The same publishers have also in the press a new edition of Sir John William Moore's well-known book on "Meteorology, Practical and Applied," which has been revised and largely rewritten, and the authorised translation into English from the German of Dr. Max Joseph's "Short Handbook of Cosmetics."—Messrs. Skeffington have in the press and will publish immediately a new book by Dr. A. G. Mortimer entitled "The Shadows of the Valley." The book is intended to supply a guide in sickness and death for the use of sick people and for all persons who minister to them.

ANNUAL DINNER OF THE CONTINENTAL ANGLO-AMERICAN MEDICAL SOCIETY.—The annual dinner of this society was held on Oct. 9th in Paris, Sir Malcolm Morris, K C.V.O., being in the chair. Among the guests were Professor Robin, Professor Segond, and Professor Chauffard. The chairman, in his toast to "The Society," laid stress on the fact that the presence of English and American medical practitioners in a health resort brought to it an undeniable increase of prosperity. Moreover, they protect their countrymen from falling into unworthy hands, directing them to "the shrines of scientific truth, among which none in the world are more famous than those in the great city of Paris." Hence the utility of the society in bringing to the notice of physicians in the United Kingdom and in America responsible men to whom they

could with confidence entrast their patients. Professor Robin, in an eloquent speech, referred to the practical value of Anglo-Saxon contributions to medical science. Vaccination with Jenner, ansesthetics with Simpson, antiseptics with Lister were cited as examples. In the course of the evening Dr. L. N. Robinson, the former honorary secretary, was presented with a handsome silver loving-cup as a token of esteem and gratitude for his services to the society, which now entered into its twenty-first year of existence.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Holiday of the Commons.

A MUCH-NEEDED holiday of a week has been taken by the House of Commons. The committee stage of the Finance Bill having been concluded, it was necessary that a short interval should elapse before the proceedings on report were begun. The Government, recognising that the strain put on the physical endurance of Members during the past few months has been without parallel in recent years, wisely resolved to give the House a holiday. It was welcome on all sides, especially to the Members of the Opposition, some of whom have expended a great amount of energy in critising the details of the Finance Bill. The air at Westminster has recently been charged with political rumour as to the fate of this measure, and when the House resumes, the strenuous Parliamentary life will begin again with redoubled energy. breathing space of a week is therefore felt to be a great relief.

Medical Men and the Petrol Duty.

The CHANCELLOR of the EXCHEQUER some time ago promised to a deputation of medical men that a rebate of half the duty would be given to members of their profession in respect of the petrol used by them in their motor cars. Mr. LLOYD-GEORGE, accordingly, has moved an amendment to the fifth schedule of the Finance Bill to carry out his romise. It was accepted without discussion and relieves from half the petrol tax "motor spirit used for the purpose of supplying motive power to a motor-car kept by a duly qualified medical practitioner while it is being used by him for the purposes of his profession."

The Housing and Town Planning Bill.

The Housing and Town Planning Bill has been read a third time and passed by the House of Lords. The amendments which have been introduced into the measure since it left the House of Commons have been far-reaching and drastic. It is certain that objection will be taken to them when that House comes to consider them, and unless agreement can be reached the Bill will be dropped. Some words used by the Barl of Onewe in the discussions which arose on the third reading are ominous. He confessed a certain scepticism whether the Bill would ever pass into law. It is apparent from the Earl's remarks that the Government is unwilling to accept the measure in the shape to which the House of Lords has reduced it. The next stage in its progress is the consideration by the Commons of the Lords' amendments.

HOUSE OF COMMONS.

WEDNESDAY, OCT. 6TH.

The Decrease of Hydrophobia.

Sir George Keekwion asked the President of the Local Government Board what were the number of deaths and the death-rates per million from hydrophobia in Great Britain and France, respectively, in each of the last 30 years.—Mr. Burss furnished the following written reply: The number of deaths from hydrophobia and the death-rates per million of population in Great Britain in each of the years from 1878 to 1907 are shown in the appended table. Similar information as regards France is, I am informed, not available:—

Year.		Number of deaths in Great Britain.		hs st	Death- rates per million persons living.	Year.	Year.			er hs at n.	Death- rates per million persons living.
1878	•••		51		1.78	1893		•••	7		0.21
1879	•••	•••	39		1:34	1894	•••		13		0.38
1880	•••	•••	40		1.36	1895		•••	20		0.58
1801	•••	•••	37	•••••	1.24	1896	•••	•••	8	•••••	0.23
1082	•••	•••	30	•••••	1.00	1897	• • • •	•••	6	•••••	0.17
1883		•••	34		1.12	1898	•••		2		0 ∙06
1884	•••	•••	29		0.94	1899	•••	•••	_		_
1886	•••		60	•••••	1.93	1900	•••		_		_
1886		•••	26		0.83	1901	•••		1		0.03
1887	•••		29		0 -91	1902			3		0.08
1888	•••	•••	14		0.44	1903	•••				. —
1889	•••		30		0.93	1904			1		0.03
1890		•••	8		0.24	1905	•••		_		. —
1891			7		0.21	1906	•••		_		
1892			6		0.18	1907			_		_

THURSDAY, OCT. 7TH.

Reported Case of Beri-Beri in Ireland.

Reported Case of Bert-Bert in Ireland.

Mr. Gonor O'Kelly asked the Vice-President of the Department of Agriculture (Ireland) whether his attention had been called to the fact that a Norweglan named Obsen, employed at the whaling station on Iniskea Island, in the county of Mayo, was recently admitted to the local hospital in Belmullet, and was certified by the hospital doctor to be suffering from beri-beri; and if so, was he in a position to state the causes that led to the outbreak of this disease?—Mr. Redmond Barry (on behalf of Mr. T. W. Russell) answered: The department has no information on the subject.

Mr. Dillon: Will the honourable and learned gentleman make inquiry into the matter, and also into the general feeling of the people in the district?—Mr. Redmond Barry: I will communicate with the Vice-President of the Department of Agriculture on the subject.

Chinese Pork in the English Market.

Chinese Pork in the English Market.

Mr. Fill asked the President of the Local Government Board how much of the Chinese pork had now been passed and placed upon the market; whether the same was all in a good condition; and when the report of the inspectors would be received.—Mr. Burns replied: I am informed that 1182 carcasses out of the whole consignment of Chinese pork had up to, and including, yesterday been thawed out and examined; 107 carcasses had been condemned and the remaining 1075 carcasses had been condemned and the remaining 1075 carcasses had been consumption. I understand that a report to the corporation by the medical officer of health, in which he refers to the results of the examination of the carcasses, so far as it has at present been carried out, will be issued to-day.

Mr. Dillon: Will the right honourable gentleman take into consideration the desirability of absolutely prohibiting the importation of Chinese pork into this country for human food?—Mr. Burns: No, sir, I cannot give any such undertaking.

sideration the desirability of absolutely promoting one importance. Chinese pork into this country for human food?—Mr. BURNS: No, sir, I cannot give any such undertaking.

Mr. KLERRIDE: May I ask whether the right honourable gentleman has received an assurance through the British Ambassador in China that all these pigs had been fed on cooked rice?—Mr. BURNS: Inquiries were made by the Local Government Board some months ago before this consignment arrived as to the character of the pork and as to the method of feeding the pigs, and we were quite satisfied that it was satisfactory. I can state further, in answer to the honourable Member, that the Meat Trade Journal says of this pork: "Such of it as we have had the opportunity of seeing was excellent pork of its kind, and that it realised the prices quoted, proves it; finally, that it passed the double extra inspection of the Port Sanitary Authority and the cagle-eyed examination of the practical inspectors attached to the Central Meat Market demonstrates that such of it as went into the hands of the retail butcher was sound and wholesome." I have myself gone with my officers into refrigerating stores in the wholesale market and into the retail shops and I also had the pleasure of going down to the New Cut, Lambeth, on Saturday night to see whether the opinion of those better qualified than myself could be confirmed by a layman.

Mr. Durvey. Heat the right honourable gentleman tasted the pork?

Mr. Dillon: Has the right honourable gentleman tasted the pork?

Mr. Dilings: Mas the right honourable genteeman tasted the pork?—Mr. Burns: Yes, I have.

Mr. W. Thorne: May I ask what guarantee there is that these condemned carcasses are not used for human consumption?—Mr. Burns: The Port Sanitary Authority and the riverside local authorities, when they condemn animals as being unfit for human consumption, either have them chemically destroyed or send them to the dust-destructed by behaviord.

tion, either have them chemically described.

Mr. Fell: Has the right honourable gentleman received any advices of any further cargoes or shipments of pork from China either arrived or expected shortly to arrive in England?—Mr. Burns: The answer is

Tests for Colour Blindness.

Mr. HENNIKER HEATON asked the President of the Board of Trade Mr. Henniker Heaton asked the President of the Board of Trade whether he was now in a position to give the results of his inquiries as to the tests for colour blindness used by foreign nations.—Mr. Tennant (who repited on behalf of Mr. Churchill) wrote: The Board of Trade is already in possession of a considerable amount of information with regard to the colour vision tests adopted by the principal maritime countries for their merchant services. With a view, however, to making the return moved for and ordered on July 14th as complete as possible, it requested the Foreign Office to obtain further detailed information in the case of certain important countries. On receipt of that information the return in question will be presented.

Appointments.

Successful applicants for Vacancies. Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANGET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

BOYD, WILLIAM, M.B. Edin., has been appointed Assistant Medical Officer at the Derby Borough Asylum.

CONNOLLY, T. J., M.B., B.S.R.U.I., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Kinvarra District of the county of Galway.

CROWE, H. NEVILLE, M.B., Ch.B., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant Surgeon to the Ophthalmic Hospital, Worcester.

GEDDES, A. CAMPBELL, M.D. Edin., Ch.B., has been appointed to the Chair of Anatomy in the School of Medicine of the Royal College of Surgeons in Ireland.

GLASHAN, HERBERT W., M.B. Aberd., has been appointed Assistant Medical Officer to the Natal Government Asylum, Pietermaritzburg.

HUME, J., M.S., C.M., D.P.H., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

- LAPAGE, C. P., M.D. Vict., M.R.C.P. Lond., has been appointed Lecturer in the Observation of Children and School Hygiene to the Manchester University.
- PRICE, E. W., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Narberth District of the county of Pembroke.
- SPRAWSON, F. E., M.R.C.S., L.R.C.P. Lond., L.D.S., has been appointed Medical Superintendent of the National Dental Hospital jointly with Mr. Steadman.
- STEADMAN, F. St. J., M.R.C.S., L.R.C.P.Lond., L.D.S., has been appointed Medical Superintendent of the National Dental Hospital jointly with Mr. Sprawson.
- WATSON, C. GORDON, F.R.C.S. Eng., has been appointed Surgeon to the Royal General Dispensary, E.C.

Pacancies.

- For further information regarding each vacancy reference should be made to the advertisement (see Index).
- AYLESBURY, ROYAL BUCKINGHAMSHIRE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, washing, and lodging.
- BLACKBURN AND KAST LANCASHIRE INFIRMARY. Senior House Surgeon, also Junior House Su with board, residence, &c. Junior House Surgeon. Salaries £110 and £80 per annum,
- BOURNEMOUTH, ROYAL NATIONAL SANATORIUM FOR CONSUMPTION AND DISEASES OF THE CHEST.—Resident Medical Officer. Salary £10 per month, with board, residence, and washing.
- BRIGHTON, SUSSEX COUNTY HOSPITAL.—Third House Surgeon, unmarried. Salary £50 per annum, with apartments, board, and laundry.
- BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Assistant House Surgeon. Salary £50 per annum, with board, rooms, and attendance.
- BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer for six months. Salary at rate of £50 per annum, with board, lodging, months. Sals and washing.
- CARDIFF INFIRMARY (GENERAL HOSPITAL).-House Surgeon. Salary £60, with board and residence.
- CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Physician to Out-patients.
- COLCHESTER, RSSEX COUNTY HOSPITAL House Physician, also House Salary in each case £80 per annum, with board, washing, and residence.
- CORE. UNIVERSITY COLLEGE.-Demonstrator in Physiology. Salary £150 per annum.
- EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road London, S.E.—House Physician for six months. Salary at rate of £60 per annum, with board, residence, and washing.
- HANLEY EDUCATION COMMITTEE .- School Medical Officer (female). Salary £200 per annum.
- Hospital for Consumption and Diseases of the Chest, Brompton. Resident House Physicians for six months. Salary £25.
- HULL, ROYAL INFIRMARY.—Casualty House Surgeon. Salary at rate of £60 per annum, with board and lodging.
- IPSWICH, EAST SUFFOLK AND IPSWICH HOSPITAL.—House Surgeon. Salary £65 per annum, with board, lodging, and washing.
- King Edward VII. Sanatorium, Midhurst, Sussex.—Junior Assistant Medical Officer. Salary £100 per annum, with board, lodging, and attendance.
- KING'S COLLEGE HOSPITAL MEDICAL SCHOOL (UNIVERSITY OF LONDON) -Sambrooke Medical Registrar.
- LAMBETH WORKHOUSE, Renfrew-road, Lower Kennington-lane, S.E.—Assistant Medical Officer. Salary £150 per annum, with board, apartments, and washing.
- LEAVESDEN ASYLUM, Herts. Second Assistant Medical Officer, married. Salary £180 per annum, with board, lodging, and washing.
- LEEK, STAFFORDSHIRE COUNTY ASYLUM, Cheddleton.—Junior Assistant Medical Officer. Salary £150 per annum, with board, apartments, and washing.
- LIVERPOOL DISPENSARIES.—Assistant Surgeon, unmarried. Salary £100 per annum, with board and apartments.
- LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—Assistant Surgeon and two Assistant Anæsthetists.
- MAIDSTONE, KENT COUNTY ASYLUM. Fourth Assistant Medical Officer, unmarried. Salary £175 per annum, with quarters, attendance, &c.
- MARGATE, ROYAL SEA-BATHING HOSPITAL.—Resident Surgeon. at rate of £80 and £120 per annum, with board and residence.
- MERTHYR TYDFIL WORKHOUSE.—Assistant Medical Officer. Salary £120 per annum, with apartments, rations, laundry, and attend-
- MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.—Senior and Junior Resident Medical Officers. Salary £100 and £50 per annum respectively, with board and residence.
- NEW HOSPITAL FOR WOMEN, Buston-road, N.W.—Two House Surgeons also Clinical Assistant (females).

- NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160, with apartments, attendance, light, and fuel.
- NOTTINGHAM GENERAL HOSPITAL. Assistant House Physician. & £60 per annum, with board, lodging, and washing. Also House Surgeon. Salary £100 per annum, with board, lodging, and Surgeon. washing.
- Paddington Green Children's Hospital, London, W.—House Physician, also House Surgeon, both for six months. Salary in each case at rate of 50 guineas per annum, with board and residence.
- PARTICK, BURGH OF .- Medical Officer of Health. Salary £250 per annum.
- PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—House Surgeon, House Physician, Junior House Surgeon, and Junior House Physician. Salaries of two former £75 per annum, and of two latter £40 per annum, with residence, board, and laundry.
- EEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.— Assistant Resident Medical Officer. Salary £75 per annum, with board, residence, and washing.
- ROYAL BAR HOSPITAL, Soho, London, W .- Honorary Amistant Anæsthetist.
- ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, London, E.C.—Assistant Physician.
- ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Third House Surgeon. Salary at rate of £50 a year, with board and residence.

 ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, Waterloo Bridge-road, S.E.—Junior Resident Medical Officer. Salary at rate of £40 per annum, with board and washing.
- ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, Strand, W.C.—Pathologist and Curator. Salary £50 per annum. Also Assistant House Surgeon for six months. Salary £20, with luncheon and tea
- St. MARY'S HOSPITAL, Paddington, W .- Assistant Physician to Outpatients.
- Salford Royal Hospital.—House Surgeon. Salary at rate of £60 per annum, with board and residence.

 Stafford, Staffordshife General Infirmary.—Assistant House
- Surgeon. Salary £82 per annum, with board, residence, and
- STAMFORD HILL AND STOKE NEWINGTON CHARITABLE DISPENSARY, N.—Assistant Medical Officer. Salary £100 per annum, with board and residence.
- STROUD GENERAL HOSPITAL.-House Surgeon. Salary £100 per annum, with board, lodging, and washing.
- TAUNTON AND SOMERSET HOSPITAL, Taunton.—Resident Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and laundry.
- TEIGNMOUTH HOSPITAL, S. Devon.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

 TUNBRIDGE WELLS GENERAL HOSPITAL.—Junior Resident Officer. Salary £80 per annum.
- UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.—Assistant in Bacteriology. Salary £60 per annum.
- WAKEFIELD, CLAYTON HOSPITAL.—Senior House Surgeon, unmarried.
 Salary £120 per annum, with board, lodging, and washing.
- WESTMINSTER GENERAL DISPENSARY.—Resident Medical Officer.
 Salary £120 per annum, with rooms, gas, coal, and attendance.
 Wolverhampton and Staffordshire General Hospital.—House
 Surgeon. Salary £30 per annum, with board, lodging, and
- THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Liansawel, in the county of Carmarthen; and at Barnet, in the county of Hertford,

Births, Marringes, and Deaths.

BIRTHS.

- Hume.—On Oct. 5th, at Lahore, India, the wife of Norman H. Hume, I.M.S., of a son.
- LONGLEY.—On Oct. 11th, at Strathearne, Saltburn, the wife of J. Alan Longley, F.R.C.S.B., of a daughter.
- NEILD.—On Oct. 3rd, at 9, Richmond-hill, Clifton, Bristol, to Dr. and Mrs. Newman Neild, a daughter.
- PEACOCK.—On Oct. 6th, at Steeple Aston, Oxon., the wife of Dr. W. E. Peacock, of a son.

MARRIAGES.

- EVANS—FERGUSSON.—On Oct. 11th, at St. Matthias, Richmond, Surrey. Percy Evans, Major R.A.M.C., to Hilds Annie Drummond, younger daughter of the late James Fergusson, F.R.C.S.E., and Mr. Fergusson.
- SANDERS—ALLEN.—On Oct. 6th, James Herbert Sanders, M.D., J.P., of Hong-Kong, to Mary Beatrice, fourth daughter of W. H. Allen, Esp.
- VAUGHAN—Anderson.—On Oct. 6th, at St. John's, Notting-bill.
 Rdmund Wayne Vaughan, R.A.M.C., to Hilda Margaret Anderson,
 youngest daughter of the late Lieutenant-Colonel P. C. Anderson.
 R.A.
 - N.B.—A fee of 5s. is charged for the Innertion of Notices of Birth. Marriages, and Deaths.

Days on sick list owing

Aotes, Short Comments, and Answers to Correspondents.

CORRECTIVE DRUGS FOR ACETANILIDE AND ANTIPYRIN.

In THE LANCET of August 14th, p. 511, we published a note based upon an American official report dealing with the toxic effects of acetanilide and its allied group of drugs. An interesting sequel to that report has been published recently in the same country by Dr. Worth Hale, who has conducted a series of experiments upon animals to determine to what extent the toxicity of acetanilide and antipyrin is modified by certain other drugs (Bulletin No. 53, Hygienic Laboratory, United States Public Health and Marine Hospital Station, Washington, D.C., September, 1909, pp. 60). He finds that the deleterious effect of acetanilide upon the heart is very imperfectly antagonised by caffeine. So far as the contractile power of the heart is concerned, the antagonism is very weak or even not present at all, and in some cases the two drugs seem to combine to depress the heart to a greater degree than acetanilide does when given alone. The heart rate is not slowed after the administration of this combination, as is the case when acetanilide is given alone, and the decreased heart rate due to acetanilide alone tends to become normal upon the subsequent injection of caffeine. Sodium bicarbonate, on the other hand, appears markedly to lessen the poisonous effects of acetanilide upon the heart in the experiments upon the intact animal. Dr. Hale found that the toxicity of acetanilide is considerably increased by codeine, heroin, and morphine, while salicylic acid and the bromides do not seem to alter its toxicity in any way. These experiments indicate, therefore, that caffeine and the opium alkaloids increase the danger of acetanilide mixtures, while sodium bicarbonate appears to be a fairly good antagonist. Although it is generally recognised that antipyrin is less toxic than acetanilide it has never been so popular as an ingredient of headache powders.

Dr. Hale extended his experiments to antipyrin and found that caffeine is not materially antagonistic to it, but that it prevents the slowing of the heart rate. In experiments made upon the intact animal mixtures of these drugs were invariably more poisonous than antipyrin alone. Sodium bicarbonate however, was somewhat antagonistic to the heart effect of antipyrin, but when given to the intact animal it did not seem to lessen the toxicity of the antipyrin in any degree. Dr. Hale's work on these substances forms a valuable contribution to our knowledge of their action. Most of the so-called "headsche powders" contain acetanilide admixed with caffeine or sodium bicarbonate or both. The caffeine was added under the idea, now shown to be erroneous, that it served to counteract the ill-effects of acetanilide on the heart. The addition of sodium blearbonate was made in order to facilitate the ingestion of acetanilide by increasing its solubility. In point of fact, alkaline salts retard solution of acetanilide, and it is possible that sodium bicarbonate acts beneficially for the reason that it prevents the immediate admission of the whole dose of the drug into the blood

HEALTH AND SANITATION IN SIERRA LEONE

Mr. H. E. Leslie Probyn, C.M.G., the Governor of Sierra Leone, in his annual report to the Colonial Office, recalls the fact that the West Coast obtained the sobriquet of "The White Man's Grave" early in the nineteenth century, and says that as Sierra Leone was then and for many years after the settlement it became, and still is, specially identified with the phrase. He urges that modern statistics prove the words to be now a libel, and pleads that the graveyard metaphor should itself be buried. According to the Blue-Book for 1908 the number of deaths caused by malarial fevers has been greatly reduced, and this is attributed to the increasing importance which is being attached to anti-malarial sanitation. Owing to the good water-supply which Freetown enjoys, diseases of the digestive system also continue to decrease in number. On the other hand, owing to the susceptibility of the Sierra Leonean to chills the rate of deaths resulting from diseases of the respiratory organs continues a high one. The infantile death-rate in the last five years has ranged from 461 to 351 per 1000. This high rate is due to several causes, malaria being one; another is ignorance as to proper feeding, care, and cleanliness of the children in the first few months of their existence, and the unscientific midwifery of the middle and lower classes is also a factor. With a view to arriving at some estimate of the prevalence of ankylostomiasis in Freetown experiments were carried out at the clinical laboratory of the Colonial Hospital. Of 100 specimens of faces examined 54 contained ankylostome ova, but in no instance was there observed any symptom directly attributable to the infection, or any skin eruptions such as have been described as due to ankylostomissis. Mr. Probyn writes enthusiastically about the good effects which have followed the carrying out of the hill-station scheme under the provisions of the loan ordinance of 1903 at a cost of £86,000. He remarks: The hill station is a township designed exclusively for Europeans and built at an altitude of 800 feet near the western end of the half circle of high hills overlooking Freetown and the harbour; the mountain railway gives easy access to the station,

while a pure water-supply, beautiful scenery, and provision for tennis and other games enable the residents to live under pleasant and healthy conditions. The hill station was planned as a fortress against the mosquito and was the first important tangible sign that war was to be waged against malaria. It is not and never was intended to be an experiment in the direction of ascertaining whether complete immunity from malaria can be attained by isolation of Europeans from the native community, as it is obvious that Europeans serving on the West Coast cannot live the absolutely isolated life requisite if the principle of segregation is intended to be strictly carried out in a scientific manner. It is the fact, however, that the health of officers at the hill station has been better than that of officers residing in Freetown or on the Protectorate, and this condition is doubtless in part due to the lessened risk of infection which is the result of the limited compliance with the principle of segregation. The European officials in Freetown and at the hill station are less than 100 in number, and recognising the danger of generalising from a few the medical department has adopted a system by which the relative health in different years and different localities is expressed by the days on which during a year the officials resident at a particular place have been on the sick list. According to this test it is found that the antiquinine period, of which the year 1898 may be taken as a type, is the least healthy, and that the improvement shown 10 years later, notable in all cases, is greatest in the case of residents at the hill station, less marked with the firstgrade officers dwelling in Freetown, and smallest in the case of the artisans, fitters, and drivers employed on the railway, who live at Clines Town in the eastern ward of the city.

Antiquinine Period-type, 1898.

Days on sick list owing

to climatic diseases. 7.85		•••••	to non-cl	imatic disc 2-9	esses.
Anti-1	nosquito 1	Period-t	уре, 1908.		
Days on sick list owing to climatic diseases.			Days on sick list owing to non-climatic diseases.		
Hill station	0.3		•••••	0.6	
Freetown and Clin-	~ ~ ~ ~			2.0	

Hill station	iseases.	diseases.		
	 0.3	 	0.6	
Freetown and Town	 2.74	 	2.0	
Freetown (first officers)		 	0·25 3·0	

A DISCLAIMER.

To the Editor of THE LANCET.

SIR,—The altogether unwarrantable and offensive use of my name in connexion with a recent advertisement of Page Woodcock's Pills is yet another instance of the unscrupulous manner in which the names of medical men are exploited against their will, and which the profession seems utterly powerless to prevent until legislation steps in to its aid. I need hardly say that the firm in question has received instructions for the immediate withdrawal of the advertisement.

I am, Sir, yours faithfully,

G. NORMAN MEACHEN. Devonshire-street, W., Oct. 13th, 1909.

THE ADMINISTRATION OF SANTONIN.

In a recent number of the Journal de Médecine Interne M. Paul Pélissier makes a useful contribution to practical therapeutics in giving precise directions for the administration of santonin. He shows that this drug may be more toxic towards man than towards ascarides, and cites a case in which a fatal result followed the administration of little more than one-third of a grain to a child, aged six months. He insists that santonin should be given under special conditions and in a suitable vehicle, so that it may attack the parasite without being absorbed by the patient. He recommends as preparatory treatment the administration at bed-time and again in the morning, on an empty stomach, of a draught prepared as follows: Take one clove of garlic, cut small, and a glass of milk, and heat for ten minutes over a slow fire, afterwards straining and sweetening to taste. By cooking the garlic in this way its acrid properties are removed and the resulting draught is rendered agreeable to the palate. These draughts are said to render the parasites more vulnerable by modifying their conditions of life, and to introduce into the stomach an essential oil, which excites the acid secretion and diminishes the capacity of the stomach for the absorption of the anthelmintic. The santonin is then administered in the form of an emulsion, prepared in the following way: Dissolve the santonin in almond oil, 5 grammes, and shake with syrup of gum, 30 grammes, and orange-flower water, 60 cubic centimetres. The dose of sautonin is calculated on the basis of 0.01 gramme for each year of age up to a maximum dose of 0.3 gramme. The draught is given in three portions, at intervals of five minutes, the first being given a few minutes after the morning dose previously referred to. During the forenoon lemonade is freely given, and two hours after the administra-tion of the santonin the patient is purged with calomel. M. Pélissier states that, when dissolved in oil in this manner, santonin passes through the stomach without being altered by the gastric juices and exerts its specific action salely upon the parasites. It is essential that the santonin should be completely dissolved in the almond oil.

A FACE PROTECTOR FOR TRACHEOTOMY.

MUCH care has been devised in the perfection of appliances to ensure surgical patients against septic contamination during operation, but every now and then it is tragically brought home to us that the surgeon himself has remained undefended against risks even more serious. This is notably the case during the performance of trache-otomy for diphtheria, which has on



several occasions resulted in the infection of the surgeon with the ex-pectorated matter and the consequent loss of his evesight or even his life and people suffering from other infective conditions have been known to give their disease to their nurses o_{Γ} medical attendants by spitting in their faces. Medical men in the past have been content to take the risk of such occurrences or to safeguard themselves by wearing a gauze mask, but in certain instances a further protection is undoubtedly desirable, and this has been recently supplied by Messrs. Garrould in the form of a light aluminium mask with a glass window which can easily be removed for sterilisation. The apparatus, which

is known as the zymotic face protector, is affixed to the head by a pad and forehead strap, as if it were a laryngoscope, and it affords an efficient protection to eyes, nose, and mouth. We may add that it would be well for the surgeon not to assume the mask until the patient is anæsthetised, as its appearance would be somewhat formidable to a sensitive child. It can be obtained from Messrs. Garrould's, hospital contractors, 150, Edgware-road, London, W.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Beek.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

TUESDAY.

Pathological Section (Hon. Secretaries—Leonard S. Dudgeon, C. Bolton, M.D.): at 8.30 p.m.

Presidential Address:

Dr. F. W. Mott, F.R.S.: The Present Position of the Neurone Dectrine in Relation to Neuro-pathology.

Mr. S. G. Shattock: Rhabdo Myoma of Urinary Bladder.
Mr. J. Burton Cleland: A Note on Eosinophile Cells in the Exudate from Tick-bites on a Horse.

DERMATOLOGICAL SECTION (Hon. Secretaries—E. G. Graham Little, H. G. Adamson): at 5 P.M. Dr. J. M. H. MacLeod: "Cystic Rodent Ulcer" treated by Radium.

Dr. H. G. Adamson: (1) Small Follicular Syphilide; (2) Multiple Scars simulating Leucodermia Syphilitica. And other Cases.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—E. I. Spriggs, M.D., J. P. Lockhart Mummery, F.R.C.S., J. T. Leon, M.D.): at 4.30 P.M.

Dr. A. Manuel: Two Cases of Anterior Poliomyelitis involving the Four Limbs. Dr. A. P. Beddard: A Case of Macroglossia.

And other case

Specimens:

Dr. F. W. Higgs: Lympho-sarcomatosis. Dr. A. C. D. Firth and Dr. E. I. Spriggs: Pulmonary Stenosis.

Dr. A. Dingwall-Fordyce: Notes on the Pathology of some Liver Conditions in Childhood, with a Report of Three Cases. Dr. J. Walter Carr: Case of Pneumococcal Infection in an Infant simulating Generalised Tuberculosis.

EPIDEMIOLOGICAL SECTION (Hon. Secretaries—W. H. Hamer, G. S. Buchanan): at 8.30 p.m.

Presidential Address :

Dr. James Niven: The Relation of Poverty to Disease.

N.B.—Fellows of the Society are entitled to attend and to speak at all Meetings.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM, 11, Chandos-street, Cavendish-square, W.

THURSDAY.—8 P.M., Card Specimens by Mr. B. Harman, Mr. R. Batten, Mr. B. James, Mr. J. H. Fisher, &c. 8.30 P.M., The President (Dr. G. A. Berry): Introductory Address. Mr. P. Smith: (1) A Note on the Making of Pedigree Charts; (2) A Pedigree of Congenital Discoid Cataract.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

Monday.-5 P.M., Prof. S. G. Shattock: Osteoma. Demonstration.)

FRIDAY.—5 P.M., Prof. A. Keith: Specimens illustrating Various Forms of Congenital and Acquired Diverticula of the Ali-mentary Canal. (Museum Demonstration.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 2,

IBDICAL GRADUATES' COLLEGE AND POLYCLINIC, 2,
 Chenies-street, W.C.
 Monday.—4 P.M., Dr. J. H. Sequeira: Clinique (Skin). 5.15 P.M.,
 Lecture:—Dr. J. Collier: Functional Paralysis.
 TUESDAY.—4 P.M., Dr. H. Campbell: Clinique (Medical).
 Lecture:—Dr. T. Eden: Malignant Ovarian Tumours.
 WEDNESDAY.—4 P.M., Mr. J. Cantlie: Clinique (Surgical). 5.15 P.M.,
 Lecture:—Dr. W. H. B. Stoddart: The Prognosis of Functional Nervous Disorders.
 THURSDAY.—4 P.M., Sir Jonathan Hutchinson: Clinique (Surgical). 5.15 P.M.,
 Lecture:—Dr. G. Carpenter: Heart Disease in Children.

5.15 P.M. Children.

FRIDAY.-4 P.M., Mr. S. Spicer: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-

Monday.—10 a.m., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 p.M., Medical and Surgical Clinics. X Rays.
Mr. Dunn: Diseases of the Eyes. 2.30 p.M., Operations. 5 p.M.,
Lecture:—Mr. Pardoe: Undue Mobility of the Kidneys and its

Lecture:—Mr. Pardoe: Undue Mobility of the Kidneys and its Consequences.

TUFSDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Saunders: Clinical Examination of Severe Cases of Gastric Disorder (continued)—Examination of Gastric Contents.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. B. Harman: Diseases of the Kyes. 2.30 P.M., Operations. Dr. D. Robinson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Medicine.

THURDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 12 noon. Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Lecture:—Dr. G. Stewart: Injuries to Nerves.

FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. Medical Registrar: Demonstration of Cases in the Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Abraham: Cases of Skin Diseases.

Skin Diseases

SAID Diseases.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Mr. B. Harman: Diseases of the Eyes. Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 p.m., Lecture:—Dr. G. Stewart: Practical Medicine. 2 p.m., Medical and Surgical Clinics. X Rays. 2.30 p.m., Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

NDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

Monday.—2 P.M., Operations. 2.15 P.M., Sir Dyce Duckworth Medicine. 3.15 P.M., Mr. Turner: Surgery. 4 P.M., Mr. R. Lake: Bar and Throat. Out-patient Demonstrations:—10 a.M., Surgical and Medical. 12 noon. Ear and Throat.

Tuesday.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 a.M., Surgical and Medical. 12 noon, Skin. 3.15 P.M., Special Lecture:—Mr. Carless: Stone in the Kidney.

Weddeline. 3.35 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 a.M., Surgical and Medical. 11 a.M., Byc. Thursday.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.35 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 a.M., Surgical and Medical. 11 a.M., Byc. Thursday.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 a.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 a.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Special Lecture:—Dr. R. Bradford: Jaundice.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 a.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Special Lecture:—Dr. R. Bradford: Jaundice.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

Wales's General Hospital, Tottenham, N.

Monday.—Clinics:—10 a.m., Surgical Out-patient (Mr. H. Evans),
2.30 p.m., Medical Out-patient (Dr. T. R. Whipham); Neec.
Throat, and Ear (Mr. H. W. Carson). 4.30 p.m., Medical
In-patient (Dr. A. J. Whiting).

TUESDAY.—Clinic: 10 a.m., Medical Out-patient (Dr. A. G. Auld),
2.30 p.m., Operations (Mr. H. W. Carson). Clinics:—Gynacological (Dr. A. E. Giles). Surgical (Mr. W. Edmunds); 4.30 p.m.,
Demonstration:—Dr. G. P. Chappel: Selected Medical Cases.
WEDNESDAY.—Clinics:—2.30 p.m., Medical Out-patient (Dr. T. E.
Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks).
3 p.m., X Rays (Dr. H. Pirle).

THURSDAY.—2.30 p.m., Gynacological Operations (Dr. A. E. Giles).
Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical
Out patient (Mr. H. W. Carson). 3 p.m., Medical In-patient
(Dr. G. P. Chappel).

FRIDAY.—10 a.m., Clinic:—Surgical Out-patient (Mr. H. Evans).
2.30 p.m., Operations (Mr. W. Edmunds). Clinics:—Medical
Out-patient (Dr. A. G. Auld); Eye (Mr. R. P. Brooks).; Skin
(Dr. G. N. Meachen). 3 p.m., Medical In-patient (Dr. R. M.
Leslie). 4.30 p.m., Lecture:—Mr. R. P. Brooks: Squint.

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THURBDAY.—6 P.M., Chesterfield Lecture:—Bullous and Vesicular Bruptions (continued)—V., Herpes; VI., Zoster; VII., Der-matitis Herpetiformis.

OPERATIONS.

METROPOLITAN HOSPITALS.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Modeleex (1.30 P.M.), St. Mestminster (2 P.M.), Chiesea (2 P.M.), Chiesea (2 P.M.), Chiesea (2 P.M.), Chiesea (2 P.M.), Chiesea (2 P.M.), Chiesea (2 P.M.), Chiesea (2 P.M.), Chiesea (2 P.M.), Chiesea (2 P.M.), Chiesea (2 P.M.), Chiesea (2 P.M.), Chiesea (2 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (3 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2 30 P.M.), London (2 P.M.), Middleeex (1.30 P.M.), West London (3.30 P.M.), Chiesea (3.30 P.M.), Chiesea (2 P.M.), St. Mark's (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2 30 P.M.), London Throat (9.30 A.M.), Soho-guare (2 P.M.), Children, Gt. Ormond-street (9.30 A.M.), Soho-guare (2 P.M.), Children, Gt. P.M.), Childre

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 14th, 1909.

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An Address

RECENT ADVANCES IN OUR KNOWLEDGE OF SLEEPING SICKNESS.

Delivered before the Society of Tropical Medicine und Hygiene on Oct. 15th, 1909,

BY ARTHUR G. BAGSHAWE, M.B., B.C., D.P.H. CANTAB.,

DIRECTOR OF THE SLEEPING SICENESS BUREAU, ROYAL SOCIETY.

GENTLEMEN,-In the address I have the honour of delivering to-night I have taken as recent work that which has been published in the last 12 months. The advances which I have endeavoured to chronicle are such as have an immediate bearing on the prevention or cure of sleeping sickness. Sleeping suckness I have considered as meaning infection in all its stages by Trypanosoma gambiense. I have gone beyond my text in suggesting openings for investigation, for it is obvious that such an address as this is of value, if at all, in so far as it indicates not only the ground which has been won, but also the points at which assaults promise

The course of human trypanosomiasis has been commonly divided into stages according to the symptoms. A convenient classification is that of the members of the French Sleeping Sickness Commission, G. Martin, Lebœuf, and Roubaud, who have lately published in a large volume the results of two years' work in French Congo. They distinguished oas en bon état, persons who have no symptoms whatever of trypanosome infection; cas suspects, persons who have symptoms which lead to further investigation; and vas cliniques, cases which can be diagnosed from symptoms alone. A more accurate division which they make when it is possible depends on the result of spinal puncture. If evidence of invasion of the subarachnoid space by trypanosomes is thus obtained the patient is at the second or third stage; if not, he is at the first. By this means some of the patients with no symptoms are shown to be actually at the second stage. In the course of this address when I speak of patients in the first stage I mean those whose cerebro-spinal fluid is normal, or believed to be normal.

TRANSMISSION.

Glossina palpalis.—Since the year 1903 we have known that Glossina palpatis is the transmitter of human trypanosomiasis, but it is only recently that we have acquired accurate knowledge of the conditions of transmission. As is generally known, Kleine, in his paper published in March of this year, showed that after the fly ingests the trypanosome (in this case brucei) an interval of 18 or 20 days occurs, during which it is non-infective, but that after that period it is able to infect susceptible animals. His observations were soon confirmed by Bruce for T. gambiense, and there is every probability that some flies remain infective for the rest of their lives. Infection by interrupted feeding or with an interval of a few minutes is, of course possible, but it seems to me that it must be an unusual occurrence, for trypanosomes are as a rule rare in the circulation, and the quantity of blood contained in the proboscis-tube is so minute that the chance of any trypanosomes being contained therein is small. Bruce, however, still believes that the

mechanical method is by far the commoner.

Kleine has published figures of what must be regarded as T. gambiense in the alimentary tract of flies reared from the pupa, fed at first on animals infected with that trypanosome and afterwards on healthy animals. The forms show a marked differentiation. He has found parasites in the salivary glands as well, but regards their presence there as accidental rather than as bringing tsetse into line with anopheles. He has obtained no evidence of hereditary or

germinal infection.

Sir David Bruce and his colleagues have made a very interesting observation: they introduced under the skin of a monkey a tiny drop of fluid from the gut of a fly fed 75 days previously on an animal infected with T. gambiense there was a palpalis area at hand or within a few miles, and No. 4495.

and afterwards on healthy animals. The fluid was swarming with trypanosomes. Eight days later the monkey became infected. We know, therefore, that the trypanosomes ingested by the fly undergo some kind of development, but whether a sexual process occurs or there is merely such a multiplication as is seen in cultures, we are at present ignorant. If it is found that the trypanosomes are not able at all stages to infect the fly as Todd suggests, the hypothesis that a sexual stage occurs would receive indirect

support.

Kleine found that of 410 flies which had fed on animals infected with T. gambiense 22 became infected, that is, 5 per cent. Since, however, about half of his flies died early in captivity he thought the percentage might be doubled. Whether 10 represents the highest percentage that one would find in nature is, of course, uncertain. Stuhlmann, whose work was done with Trypanosoma brucci and Glossina fusca, infected about the same percentage. Kleine's flies had drawn their infection from monkeys, which were possibly at different stages of the disease and perhaps not equally infective. Experiments to ascertain if Gelssina morsitans or other species of Glossina is able to convey T. gambiense after a similar interval will doubtless be undertaken. Should, however, these be successful there is no reason to anticipate an extension of the disease to palpalis-free regions. All the observations made hitherto support the thesis that sleeping sickness does not become endemic except in palpalis areas.

There are two other possible means of communicating the disease which have supporters—sexual coitus and blood-

sucking insects other than tsetse-flies.

Sexual coitus.—The former hypothesis was brought forward by Koch and Kudicke to explain the occurrence of the disease in women who lived in a palpalis-free area and said that they had never left it. Lately, Kudicke has stated that he has had 44 of such female patients under treatment. Hodges, in an unpublished Memorandum, suggested an explanation of such cases. He wrote: "When the epidemic first swept through the lake-shore district the men, whose employments naturally carried them into the greatest danger, usually suffered first. As the men weakened, their occupations, such as canoeing, were in part taken up by the women, who then ran greater risks and more often contracted the disease, while many of their husbands by this time had either died from it or showed obvious symptoms of its presence." Kudicke, by introducing blood from an infected monkey into the vagina of an uninfected monkey, with careful precautions to avoid injury, brought about an infection. This observation, if confirmed, would suggest the possibility, in the case of a wound or ruptured blood-vessel of the penis, of such an occurrence in man. Here may be cited an observation of Manteufel. He found that if he put blood containing trypanosomes on a patch of unshaven sound skin the size of a florin, allowed the blood to dry and covered the patch with collodion, in the greater number of animals infection followed. He suggested as a reason why trypanosomes do not usually pass through the skin or mucous membrane the presence of some antibody. There are no records in favour of Koch's hypothesis from other parts of Africa.

Mosquitoes, &c.—The members of the Sleeping Sickness Commission in French Congo bring forward evidence in favour of the transmission of sleeping sickness by insects other than Glossina, especially mosquitoes of the genera Mansonia and Stegomyia. This view, expressed in March of last year, is repeated and emphasised in their complete report. They regard *G. palpalis* as the principal agent of infection, but think that mosquitoes, and probably other biting insects, are "important auxiliaries," conveying infection in each hut from person to person during the night. They say that in regions where the natives nurse their sick in their own houses the disease spreads with much greater rapidity than in those where they drive them away. They give instances of one member of a family after another becoming infected, and quote cases in which a native was saved from infection, in their belief, by the use of a mosquito net. They found sleeping sickness extremely prevalent in marshy districts where Mansonia abounded, and attribute to this method of infection in some instances the annihilation of whole villages.

Examination of the data shows that in nearly all the cases

in some instances where the disease spread with great rapidity it is stated that it was of recent introduction and that the natives were badly nourished, either of which would be efficient cause of a severe epidemic such as lately raged in Busoga. It is easy to understand why the disease spreads more rapidly when the sick man remains in the village, for if he is driven away he is no longer preyed on by palpalis, or at least not by the same flies which bite his fellow villagers, and moreover his early death removes the source of infection altogether.

Granted the occurrence of this method of transmission, it is quite impossible to form any conclusion as to its relative importance if the epidemics studied are close to palpalis areas. Under these circumstances any such attempt is mere conjecture. Attention should be concentrated on sporadic cases, patients living out of reach of any species of tsetse, and watch must be kept for signs of the disease in inmates of the same hut. I cannot but think that the French observers ascribe to these "auxiliaries" a more important part than they really play. When we consider that imported cases of sleeping sickness never caused epidemics in the New World; that the disease, wherever it is, endemic or epidemic, hugs the shores of palpatis-haunted lakes and rivers; that in Uganda, inland from the Victoria Nyanza, out of reach of tsetse flies, no instance of infection from a sporadic case has come to light, we must, I think, demand more strict evidence than the French have given us. There are, however, a few cases recorded where the intervention of palpalis, or indeed of any species of Glossina, may, for one reason or another, be excluded, and one must admit that in these rare instances the intermediary was some other insect. 1

I shall not refer here to the experiments on transmission of *T. brucci* carried out by various investigators with mosquitoes and *Stomoxys*. They have, of course, proved the possibility of such an occurrence.

DIAGNOSIS.

The diagnosis cannot, of course, be considered as established unless the trypanosome is found in one or other of the body fluids. As to the course which is best adapted for its discovery there has been some difference of opinion. The members of the French Commission have recently published statistics based on examination of 459 infected persons, and since these examinations have evidently been conducted with much care and the number of cases is large the figures deserve careful study. One of their tables is appended:—

Table from "La Maladie du Sommeil au Congo Français."
(Martin, Lebouf, Roubaud. Paris. 1909.)

_	Examen direct du sang.	Centrifuga- tion du sang.	Sang total.	* Diagnostic ganglion- naire complét.	Ponction lomb- aire.
Nombre d'exa- mens.	417	100	_	400	167
Resultats positifs.	152	92	-	3 53	120
Pourcentages.	36.45	92	96-82	88:25	71.85

^{*} By this expression the authors mean that a gland of each group (cervical, axillary, inguinal, &c.) was, if necessary, punctured.

Blood.—The high percentage of success obtained by direct examination of the blood will be at once noted. The films were wet; 7/8 inch cover-slips were used, a mechanical stage, and a magnification of 276 diameters. Ten minutes were allowed for the scrutiny, and a second slide was, as a rule, not examined. The direct blood method was that by which trypanosomes were found in 9 out of 12 Europeans in the Congo who were recognised to be infected. It is worth noting that in some cases where in a film of blood from one hand no trypanosomes were found, in a film from the other they were detected. By centrifugation of blood in 12 cases at the first stage trypanosomes were found in every one.

Glands.—The glands of 400 infected persons were examined in turn. The parasites were found most often in the cervical glands, 73 per cent.; next in the submaxillary, 69 per

cent.; and in the axillary, epitrochlear, and inguinal, about 50 per cent. To determine the relative frequency with which trypanosomes were contained in the different groups a gland of each was punctured in 78 patients; the cervical group headed the list, but was run very close by the inguinal-71 per cent. and 66 per cent. Seeing that in 11 per cent. of infected persons trypanosomes could not be found in the glands, the percentage of puncturable glands in the patients was studied; in the case of inguinal it was 89, in that of the cervical and submaxillary 87. The authors write: "In our 459 cases of infection we have been unable to do gland puncture 59 times—i.e., in 12 · 8 per cent. either because the glands were too small or because they did not exist." This statement is of great importance. means, of course, that if one relies on gland puncture alone for a diagnosis of human trypanosomiasis at least 12 cases in 100 will be missed because puncture cannot be done. Some of these 12 will have other signs of the disease; others will not. The figures of which the tables are made up are taken from patients examined under the best conditions by all known methods. Let us take another set of figures. Lebœuf, who travelled through part of French Congo studying the disease, made use of gland puncture and direct blood examination only. He examined 552 persons, and trypanosomes were found in the glands of 80. Each group of glands was examined, and 264 punctures were made. In 11 cases in which the glands were punctureable, but he was unable to find trypanosomes in them, they were found in the blood, i.e., in 12 per cent. of the persons recognised as infected. Of these 11, 6 belonged to the bon état class—i.e., they were in apparent health. It appears, then, that if gland puncture alone is employed, even though it is carried out with the greatest completeness and care, 12 out of 100 patients will be passed over, and that, even if clinical signs are watched for as well, between 6 and 7 per cent. will escape detection; and this when the examination is made by an expert. I have gone into this part of the subject at some length because there seems to be a general impression that gland enlargement and gland puncture are by themselves an efficient sign and means of diagnosis of sleeping sickness; clearly, it is not the case. Examination of the blood must never be neglected, and it is especially important, for by its aid only can be discovered the very early, and therefore curable, cases. Those whose business it is to weed out the infected natives in a community should study these figures.

Cerebro-spinal fluid.—The results obtained by the French Commission with lumbar puncture in supposed early cases are remarkable; they examined the cerebro-spinal fluid of 19 persons in apparent health with no symptoms whatever, and in five instances they found trypanosomes. They add that no case in which a trace of blood was found in the fluid is included in their statistics. This shows that until one has examined the cerebro-spinal fluid it is impossible to be sure that a patient is at the first stage.

Broden and Rothain have made a special study of the cerebro-spinal fluid in trypanosomiasis; they regard the presence or absence of trypanosomes as of quite secondary importance, and for this reason collect only 5 cubic centimetres of the fluid. They count the white cells and study their character. A mere increase of small lymphocytes (5 per cubic millimetre being taken as normal) is found in early cases, and Broden and Rodhain think that this increase can be detected before it is possible to find trypanosomes. In later cases there are found also muriform cells and, later still, myelocytes. A histological study is much needed of the central nervous symptoms of persons who have died at an early period of their infection. It may be that changes in the membranes would be detected in quite early cases.

Auto-agglutination of the red blood corpuscles.—Here again Lebœuf, of the French Commission, has added to our knowledge. Among his 552 cases, in 91 of whom trypanosomes were found in the blood or glands, while all of these showed the phenomenon in a marked degree, in 48 others it was present also. Some were almost certainly infected, as could be judged from the symptoms; if lumbar puncture had been done and the blood centrifuged doubtless trypanosomes would have been found in them. Were all the 48 infected? Lebeuf does not commit himself to an opinion. It seems doubtful, however, whether well-marked auto-agglutination ever occurs in African natives apart from an infection by T. gambiense. It is said, however, to occur in certain forms

¹ The cases recorded by the French Commission should be studied in the fine work which they have lately published.

of icterus due to hæmolysis (L. Martin and Darré). More attention should be paid to the subject, for auto-agglutination can be detected before recourse is had to the microscope, and, were it shown to be trustworthy, would be a simple and therefore valuable means of diagnosis. In any case we have in auto-agglutination an added reason for the examination of fresh blood films.

Test animals.—Till recently the test animals used for sleeping sickness were not very reliable. Thiroux and D'Anfreville have found that a species of Cerooptheous (C. ruber or patas), widely spread in tropical Africa, is very susceptible to infection by T. gambiense. Monkeys inoculated from patients showed infection in from 11 to 18 days. They point out that in the case of inoculation of a monkey, one can use many times the volume of fluid which could be submitted to centrifugation, an obvious advantage. This method has its uses, but, in my opinion, for the original diagnosis should be rarely necessary. Culture on artificial media and complement fixation are diagnostic methods of the future.

Gland palpation.—When one is confronted with the task of estimating the percentage of infection in a community and of weeding out the trypanosome carriers, it is clearly impossible to employ microscopical methods in every case, and it is usual to rely on gland palpation for the separation of the natives who are to be examined more fully. It is admitted that this is not a perfect method. The difficulty is not only that infected persons at an early stage are without enlarged glands, but also that there are other conditions which cause adenitis, and though the glands due to trypano-somiasis have a peculiar character which can be recognised by a skilled observer when it is typically present, this character may be masked. The French Commission found that whereas under treatment some glands diminished in size, others did not, and they concluded that the enlargement of these, though they often contained trypanosomes, was due to other causes. There are, moreover, reasons for believing that in some cases the swelling of the glands is never great. We have no data which would indicate to us the interval between the first appearance of trypanosomes in the blood and the time when the glands become large enough to puncture; it probably varies. Heckenroth mentions the case of a boy who had slight suborbital cedema, and in whose blood trypanosomes were found. Not till a year later did any glands become puncturable. The diminution in volume that occurs at a puncturable. later stage, whether the result of treatment or not, is well known and must always be borne in mind. The fact that a single injection of an organic arsenical, such as atoxyl, may cause such a retrogression of glands that they cease in a few weeks to be puncturable, must always be present to workers in Africa, for there are now many such persons abroad. As a means of separation of possibly infected from probably uninfected natives, gland palpation will always be of use; but I doubt the value of statistics of gland enlargement when such a factor as the frequency of other conditions causing adenitis is unknown. If some observer, whose lot it is to examine a large number of natives with a view to check the movements of the infected, were to palpate the glands and examine a blood-film (macroscopically) in every instance, controlling the results by the various microscopical methods, and were to publish his figures, he would materially advance our knowledge. Recent work confirms the observations of Dutton and Todd that the larger the glands the more likely are trypanosomes to be found in them.

Heckenroth, who examined many cases of trypanosomiasis in French Congo, considers ædema at least as valuable an early sign as gland enlargement.

The French observers bring out another point of interest. Lebœuf on seven occasions found a Miorofilaria perstans in a punctured gland. Three of these glands contained trypanosomes also; in the other four patients there was marked glandular enlargement of the cervical group in three cases. No trace of blood accompanied the embryos. It is possible then that the presence of these blood worms may account for some cases of pronounced gland enlargement.

SYMPTOMS.

An excellent clinical study of the disease is published in the French report. Naturally the recent advances in this part of the subject are not numerous.

The French observers have published papers on the nervous manifestations of sleeping sickness—acute meningitis occurring in the second, rarely in the first, stage of the disease, this was a case treated at the first stage. And Nattan-Larrier

perhaps before a diagnosis has been made, and the socalled cerebral and medullary forms. The cerebral forms they classify as diffused and circumscribed. The former are manifested by mental and meningeal symptoms, subacute in character. There is loss of the intellectual faculties. In the circumscribed forms there is irritation of the cortex leading to convulsions or paralysis. Both forms are incurable. The medullary or spinal forms are characterised by paraplegia, with some loss of sensation and bladder troubles. These symptoms progress slowly and respond well to treatment. Hodges, in a report about to be published, remarks on the increase of cerebral symptoms in Uganda. "Paralysis, paresis, and epileptiform convulsions," he writes, "which among untreated cases occurred in a small percentage, are now commonly met with, and are often the precursors of sudden death, which itself was very exceptional before the use of organic arsenic. Sudden or rapid death, in fact, generally preceded by cerebral symptoms, would appear now to be almost the rule among such cases as have received full courses of organic arsenic, while the prolonged lethargic stage which almost invariably marked the end of untreated cases is either scarcely noticeable or absent." I am unable to suggest any reason for I am unable to suggest any reason for

Such symptoms as deep hyperesthesia (Kérandel's sign) and iritis or cyclitis do not come within my period.

TREATMENT.

Many papers on this branch of my subject have been published in the last 12 months. The number of new drugs employed has not been large; it includes arsacetin (the acetyl derivative of arsanilic acid), arsenophenylglycin, and p. aminophenylstibinic acid, which corresponds to arsanilic acid, with antimony substituted for arsenic in the molecule-Experience has been gained in the use of the older drags, such as atoxyl or soamin, with or without mercury, orpiment, tartar emetic, &c.

Arsanilate (atomyl or soamin).—It is certain that these substances are best administered by hypodermic injection. Broden and Rodhain, who gave atomyl by the mouth to 79 patients, concluded that the method was suited only for persons with a normal cerebro-spinal fluid, and that in any case if improvement was not rapid injections should be given. From the evidence we have it seems that nothing is gained by injection of the drug into the spinal canal, and I believe I am right in saying that this is not an established procedure in any disease.

In the great majority of cases arsanilate causes the parasites to disappear promptly from the blood and glands and not to reappear there while treatment lasts; there are however, exceptions. L. Martin and Darré had two European patients in whom the trypanosomes were insensitive to atoxyl; during its administration parasites were to be found in their blood and circinate erythema appeared; their 18 other patients reacted well to the drug. Ayres Kopke reports a case, that of a Portuguese, in whose blood trypanosomes persisted in spite of injections of atoxyl and later arsacetin. I know of a fourth case in a European (unpublished); another is mentioned by Ehrlich. Here, then, are five European cases in which trypanosomes persisted in the blood in spite of atoxyl injections, and the comparative lack of record of such an occurrence in natives is probably due to the fact that they are not so closely studied. What is the nature of this insensitiveness of the parasites? Is the resistance specific? Ehrlich and Kopke had no doubt that it was in their cases. Fortunately, such resistance is not common, and there is no evidence that a chemo-resistant strain keeps its property when transferred by an insect to a fresh individual. It is probable that serum-resistant strains—that is, strains resistant to antibodies—are of much greater importance in the treatment of man than chemo-resistant strains. We are on the threshold of our knowledge of serum resistance.

Cases of reappearance of parasites in the glands are rare. Have any cures resulted from the use of atoxyl alone? It is still uncertain. Broden and Rodhain are convinced that atoxyl can cure a large number of patients at the first stage. The members of the French Commission express themselves in the same sense. Two things must, however, be borne in mind: 1. The interval during which a patient who afterwards relapses may remain well is not yet known; G. Martin and Lebœuf record a relapse after 15 months' perfect health; trypanosomes were then found in the cerebro-spinal fluid; this was a case treated at the first stage. And Nattan-Larrier

reports the cases of three Europeans who were not treated at all: one remained well for 17 months, the second for two years, and the third for three years, after which they relapsed. It is not stated whether they were examined for trypanosomes during that period. 2. We must remember that the cases of apparent cure which have been longest under observation were treated before the atoxvl Hodges, in the report alluded to above, writes: "The number of early cases which have maintained their improvement has steadily decreased, and the number of cases likely to be permanently cured is now inconsiderable." If there are any persons who have made a recovery I would be inclined to attribute the happy event to their power of resistance rather than to the doses of atoxyl which may have been administered.

The arsanilates, and especially atoxyl, are not without their dangers; there are many recorded cases of blindness following the use of atoxyl. Much attention has lately been paid to this subject, but it is not yet clear whether the lesion is central or in the retina. The first symptom is contraction of the fields of vision; the fields, therefore, should be tested from time to time in all patients who are taking arsanilates. It is possible that persons infected with Trypanosoma gambiense are predisposed to such lesions; they have not been noticed in early cases. In Uganda all the victims seem to have been at a fairly advanced stage, and Broden and Rodhain found that of their patients who became blind all had either typical symptoms of sleeping sickness or an altered cerebro-spinal fluid; consequently they recommend a smaller dose for patients at the later stage than for the earlier cases. It seems that loss of vision is less frequent, if it occurs at all, after the use of soamin, which has, of course, a chemical formula identical with atoxyl.

How long should a course of arsanilate last? This is a difficult question to answer. Broden and Rodhain are doubtful if it is of any use to resume or continue its employment after a relapse. It must be remembered that to detect a relapse it is not sufficient to examine the blood; the cerebro-spinal fluid must be examined from time to time. There are reasons for believing that, apart from the possible development of resistance by the parasites, the prolongation of a course beyond a certain limit, not at present defined, leads to supersensitiveness on the part of the patient. In Uganda, at any rate, the administration of organic arsenicals for several months in succession has been abandoned.

When the arsanilates came into use for sleeping sickness it was hoped that they would act by killing off the trypanosomes in the body—that is to say, as sterilising agents—as they appear to do in experiments on small animals. This hope has been disappointed, probably because we are unable to give the drug in such doses as will cause the requisite concentration of the trypanocidal substance. Professor Benjamin Moore considers that the size of man, as in the case of large animals, is against his cure; he shows that the dose which can be given depends on the area of body surface, and that therefore small animals have an advantage. He believes also that the dosage depends on the area of cells lining the intestine, for these take up the arsanilate, and if the drug is present in too great concentration they are killed.

Antimony.—Tartar emetic or the corresponding sodium salt is now given intravenously to avoid the pain and reaction caused by injection into the tissues. This treatment alone is not effective for any length of time, possibly because of the rapid elimination of the drug. G. Martin and Lebœuf and Ringenbach find that though it drives trypanosomes promptly from the blood they may be present in the cerebro-spinal fluid after many injections. Injections of finely divided metallic antimony in an oily emulsion, the so-called antimony cream, are so painful that they drive away the patient as well as the trypanosomes.

There is now, I think, a consensus of opinion that two or more drugs should be employed in combination. For this course there are three reasons: 1. Experiments on animals have clearly demonstrated the advantage. 2. One can give a smaller, and therefore less dangerous, dose of each drug than would otherwise be the case. 3. The researches of Ehrlich and others show that substances of different chemical groups combine with different parts of the protozoal cell. It is interesting to note that a drug which by itself has no action may become of value when it is associated with a

powerful trypanocide; examples are mercury, and perhaps pieric acid.

Arsanilate + mercury.—Many clinicians have tried this combination. Hodges and Broden, both of whom have had much experience, consider that it has no advantage over arsanilate alone. Van Someren, who injects soamin and perchloride of mercury simultaneously, thinks that the patients so treated do rather better than those who get soamin only. No one, however, speaks very favourably of the combination.

Areanitate + orpiment is now being largely given. We are not yet able to form an idea of the value of this combination. The use of an inorganic arsenical has two recommendations: (1) some of the early cases which have made an apparent recovery were thus treated; and (2) Ehrlich's work tends to show that trypanosomes never become resistant to arsenic in this form.

Areanilate + turtar emetic.—Broden and Rodhain, as well as the members of the French Commission, speak well of this combination, which at the present moment seems to be more effective than any other. The areanilate is injected under the skin once a week, and antimony salt into a vein once or twice a week, or in series. Thiroux finds that unpleasant symptoms after antimonial injection can be prevented by the previous administration of caffeine.

To come to the new drugs—arsacetin has been used in 134 cases by Eckard in German East Africa. He finds that therapeutically it equals atoxyl, over which it has the advantage that it is much more stable. Unfortunately, blindness occurs after its use; it is noted in three cases.

P. aminophenylstibinio acid has been given once with good effect (Kopke). In injections it is too painful for general employment, but the fact that it is the antimony homologue of arsanilate makes its use promising as well as of interest.

Arsenophenylglycin is the most promising of all the organic arsenicals. We know that doses of one gramme are well borne by man, and that trypanosomes are banished from the blood and glands. More at present cannot be said. The advantage of this substance is that while the arsanilates and their derivatives have to undergo some change in the tissues—reduction, in Ehrlich's opinion—before they become trypanocidal, arsenophenylglycin is already reduced, hence its toxicity is more constant for any given species of animal, for it does not depend on the varying amount of change effected by the animal tissues.

Ehrlich has shown that to get a sterilising effect it is not necessary for all the parasites to be killed; it is sufficient if the drug so acts on that part of the trypanosome which is concerned with multiplication that the formation of new individuals ceases. He believes that arsenophenylglycin acts in this way. Here we have perhaps another explanation of the undoubted advantage of giving two or more drugs in association. One attacks the nuclear or chromidial apparatus, another the protoplasm, or, as Ehrlich puts it, they combine with receptors situated in these different parts of the cell. Ehrlich himself says that arsenophenylglycin acts much more powerfully on infected guinea-pigs if another drug (tryparosan in this case) is associated with it. Since arsenophenylglycin is likely to be soon in general use, I will echo the warning given by Ehrlich against the use of this substance, to begin with, on patients who have relapsed after other treatment. He points out that such cases are very difficult to cure, so that the reputation of a new remedy may be blasted because it is expected to perform an impossible task. Any new drug, when once its claim to trial in human therapeutics has been established by a series of successes in animal infections, should be tested on untreated selected cases at an early stage of the disease; later, of course, the relapsed or advanced cases may share the benefit.

Dyes.—Treatment by dyes has not proved of much service in the human subject, but we may yet find one which is useful. I do not think parafuchsin in combination with the more powerful trypanocides has had an efficient trial, but tryparosan (Ehrlich) promises still better results because it is more effective in animals, and tends to attenuate the virulence of the trypanosomes.

It is probable that the trypanocides, even when they do not sterilise, increase the resisting power of the organism. They may assist in the production of immunity, as has been shown by animal experiment.

Sorum.—Dr. Andrew Balfour, acting on the idea that the

cerebro-spinal fluid is lacking in trypanocidal substances, has suggested the introduction into the spinal canal of the patient's own serum, perhaps after a course of chemical treatment. The idea and the suggestion had been put forward, unknown to Balfour, by Thiroux two years earlier. We have no record of the adoption of this plan.

General measures.—One factor in treatment has perhaps been imperfectly realised—that is, the importance of increasing the resistance of the patient, especially by a generous diet. The members of the French Commission especially have emphasised this, and it is common knowledge that in times of scarcity or famine sleeping sickness becomes epidemic in places where it was previously present in an un-obtrusive form. In Busoga, a province in Uganda in which the natives reached the segregation camp in half-starved condition, the results of treatment were much less favourable than in other camps. Bödeker, in British East Africa, has treated a few cases with cod-liver oil in conjunction with soamin or atoxyl, and has reported favourably on them. Such treatment seems to me very reasonable, and I think cod-liver oil should be tried in a large series of cases. Dr. C. W. Daniels has recently called attention to the importance of increasing the resistance of the host in the protozoal as in the bacterial diseases. Similarly one must treat any condition which tends to drain the vitality of one's patiente.g., ankylostomiasis.

PROGNOSIS.

It is at present impossible to set a term to the existence of a patient infected with T. gambiense, but we are able to gauge to some extent his power of reacting to treatment and whether there is any prospect of cure. Though patients at the first stage, treated or even untreated, may recover, it is extremely doubtful whether any person has ever recovered in whose perebro-spinal fluid trypanosomes have been demonstrated either by their presence or by the change they have brought about in the constitution of the fluid. Lumbar puncture, then, is essential if we are to give any sort of guess as to the future. If trypanosomes are found, or if there are certain cell changes in the cerebro-spinal fluid, one can say this man may live for years but he is not likely to recover. Similarly the result of treatment can be checked by lumbar puncture. The patient may be improved in his general condition and be apparently well, but the result of the puncture shows that the disease is progressing towards its fatal termination. Broden and Rodhain think that treatment should be continued as long as the cerebrospinal fluid is abnormal; but that this is not a sure guide is shown by the observations of members of the French Commission who found that some cases at quite a late stage had a cerebro-spinal fluid which contained no trypanosomes and few cells. It is worth noting that the members of the French Commission were unable to find trypanosomes in the cerebrospinal fluid of 26 out of 108 advanced cases, i.e., 24 per cent. They do not say if lumbar puncture was repeated in any instance. Lumbar puncture has unfortunately three disadvantages: it is disliked by patients; the trypanosomes come and go in the fluid, so that unless the typical cell changes are present one negative result is inconclusive; and there may be a risk of introducing trypanosomes into the subarachnoid space. Ayres Kopke for this reason in a case in which trypanosomes were very numerous in the blood did not venture to puncture the membranes.

As to the value of auto-agglutination for prognosis we are in want of data. In patients who have made an apparent recovery auto-agglutination has become much less marked

without wholly disappearing.

Thiroux and D'Anfreville have found Cercopitheous patas a valuable test animal when they wished to know if trypanosomes were present or not in a patient who had undergone a course of treatment. They inject 20-40 cubic centimetres of defibrinated blood into the monkey, and again if necessary after a month; if both inoculations are negative lumbar puncture is done and the cerebro-spinal fluid injected into the monkey. Here again, for decisive information one must do lumbar puncture. If this method proves to be as reliable as its authors believe it will be very useful in tropical Africa, for the species ruber or patas is widely spread.

PROPHYLAXIS.

In the last 12 months few fresh preventive measures have been proposed. It is probable that when we know more of Glossina palpalis, its life history, breeding grounds, and dates for vacancies.

natural enemies, we shall be able to devise more effective measures for its suppression or extermination. At present we have in the main two alternatives: to avoid the fly or to clear the scrub which shelters it.

Citronella grass as a teetsefuge has lost its reputation. From various quarters comes the report that the flies do not mind it at all, and one observer doubts if it gives off any smell except when it is crushed. The members of the French Commission insist on the necessity for the use of a mosquito net, and if their belief that mosquitoes are important auxiliaries of palpalis finds confirmation, protection from these, and all biting insects, becomes absolutely necessary. They think also that all Europeans who serve in infected areas should be periodically examined, and seeing that a trypanosome infection at the beginning may be taken for malaria or some other fever this seems a wise precaution.

Roubaud, as a means of dealing with G. palpalis, recommends partial clearing or thinning of the vegetation which shelters the fig. It is generally recognised that complete clearing is not essential, that clean stemmed trees may be left if all the undergrowth is removed; but, if one may judge from photographs, Roubaud leaves much vegetation standing besides trees. His aim is to let the sun's rays reach the soil. The amount of clearing or thinning needed at any spot can always be determined by experiment, and I think it probable in some instances more is done than is necessary. On the only occasion on which I had the opportunity of superintending such work, the flies disappeared when the vegetation on half the area marked out had been cut down. This is worth remembering, for it is costly to fight jungle on a large scale.

We have learnt, I think, that the preventive measures to be adopted are not the same for all parts of tropical Africathat is to say, in one region, as Uganda or Rhodesia, it is found possible, and therefore best, to remove all natives from palpalis areas and to clear the vegetation in the neighbourhood of fords and watering places; in another, as Togoland, neither of these things can be done to a profitable extent, and it is sought to collect all the infected persons into fly-free camps; in a third it may be that a system of inspection posts is of value. Even if our preventive measures fail there are reasons for thinking that nature is slowly working—in Uganda, for instance to produce a state of toleration in the tissues of the persons infected. How this comes about, whether by an attenuation of the virulence of the trypanosome, by the weeding out of less resistant individuals, or by a combination of these factors, we do not know. To give one instance. Baker in Uganda examined in January of this year a native in whose case there was documentary evidence that trypanosomes were found in the blood in 1905. Baker found trypanosomes in his glands. This man had had no treatment and had served in the King's African Rifles for three and a half years without having ever been off duty for sickness. It is worth noting that the French Commission found marked differences in virulence of T. gambiense in man.

I have given you but a bald account of the recent advances in our knowledge of sleeping sickness. The extent of ground to be covered has prevented my straying into attractive by-paths. I think, however, that I have touched sufficient points for discussion.

University and Convocation have been notified that the University Appointments Board has now been constituted. The terms of reference to the board are "to assist graduates and students of the University in obtaining appointments, and to cöordinate and supplement the work done by the schools and institutions of the University with this object." The board hopes that members of Convocation and of the staff present and past of the schools of the University and others who are interested in its progress may be able to assist in furthering the work of the board by bringing its objects before the notice of graduates. The board desires to encourage a selection of University men for all posts where the possession of a University training on scientific methods is an advantage. Its object is to assist graduates to find employment and to assist employers to find, in the University ranks, suitable candidates for vacancies.

The Mightman Lecture

CONGENITAL HEART AFFECTIONS, ESPE-CIALLY IN RELATION TO THE DIAGNOSIS OF THE VARIOUS MALFORMATIONS.

Delivered before the Section for the Study of Disease in Children of the Royal Society of Medicine,

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GENTLEMEN,—In acknowledging the honour that you have conferred upon me by inviting me to deliver the Wightman Lecture, I must confess that the acceptance of this distinction proved far easier than the selection of a suitable subject

The coincidence of congenital malformations of the heart with malformations in other regions of the body is a matter of everyday experience. Heart malformations are not always accompanied by other congenital bodily defects, but they are sometimes found in association with such diverse structural faults as hare-lip, cleft palate, ill-developed teeth, supernumerary auricles and supernumerary nipples, polydactylism, syndactylism, webbed fingers, steeple-skull, defects in the abdominal wall, herniæ, ill-developed and absent rib cartilages, undescended testis, atresia of the anus and rectum, post-anal dimple, congenital opacity of the cornea, coloboma iris, congenital defects of the orbits, congenital ptosis, not to mention many other congenital irregularities of development which are obvious to the naked eye—cretinism, for instance—which sometimes bear them company.

Since heart malformations have been shown to be a family complaint in some instances, it must be admitted that inherited as well as acquired defects in the sperm and germ cells of the parents are of some importance in the production of malformations of the heart, as in other regions, for erratic tendencies to produce deformities when once acquired are handed down from parents to children. Inquiry has been directed to the state of the mother's health, both bodily and mental, during the pregnancy to serve as an explanation for the production of congenital cardiac defects. The heart is perfectly formed, though in miniature, in seven weeks' time from the date of conception, but various examples of congenital heart disease have been recorded by J. Lewis Smith and others, following upon frights and so on during the last two or three months of pregnancy, so it is obvious that these psychical disturbances cannot possibly have had any effect upon the feetal heart.

Several examples of fœtal endocarditis have been shown to the Society for the Study of Disease in Children or have been spoken of at its meetings. These include six cases, while a few others have been recorded by Planchu, Gardère, and André Moussous. Fœtal heart murmurs have been recorded by various writers.

It is only in a very small proportion of the cases of congenital defect that endocarditis, when it is limited to the valves, can be viewed as the cause of the disease, and such arise after the heart has been completed. The bulk of the cases of congenital malformation of the heart appear to be due to developmental errors when seen by the light of modern research on cardiac development.

Morbus caruleus and congenital malformations of the heart have been looked upon as synonyms, but without reason, for children with severe congenital morbus cordis are frequently not blue, even when excited or crying. Many verified cases of congenital morbus cordis have been recorded where cyanosis was not a symptom during life. Some children with congenital morbus cordis are fresh-coloured. Others are strikingly pale. In some the lips are dark crimson, perhaps inclined to blueness rather than redness, or to turn lilac on crying. Or the complexion may be quite good and only the fingers dusky and cold-looking. The majority, however, are cyanosed more or less, and all gradations of cyanosis may be noticed, from that of a dark rubicund face with similar coloured ears and reddened finger- and toe-tips, or a state of rather dusky-blue lips and cheeks and tongue,

and a similar condition of the extremities, to one where the face is plum-coloured, the conjunctive suffused, the buccal mucous membrane and tongue the colour of a slate, and the body generally dusky. In the majority of those who are blue the cyanosis dates from birth, but in others the children show no signs of blueness until after an attack of one of the exanthems, or following bronchitis or broncho-pneumonia, with or without whooping-cough.

By far the most common malformations of the heart in association with cyanosis are those cases where the pulmonary artery or the conus is either absent, rudimentary, or constricted. Next in frequency in the list of malformations, though only to about one-seventh of their number, is transposition of the pulmonary artery and aorta. Apart from these mal-developments, which form the bulk of congenital cardiac anomalies, the malformations which give rise to evanosis are numerous and various.

Various views have been and are still held as to the causation of the cyanosis. In many cases the explanation is suggested, not that the lungs cannot exygenate properly, but that they are prevented from dealing with a sufficient proportion of the total quantity of veneus blood throughout the body by reason of various defects in the pulmonary region, perhaps combined with weakness of the heart muscle. Cyanosis appears to depend in some cases not upon defective agration from defects in the lungs, but to be due to the conformation of the heart, which by reason of faulty construction and physical weakness is placed at a mechanical disadvantage, and is not adapted to deliver a sufficient quantity of venous blood to the lungs to be aërated. But this will not explain all cases, for in some the lungs are not healthy and display considerable microscopical alterations. So wide and so tortuous were the thickened lung capillaries in the case of atresia of the pulmonary artery I examined that those in the alveoli admitted six or more red corpuscles abreast. Changes such as these, permeating as they do the whole of the lung structure, are not conducive to proper aëration. It would appear, then, that diffuse and not localised structural alterations of the lung tissues are favourable to the production of cyanosis.

Here, then, are two factors in operation: the difficulty of getting the blood to the lungs to be aërated, and the difficulty of aërating the blood when it arrives there should it so happen that the lungs are not in a position to undertake the operation by reason of their structural defects.

Clubbing of the fingers and toes in congenital heart disease, the so-called Hippocratic fingers, depends a most entirely on congestive swelling and thickening of the soft parts of the terminal phalanges. The connective tissue is increased and the capillaries are enlarged and increased in number. The finger-tips are broadened and the nails are cyanosed, a different appearance from that shown in chronic osteoarthropathy, where the nail is domed like a watch-glass, curls over the finger-tip, and bears a striking resemblance to a parrot's beak, and is combined with osteo-periostitis of the terminal phalanx. The finger looks like a drumstick and the nail is pink coloured.

There appear to be two varieties of clubbed fingers; in one there is osteo-periostitis of the terminal phalanges, but in the other this has not yet been demonstrated. Whether there are really two varieties of clubbed fingers or whether the conditions are different stages of the same process has not yet been settled. Common as is this clubbing of the fingers and toes in congenital heart disease, nevertheless it is a feature of this disease which very often is wanting. It is in pulmonary atresia and stenosis that clubbing most commonly arises, and it is in these conditions that congestion is most frequently observed.

Ophthalmoscopic examination in cases of marked congestion reveals tortuous retinal blood-vessels of which the veins are very large. The blood in the arteries looks decidedly venous, though they are not quite so dark-coloured as the veins. The red reflex, which is of cyanosed appearance, often appears to start from the physiological pit, and the number of vessels on the face of the disc appears to be greatly increased. In children where the cyanosis amounts to but little more than a ruddy bucolic appearance, a want of the usual colour contrast between the arteries and veins is quite noticeable. The retinal blood-vessels early display evidences of congestion by enlargement and tortuosity of both arteries and veins. If there be considerable cyanosis retina, as sometimes is the case, without the associated appearance

of curly retinal vessels, such an ophthalmoscopic finding, although not proof that there is no narrowing of the pulmonary region, nevertheless suggests that the pulmonary tract is either not involved or that right-sided muscular compensation is sufficient to overcome the obstruction.

Blood changes, such as polycythæmia, macrocythæmia, and increased viscosity along with a by no means invariable increase in the hæmoglobin, are not uncommon. In one blue child under my care, aged two and a half years, with clubbed fingers and toes, who had been blue since birth, there was a blood-count of 7,880,000 per cubic millimetre, and the hamoglobin was 122 per cent. That is the largest number of red cells that I have met with in congenital heart disease. Many of the children under my care with polycythæmia have shown a deficiency in the hæmoglobin rather than an increase. In a blue infant, aged one year, with clubbed fingers and toes and lips, and finger- and toe-tips of purple hue, the blood-count amounted to 5,400,000 red cells per cubic millimetre, with a hæmoglobin percentage of 55 only.

Congenital heart murmurs are of various characters. may be heard as harsh, roaring, churning, growling, sawing, twanging, rushing, or rasping noises. Musical bruits are not common in my experience. If murmurs of such character be heard in a child under three years of age, and if they be conducted over wide areas, the presumption is strong that the affection is of congenital origin. Soft, low, very faint bruits are sometimes present. Murmurs are usually systolic, occasionally pre-systolic or diastolic, and there is that peculiar rumbling murmur carried through the systole and diastole, which points to a patent ductus arteriosus or a communication between the pulmonary artery and the aorta. Sometimes the bruits become inaudible shortly before death or during a paroxysm of cyanosis, and I have noticed a loud murmur almost to disappear under the influence of an anæsthetic. A murmur may be detected at one auscultation, and cannot be heard at the next, and the causes for this temporary disappearance are not quite clear. Murmurs are also influenced by posture and by respiration. In regard to conduction, in some instances systolic bruits may be traced along the arteries over the brachials as far as the bends of the elbows, and also be heard in the thighs along the course of the femorals. They can not only be followed up the arteries of the neck, but exceptionally can be heard by applying the ear to the vertex. In only a small proportion of the cases are murmurs absent. In my series this occurred in 7 per cent.

Thrills are not infrequent; they are usually systolic, occasionally diastolic, or even pre-systolic. These purring tremors may be localised to the site at which they are produced or be of wide conduction. Further, the site of greatest intensity by no means necessarily corresponds to the seat of production. A systolic thrill of greatest intensity at the second left interspace and conducted towards the corresponding clavicle is, however, pathognomonic of patent ductus arteriosus. A systolic thrill may be felt at the episternal notch over the aorta and be conducted into the

carotids and subclavians.

Defects in the interventricular septum are the most common of all cardiac malformations. They are associated mostly with stenosis and atresia of the pulmonary artery, transposition of the great vessels, and occlusion of the tricuspid orifice. The combination of pulmonary stenosis, deviation of the aorta to the right, and patent septum ventriculorum is one of the most usual forms of congenital morbus cordis. The commonest situation for perforate septum ventriculorum is directly beneath the aortic valves and just in front of the undefended space. In front of it lies the fleshy part of the septum and behind it the membranous. On the right side of the heart this opening will be found beneath the septal and anterior cusps of the tricuspid valve. It is rare for a perforation to be found in the anterior fleshy part. The septum may be absent, as in the cor triloculare, or the septum may be represented by a falciform ridge springing from the lower and anterior wall of the ventricle, or irregular defects may arise

Changes in the heart muscle do not necessarily follow septal defects. In some cases, however, hypertrophy and dilatation of both ventricles are seen, and this is especially likely to occur on the right side.

Defects in the septum do not always produce murmurs, but when braits are present the following characteristics have majority of cases of stenosis the interventricular septum is been noticed by me in the pure cases which have come under patent. When this septum is closed the foramen ovale is

my observation. In a child, aged two years, there was a loud rough systolic bruit audible all over the chest, the point of maximum intensity being over the pulmonary area. It was not audible in the big vessels of the neck; the second pulmonary sound was accentuated. In an infant, aged eight months, the systolic bruit was heard loudest at the junction of the xiphoid with the gladiolus on the left, and it was conducted a short way into the axilla. A faint systolic bruit was heard only occasionally at the left base. It was not transmitted to the neck vessels. The second pulmonary sound was accentuated. In an infant, aged three months, there was a loud systolic murmur at the left base, which was traceable as far as the left mid-axillary line. The second traceable as far as the left mid-axillary line. sounds were normal, and in this infant the heart was not enlarged. In the oldest child there was a marked systolic thrill all over the cardiac area, and in the child aged eight months a systolic thrill was occasionally felt at the left base, but this might have been due to the patent ductus arteriosus, and in the infant aged three months it absent.

It is not possible to lay down hard-and-fast rules as to the area of maximum intensity of the systolic bruit occasioned by patent septum ventriculorum. It is located on the left side of the sternum on the costal cartilages or interspaces, somewhere between the second left interspace and the junction of the seventh costal cartilage with the sternum, sometimes between the nipple and the left margin of the sternum, and rarely at the apex. The systolic thrill which occasionally accompanies it is not confined to any particular cardiac area; it is sometimes to be felt in the episternal notch, sometimes at the epigastrium. An important feature in the diagnosis of patent septum ventriculorum is the detection at the apex of a healthy first cardiac sound audible through the bruit and the tactile sensation accompanying it of the mitral valvular snap. The second pulmonary sound at the left base is accentuated if the pressure of the right ventricle be increased, and exceeding purity of this sound is important and suggestive.

Defects in the interauricular septum.—A patent foramen ovale is so frequently found post mortem that it can hardly be classed with other congenital abnormalities, and Fisher states that slight patency of this foramen can be found in one quarter of necropsies on adults. A widely open foramen, however, must be looked upon as an anomaly. It occurs either alone uncommonly, or frequently in association with other interauricular septal defects. Defects in the lower part of the interauricular septum are rare, and are explained by failure of the septum primum to descend and unite with

the endocardial cushion between the ventricles.

Open foramen ovale alone and along with other interauricular septal defects occurs in association with stenosis and atresia of the pulmonary artery, transposition of the great vessels, and occlusion of the tricuspid orifice. Defects in the interauricular septum happen nearly as frequently as defects in the interventricular septum. Very occasionally they are the sole lesions, and very slightly exceed in number as solitary lesions the similar conditions found at the interventricular partition.

Patency of the foramen ovale and defects in the interauricular septum are often diagnosed and seldom discovered, and for the reason that they do not often give rise to characteristic bruits-indeed, murmurs are but seldom produced by these abnormalities. Frequently cyanosis is not a symptom, though cyanosis with paroxysmal increase may be a marked feature. Gross interauricular septal defects may be carried through life without causing any inconvenience or

giving rise to any suspicion as to their presence.

Septal defects become of consequence if the auricles act unequally, and if there arises an overflow of blood into the right auricle, which produces stasis in the systemic veins. A reversal of the flow into the left auricle may bring about the same conditions by throwing extra pressure on the pulmonary artery and so on the right auricle. A point of clinical interest about defects in the interauricular septum, as in the interventricular septum, is that septic and other particles may be carried from the venous system direct to the arteries of the brain and body.

Stenosis of the pulmonary region is one of the most common of all the cardiac malformations, and in relation to atresia it occurs nearly three times as frequently. In the large

often widely open. Both of these feetal passages may remain open. In rare instances both the fœtal passages are closed. In atresia the interventricular septum is more frequently found closed than in stenosis. Of 13 cases, six of stenosis and seven of atresia, I found the ductus arteriosus closed in all the cases of stenosis and patent in all the cases of atresia except one, and in that case the lungs were supplied by a large branch from the left innominate artery and not by the ductus arteriosus as is usual. If the ductus be closed in atresia the septum will be found defective, or the septum and foramen ovale will be open, and vary rarely the foramen ovale only. When there is a defective interventricular septum the aorta, which will then be found large, is frequently transposed to the right, and this irregularity occurs more often in atresia than in stenosis. The aorta may arise from both ventricles over the defective septum, or be thrust more to the right and take origin from the right ventricle only. The stenosis may involve the whole pulmonary region. there being a hypoplasia of the pulmonary artery and its branches. In some cases the stenosis is valvular in character. It may consist of thickened nodular valve-cusps associated with a normal pulmonary artery and normal interventricular septum.

In some cases stenosis has evidently originated later in intra-uterine life, after the closure of the septum ventriculorum. In the other and the more numerous variety the forms that are met with suggest a developmental origin and a secondary endocarditis infection implanted on a rudimentary pulmonary tract.

In developmental cases the pulmonary artery is usually thin-walled and vein-like. In the other variety the pulmonary artery may be thin-walled also, but it is often either dilated or normal. In stenosis hypertrophy and dilatation of the right auricle and ventricle are common, and if the aorta be deviated to the right these hypertrophies always arise, and this vessel will be found large and thick-walled. The combination of pulmonary stenosis, deviation of the aorta to the right and patent septum ventriculorum, is the most usual of all congenital abnormalities.

In atresia the obliteration occurs at the conus, or the valve, or the pulmonary artery may be entirely absent.

Regarding the detection of right-sided hypertrophy of the heart in pulmonary stenosis and atresia a small amount of right-sided enlargement is rather apt to be overlooked if reliance be placed solely on the superficial area of cardiac dulness. Deep percussion should always be resorted to in addition, and it is well if possible to verify the result by X ray examination. The lung on the right side of the heart covers a moderate enlargement of the right auricle and ventricle and so masks the signs.

The bruit of uncomplicated pulmonary stenosis is systolic in time, and is best heard over the second left interspace close to the sternum or on the third costal cartilage. It is usually conducted over the left front of the chest and crosses the sternum, being heard slightly to the right. It is carried up towards the left clavicle. It usually ends before the axillary fold. There appears to be some doubt as to whether the bruit can be heard in the back in uncomplicated cases. It certainly can—I have post-mortem evidence as to that. It can be heard all over the front of the chest and all over the back, the left side more than the right, and also in the left axilla. It is not heard in the carotids.

Should pulmonary stenosis be associated with a patent septum ventriculorum, as so frequently happens, a systolic bruit will probably be heard in the carotids. If that be heard the suggestion is that pulmonary stenosis is combined with this septal defect, as I believe I was the first to point out some years ago. It is not necessary for the aorta to arise immediately over the septal defect to conduct a bruit into the neck vessels. The prospect of life varies in these cases according to the defect. In atresia with a closed septum the children die in infancy. If the septum be patent the child may live a few years in place of a few months. In stenosis with a closed septum middle age may be reached, but with a patent septum adult life is the limit.

Duotus arteriosus.—The average diameter of the duotus arteriosus at birth, as ascertained by post-mortem examination, is stated by Thérémin to be 4.8 millimetres, and according to Klotz this measurement is no indication of its functional capacity during life, for he states, on experimental evidence, that the size of this vessel when in action is equal to the capacity of the pulmonary artery itself.

Patency of the ductus arteriosus as an isolated lesion is rare, very few cases being recorded in the literature, but as an associate of other congenital abnormalities of the heart it is quite common. The patent duct may be cylindrical or conical, with the base of the cone on the aortic side, or globular. The lumen of the vessel in the cases that have come to autopsy has varied in size from that of a bristle we that of a finger. Hypertrophy and dilatation of the right ventricle and dilatation of the pulmonary artery commonly take place in chronic cases.

Attacks of dyspnea, epistaxis, tachycardia, and angina have been recorded by various observers in association with this condition. The characteristic rumbling mumur accompanying patent ductus has been verified by posmortem examination on adults, but not, as far as I am awar, on children. Gibson times the murmur as commencing som after the systole and gradually shading off in the long pause. Combined systolic and diastolic bruits have been recorded by Drasche and a diastolic bruit by Fagge. Systolic bruits have been described by Murray, White, Simmons, and Bittorf.

The systolic bruit is heard loudest in the second or third left interspace, close to the sternum. It may be heard only to a limited extent, or it may be carried all over the chest, back and front, and into the arteries of the neck, as in my verified cases. A thrill is by no means constant. When it occurs it is best felt in the second left interspace, and if the thrill be carried up to the left clavicle in the direction of the pulmonary artery that is pathognomonic. The pulmonary second sound may be unaltered, but if the blood pressure be raised in the pulmonary artery by hypertrophy of the right ventricle or by the contribution from the aorta, then an accentuated pulmonary second sound will be heard. If the X ray picture suggests an enlargement of the pulmonary artery, that point is in favour of patent duct. If the second pulmonary sound be loudly accentuated there will probably also be observed visible diastolic pulsation or rebound in the second left interspace at the time of the closure of the pulmonary valves.

Bruits and physical signs cannot be expected to occur in patent ducts of small calibre. In order that a bruit shall be produced it is necessary that there shall be a sufficient space within the walls of the duct and pulmonary artery, in which the conflicting blood currents shall operate best to produce vibration and sound.

Systolic bruits, in my experience, are the usual accompaniments of patent ductus arteriosus in children, and the rumbling bruit occupying the systole and diastole in adults which is considered to be characteristic of that lesion is not common in them.

Tardy closure of the ductus arteriosus may well explain the disappearance of cardiac bruits in children who have been diagnosed as suffering from a congenital heart affection. Reviewing the morbid anatomy of the congenitally deformed heart, closure of this feetal channel appears to be about the only thing possible in the way of a cure open to these cases.

Coarctation of the aorta is the name which has been given to stenosis or atresia of that vessel, either at or below the isthmus, that part which lies between the left subclavian artery and the ductus arteriosus. Soon after birth that narrow section of the aorta which is not much used during intra-uterine life is apt to be smaller than neighbouring parts of this artery, but when the circulation is reconstructed this part soon acquires its proportional relationship. describes two types. In one, the infantile, there is diffus narrowing of the aorta at the isthmus. In the other, the adult form, there is an abrupt constriction as of a cord at or near the insertion of the ductus arteriosus. The infantile type is developmental and may consist of a moderate stenosis only, or owing to the complete failure of development in regard to that part of the fourth branchial arch which lies between the ductus arteriosus and the subclavian artery. the part corresponding of the aorta—the isthmus-is represented by a cord only or completely disappears. The adult form he considers is not of developmental origin, because it does not occur in the feetus and is not met with until the closure of the ductus arteriosus, and is brought about by the act of closure of the duct itself, elements of which are incorporated in the aorta, and which by their contraction constrict that vessel as with a ligature. In the infantile type of cases patency of the ductus arteriosus is common, and in the adult type that channel is usually closed. In the adult type extensive collateral circulation is common according to

Bonnet. In the infantile type associated cardiac developmental anomalies are common and often severe; in the adult type the anomalies are usually unimportant and rarely severe. In the adult type the percentage of cases without associated cardiac developmental anomalies is far greater than in the infantile.

From the literature it appears that patients with coarctation of the aorta may live long and the condition not be suspected. In some death takes place suddenly and without obvious reason, sometimes from rupture of the aorta. Or death may occur from heart failure preceded by the signs and symptoms of mitral disease.

Congenital acrtic stenosis and atresia are much rarer than are the corresponding defects at the pulmonary artery. Conus stenosis in this situation takes the form of a thickened ring of the endocardium, just below the acrtic valves, which involves the base of the anterior mitral cusp, and is ascribed by Keith to arrest of development. The danger of this rare anomaly lies in its tendency to become the seat of endocarditis. In acrtic atresia, brought about by such conditions as obliteration at the root or by fusion of the cusps, the left ventricle atrophies and the circulation is conducted through the foramen ovale, patent septum ventriculorum, and patent ductus arteriosus. The life of such cases has been limited to a few weeks. In acrtic valvular stenosis there are two forms: one in which the septum ventriculorum is perfect, the other in which it is deficient. In this latter variety other developmental anomalies are the rule.

Aortic disease of the acquired type in children is not as rare as is commonly supposed, and some of the cases are no doubt of congenital origin. Another point of clinical interest, a recognition of which will prevent falling into error, is that aortic disease in children is apt to be associated with a bruit which is heard loudest over the pulmonary area, and not over the aortic cartilage.

Hypoplasia of the aorta is characterised by diminution in size of the aorta and arteries throughout the body, the walls of which are thin and elastic. A congenital origin has been claimed for this condition, because it is so commonly associated with anomalies in the generative and circulatory systems. A congenital tendency to the dwarfing of the arterial system had been ascribed to tuberculosis in the parents, and it may be due to other states of bad health. Hypoplasia of the aorta is associated with a dwarfed heart in some instances, and in others with an enlarged heart confined to the left side or involving both ventricles. If the heart be small during childhood it hypertrophies at puberty. The period of danger in these cases appears to belong to adolescence, when heart failure is not unlikely to occur, and this is more likely to arise under physical strain.

Defects in the auriculo ventricular valves are very uncommon. They are commonly combined with other cardiac abnormalities, uncomplicated lesions of the mitral and tricuspid valves being exceedingly rare. Of the two valves the tricuspid is more frequently attacked than the mitral, and of the lesions tricuspid atresia is the commonest.

Trouspid stenosis in association with disease of the pulmonary valves is occasionally seen.

Mitral atresia is very rare. Cases have been recorded by Rokitansky, Thérémin, and by Lawrence and Nabarro, and in each instance the condition has been associated with somatic abnormalities. A specimen of congenital mitral stenosis was exhibited at the Society for the Study of Disease in Children by Fisher in 1901. Of mitral insufficiency Cautley has afforded an example in a girl, aged 22 months. The physical signs were those of mitral regurgitation, and another case in a boy, aged 10½ months, has been quoted by Maude Abbott.

Hypertrophy of the heart undoubtedly arises as an idiopathic disease of congenital origin. Simmons was the first to record a case of its existence at birth. He found the heart of a newly born child, who died during the labour, to be enlarged to twice its natural size, all other organs of the body being quite healthy. Prior to that Hauser had recorded a case in a baby, aged 11 months, in which the heart was enormously dilated, with hypertrophied right and left ventricles. Virohow suggested that the hypertrophy might be congenital.

Cardiac displacements such as dextrocardia and mesocardia are the only congenital malpositions that are of interest to the physician and therefore that need be reviewed. Dextrocardia accompanied by transpositions of the viscera is commonly viewed rather as a rare developmental freak than recognised, as should be the case, as a not very out-of-the-way clinical

experience. Dextrocardia without associated transposition of the viscera is rare, and not only is it rare, but it must be viewed with suspicion because the diagnosis of congenital dextrocardia has been made on some few occasions, and this opinion has not been confirmed by necropsy.

Sometimes the position of the feetal heart in the centre of the thorax is maintained, giving rise to the condition known as "mesocardia." The apex beat will then be felt in the epigastrium, and the position of the organ will readily be demonstrated by the X rays.

CHRONIC GLANDERS IN MAN WITH REFERENCE TO AN UNUSUAL TYPE AFFECTING THE UPPER RESPIRA-TORY TRACT.*

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AND DIBEASES OF THE CHEST; ASSISTANT SURGEON,
THROAT HOSPITAL, GOLDEN SQUARE.

SINCE the publication in 1830 by Elliotson of the first undoubted case of chronic glanders in man the recognition of this condition has become increasingly frequent, and in 1906 Robins 2 of Montreal collected 156 cases, including one of his own which was the first reported case occurring in Canada. After a careful study of these cases and of a few others which have since been recorded, the striking characteristics appear to be, firstly, the great variability of the manifestations: secondly, the extreme difference in duration both of the incubation period and of the periods of latency or quiescence which occur during the course of the disease; and thirdly, the similarity of the manifestations to those of syphilis and tubercle. In about 40 per cent. of the collected cases there was ulceration of the nasal, buccal, or pharyngeal mucous membrane at some time or other during the course of the disease, but in only three of these was it a salient feature, while in one case alone was it the sole lesion at the time when the patient came under observation. This case was that of a patient at the Westminster Hospital under the care of Mr. A. H. Tubby in 1904-05. We have, however, recently had the opportunity of observing a similar case for a little over a year, and feel that it is worthy of being somewhat fully recorded, both on account of its rarity and because of the importance of making a correct diagnosis. The difficulty of diagnosis in this class of case lies in the close resemblance between this condition and tertiary syphilitic ulceration of the buccal and pharyngeal cavities; indeed, both in Mr. Tubby's case and in our own case the patients were treated for syphilis for a considerable length of time.

CASE 1 (Mr. Tubby's case).—The patient, a carman, aged 22 years, was first seen in May, 1904. "Symptoms had then been present for nine months. At this time the soft palate was entirely destroyed; the hard palate was perforated, and there was a widespread granular erosion of the oral and nasal pharynx. On the lateral aspect of the dorsum linguæ was a soft discrete swelling, walnut size. There was no history or evidence elsewhere of acquired or congenital By December, 1904, the ulceration had spread considerably, involving the anterior part of the tongue, but for a month or two the progress of the disease seemed to be arrested, and the patient's general condition improved. temperature curve for 9 weeks showed an almost uniform daily intermission of 2° or 3°, but for the last month or two of his first stay in hospital was almost within normal limits." In January, 1905, a diagnosis of glanders was made. Previous to this the patient had been treated for syphilis. By April, 1905, a considerable part of the alveolar border of the upper jaw was destroyed. Almost the whole of the anterior third of the tongue was destroyed; the right antrum of Highmore was invaded. The patient died from "exhaustion" in August, 1905.

^{*} The superior figures occurring in this paper refer to the bibliography printed at the end.

CASE 2.—On August 8th, 1908, the patient, a carman, came to the out-patient department of University College Hospital, where he was seen by one of us. He was complaining of "sore-throat." The patient was a slightly built man, "sore-throat." The patient was a slightly built man, appeared thin and wasted, but did not look acutely ill. On inspection of the mouth extensive ulceration of the palate and pharynx was visible. This had completely destroyed the uvula and also the posterior half of the soft palate. The tonsils and fauces were entirely destroyed, with the exception of a part of the anterior pillar and a small piece of tonsil on the left side. The ulceration was beginning to invade the alveolar border of the lower jaw on the right side, with extension on to the cheek. There were also one or two small isolated ulcers present on the remains of the soft palate, due to the breaking down of small abscesses. These ulcers were not raised above the general surface of the palate and their edges were very thin and undermined. The main ulceration was continuous over the palate and fauces. There was very little sign of inflammation, the margins not being discoloured and only slightly swollen. The edge was extremely irregular and a little undermined, while the floor was covered to a large extent by sticky muco-pus. The visible part of the posterior pharyngeal wall opposite the base of the tongue was covered by scar tissue, a prominent band of this running almost transversely across. On posterior rhinoscopy, the septum and turbinals were seen to be swollen and covered by tenacious pus, which also covered the Eustachian cushions and orifices, but there was no ulceration. vault and upper part of the naso-pharynx were covered by thick crusts. On removal of these the condition was seen to be similar to that of the lower part of the posterior pharyngeal wall, the mucous membrane being replaced by cicatricial tissue. On anterior rhinoscopy, a septal deviation and enlarged anterior end of the inferior turbinal were found blocking the right nostril, the left being widely patent and the mucous membrane reddened. There was no ulceration on either side. On laryngoscopic examination nothing abnormal was found. There was no enlargement of the submaxillary or cervical glands. Nothing abnormal was found in the heart and lungs. A small scar, the result of an abscess, was present on the back of the left forearm. No evidence of syphilis, congenital or acquired, could be found on careful search.

The case was diagnosed to be one of chronic glanders, and this diagnosis was strongly supported by the following facts, which were elicited on questioning the patient. He first felt ill in August, 1907, when he was seized with violent cramps in the legs, pains in the back and limbs, and severe headache. He was taken to Charing Cross Hospital. On questioning the patient as to the condition of the horses under his care at that time, he said that the horse he was driving when he was taken ill "had a mattery discharge from its nose and large lumps under the jaw." He further learnt that four days after his admission to hospital (Charing Cross) this horse was removed from the stable and destroyed. His informant thought that it was suffering from glanders.

The patient was admitted to University College Hospital under the care of Mr. W. Trotter and was isolated. following history was then compiled from material obtained from the Charing Cross Hospital. On August 13th, 1907, the patient was admitted to that hospital, remaining there till Sept. 6th. His illness dated from August 8th, when he was seized with violent cramps in the legs, pains in the back and limbs, and severe headache. During his stay in the hospital these continued but gradually diminished in severity. abscess developed on the back of the left forearm and on August 27th this was opened. Cultures from the pus proved sterile. The temperature ran a febrile course but gradually came down to normal. The case was thought to be one of influenza with intramuscular abscess. On Jan. 10th. 1908. the patient returned to Charing Cross Hospital and attended the throat department with an ulcerated throat which was considered to be syphilitic. He gave a history that for about six weeks he had found that liquids came back through his nose. At this time there was extensive ulceration of the naso-pharynx and tonsils, with loss of the anterior pillar on the right side. There was no ulceration in the nasal cavity. He attended till Feb. 18th, when he went to the infirmary, where he remained till August 8th, on which day he came to University College Hospital. While in the infirmary he was treated for syphilis, but without benefit.

On admission to University College Hospital on August 8th,

1908, bacteriological investigations were at once commenced. Cultures on potato were made with pus from one of the isolated ulcers on the soft palate, and also from a small piece of the ulcerated border. A non-Gram-staining organism was grown, which when injected intra-peritoneally into a male guinea-pig produced orchitis, but conclusive evidence of glanders was not obtained. While in the hospital the patient was treated with mouth washes and large doses of mercury and potassium iodide, bacillus mallei not having been found. His general and local condition improved somewhat, the ulcerated area becoming cleaner and showing evidence of healing in some places. The temperature at first was very irregular, rising to 102° F. or more at night, and coming down to normal in the morning, but after three or four weeks it became more regular, with only an occasional rise of one or two degrees. He was discharged on Oct. 24th, but continued to attend as an out-patient in the Throat Department, under the care of Mr. H. Tilley. In December, 1908, the case was shown at a meeting of the Laryngological Society, when the consensus of opinion was in favour of the diagnosis of refractory syphilitic ulceration of the upper respiratory tract. A Wassermann's reaction was done by Professor Lieven of Aix-la-Chapelle, who confirmed the diagnosis of syphilis on clinical examination, but was surprised by obtaining a negative result by the test. The patient continued to attend the ear and throat department of University College Hospital until May, 1909, when both the general and local conditions were much worse.

In June, 1909, he was admitted to the Throat Hospital in Golden-square. On admission he was found to have two abscesses, one subcutaneous, below the angle of the jaw on the right side, and the other pointing under the mucous membrane of the right cheek, while the ulceration of the palate had progressed considerably. The abscess below the jaw was opened and cultures were made from the pus. A non-Gram-staining organism was again obtained and of 2 male guinea-pigs injected, 1 died with orchitis. A section from the ulcerated edge of the palate showed chronic inflammatory changes. Owing to the closing of the ward he left the Throat Hospital, and on July 26th, 1909, was readmitted to University College Hospital under Mr. Bilton Pollard. A few days previously he had a considerable hæmorrhage from the palate.

On admission the patient was very pale and much wasted. On the right side of the neck was now a small, shallow, irregular ulcer, the remains of the abscess opened while the patient was at Golden-square. The edges of this were thin, congested, and undermined, and some thin, yellowish ous was escaping. On both sides of the face over the lower jaw were small abscesses; that on the right side was covered with thin discoloured skin, the skin over the other being very little affected. There was scarcely any inflammation around either abscess. There were no enlarged glands on either side of the neck. The ulceration in the mouth had by this time entirely destroyed the soft palate with the fauces on either side, and was spreading forwards on to the cheeks and alveolar border of the lower jaw on both sides. The ulceration on the hard palate had spread until it reached the alveolar border, and granulations were present between and around the teeth. On anterior right side, however, was filled with pus, and on the lower portion of the septum was an oval ulcer extending backwards on to the spur, the ulcer having a sloughy base and somewhat overhanging edge. The inferior turbinal was red and granular in appearance and touching the spur. On posterior rhinoscopy the mucous membrane on either side of the septum was swollen and a small ulcer was present on the left side of the posterior border of the vomer. The posterior ends of the middle turbinals were hypertrophied, and on the posterior end of each inferior turbinal was a small ulcer. The vault of the pharynx presented practically the same appearance as in August, 1908. There were some granulations in front of the left Eustachian orifice. On laryngoscopy the epiglottis. larynx, and base of the tongue were unaffected. No abnormal physical signs were detected in the lungs.

On August 3rd the abscesses in the face were opened and thick yellowish pus was evacuated. "From this pus four cultures were made on potato. Growth was visible on August 6th in one of the tubes, and on the 7th half a dozen separate colonies were present. Microscopic examination of

this growth showed a picture indistinguishable from that seen with an undoubted glanders culture. Three subcultures were made from the primary culture on August 7th, and each had a visible growth on the 9th, apparently quite pure. From one of these cultures two male guinea-pigs were inoculated intraperitoneally on the 9th, and also fresh subcultures made. On the 12th there were signs of orchitis in both guinea-pigs, and on the 16th one was chloroformed to death and a post-mortem examination made. There were no apparent lesions of the abdominal or thoracic viscera, but there was extensive ulceration of the tunicæ vaginales of the testicles, and the testicles were partly adherent to the scrotum. Microscopic examination of the pus showed the presence of bacilli with the morphological characters of glanders bacilli, and cultures made on the 16th, using the pus as seed material, had a visible growth on the 19th, and this growth had all the appearances of a glanders growth, both macroscopically and microscopically. Single colonies also appeared on Angust 8th in two more of the original tubes." These bacteriological investigations were made at the Royal Veterinary College, Camden Town, by Mr. A. Leslie Sheather, to whom we wish to tender our best thanks.

While in hospital the patient's general condition improved somewhat, although the palatal ulceration continued to spread. Two or three pretty severe hæmorrhages occurred from the separation of sloughs in the naso-pharynx, and a small oval perforation appeared in the hard palate. The ulcers on the face pursued a very chronic course, but were scabbed over by Sept. 2nd. The temperature varied from 102° to 97.4°, rising every two or three days, and usually falling to normal within 12 hours.

Chronic glanders is notoriously difficult to diagnose, but there are, however, in the majority of cases some features which, although when taken singly are of small value, yet collectively are of the greatest importance in making a diagnosis; these are: 1. Occupation. In nearly every case of chronic glanders the patient has worked at some period among horses. 2. History. (a) Of a febrile attack of uncertain nature at a variable period before the onset of the symptoms for which the patient seeks treatment. Such an attack occurs in 40 per cent. of cases of chronic glanders (Robins) and has been most variously diagnosed. subcutaneous and intramuscular abscesses. These have been found to occur in 83 per cent. of cases (ibid.). (N.B. The scars resulting from these abscesses have frequently been mistaken for the result of syphilitic lesions, as in a case described by Besnier. () 3. Type of ulceration. In a considerable proportion of the cases where palatal ulceration is found it is quite indistinguishable from that of tertiary syphilis, but in some cases, of which our own is an example, the process seems to be much more one of simple melting away of the tissues than of granuloma formation with subsequent necrosis, such as occurs in gummata. 4. Temperature. A daily variation of 2 or 3 degrees or more is an almost constant feature. In our own case the temperature was much more of a tertian type, and Hallopeau 5 notes the same fact. 5. Presence or absence of undoubted signs of syphilis such as interstitial keratitis or old periosteal nodes. 6. Reaction to anti-syphilitic treatment. Improvement in chronic glanders is said to have occurred in a few cases under mercurial treatment, and in two cases recorded by Gold a cure is said to have resulted. In the majority, however, no improvement results.

A diagnosis can generally be arrived at on careful pathological investigation, but the following sources of error have to be borne in mind:—(a) In examinations of sections from the edge of an ulcer glanders bacilli are few in number and difficult to recognise, the reason, according to Sir J. McFadyean, being "the rapidity with which nuclear destruction takes place, and the persistence with which the nuclear fragments remain as deeply staining débris, rendering the attempt to identify the bacilli in sections very unsatisfactory." (b) The intraperitoneal inoculation of guinea-pigs with pus direct from an ulcer or abscess is liable to be inconclusive owing to the animal not developing orchitis at all or else dying from general peritonitis before orchitis has time to develop. To obtain conclusive evidence from Straus's reaction it is necessary to make an injection from a culture grown (on potato) with pus from the suspected patient. Omission of this precaution was the Omission of this precaution was the cause of the first failure in our own case. (c) An adult male guinea-pig should be used for the inoculation. Bernstein

quotes Nicoll, who proved experimentally the marked vulnerability of the tunica vaginalis of the adult male guinea-pig, the greater resistance of the female, and the still greater resistance of the young male.

General Remarks.

Mode of infection.—In the majority of cases this occurs through a wound or abrasion of the skin, but in a certain number the infection appears to be through the mucous membrane of the mouth or nose. Whether a previous lesion is necessary or not is uncertain.

Inoubation period.—This appears to vary from a few hours to a year, the most usual period being four to seven

davs.

Latency.—Long periods of freedom from any manifesta-tion are a striking feature of chronic glanders. In Hallopeau's case there was an intermission of three years, while Babés 10 mentions the case of a groom who caught the disease from glandered horses, apparently recovered, and lived for five years to all appearances quite cured in a region where there were no horses but only oxen. At the end of this time he developed multiple refractory abscesses and signs in the lungs, dying a year later. Bacillus mallei was found at the necropsy. Von Baracz 11 also mentions a case with five years' freedom from symptoms.

Variety of manifestations.—This variety is marked in the initial stages, and continues throughout the course of the disease. Typhoid fever, septicæmia, pneumonia, and rheumatism are a few only of the diagnoses which have been made at the onset; the initial rash when present has most often been mistaken for that of small-pox. The later manifestations simulate nearly all those of syphilis and tubercle, from gummata to osteo-myelitis and meningitis. 12

Duration of the disease. - It is difficult to give the average duration, but a considerable proportion of cases die within four months. There are, however, numerous instances where the patient has lived for two or three years, while there are we recorded cases of six and one of 15 years' duration. 12

Prognosis.—It has been estimated that about 60 per cent. of the chronic cases recover. This figure is certainly in excess of the true one, in view of the fact that many cases are considered cured and lost sight of immediately afterwards. Seeing, however, the long periods of latency recorded, it is most likely that a certain percentage relapses. Babés 13 states that he had repeatedly recognised in the lungs of those who had dealings with horses, and who had died from other diseases, old, sometimes partially calcified, tubercles which he had been wont to attribute to tuberculosis or syphilis, but in one such case he found the B. mallei culturally, the man having died from chronic nephritis. (See also Zieler. 14)

Treatment.—Treatment of any kind has so far seemed to be of little avail. Bonomé 15 reports a case where "improvement" followed injections of mallein, while Gold records two cases which he considered were cured by mercurial inunction. Possibly some good may result from a vaccine treatment.

Both the cases reported above show very well the remarkable resemblance of chronic glanders in this form to tertiary syphilis. Clinically there was little in either of them to suggest a diagnosis other than that of syphilis, and, indeed, both of them were treated for that disease for long periods. In our own case a diagnosis was arrived at through a recollection of Mr. Tubby's case, which was shown at the Clinical Society of London in 1904. These two cases appear to represent a clinical type of the disease not previously recorded. In Mr. Tubby's case the patient had ulceration of the buccal mucous membrane for 15 months, and then developed multiple subcutaneous abscesses shortly Our own case had similar lesions for 18 before death. months before developing abscesses. Both cases show a temperature typical of chronic glanders. In Mr. Tubby's case no history of acute illness was obtained, but in ours, in common with most other cases of chronic glanders, this was present. It seems possible that this clinical type may be commoner than has been supposed, owing to the absence of other lesions, and may account for some of the cases recorded as intractable syphilis of the upper respiratory

The importance of making a correct diagnosis between a disease which is infectious and usually fatal, and a condition which is practically non-infectious, need not be emphasised.

Several cases are on record in which chronic glanders has been transmitted from man to man, the most striking instance, perhaps, being that reported by Batko, 10 where a man suffering from chronic glanders infected his wife and two children, all four dying. Note, also, the case quoted by Von Baracz, 17 of a surgeon who died from acute glanders through pricking his finger whilst operating on a suppurating knee-joint in a colleague suffering from the chronic form of the disease.

We wish to express our thanks to those gentlemen under whose care our patient has been for permission to make use of their notes.

of their notes.

Bibliography.—1. Eiliotson: Medico-Chirurgical Transactions, vol. xvi., 1830, p. 171. 2. Robins: Studies from the Royal Victoria Hospital, Montreal, vol. ii., No. 1, 1906. 3. Bernstein and Carling: Brit. Med. Jour., Feb. 6th, 1909. 4. Besnier: International Atlas of Rare Skin Diseases, xx. 5. Hallop-au: Annales de Dermatologie et de Syphilis, 1891, 3me Série, ii., p. 273. 6. Gold: Berliner Klinische Wochenschrift, Oct. 5th, 1891, p. 987. 7. McFadyean: Journal of State Medicine, London, February, 1905. 8. Zieler: Zeitschrift für Hygiene, Band xiv., 1903. 9. Idem: Centralblatt für Chirurgie, March 26th, 1904, p. 362. 10. Babés: Semaine Médicale, 1894, vol. ii., p. 451. 11. Von Baracz: Virchow's Archiv, Band clix., 1900, p. 490. 12. Tedeschi: Ibid., Band cxxx., 1892, p. 361. 13. Babés: Semaine Médicale, 1894, vol. ii., p. 451 (third case). 14. Zieler: Zeitschrift für Hygiene, Band xiv., 1903, p. 310. 15. Bonomé: Deutsche Medicinische Wochenschrift, 36-38, September, 1894. 16. Batko: Wiener Klinische Wochenscrift, 1898, p. 953. 17. Von Baracz: Virchow's Archiv, Band clix., p. 490. For a full bibliography see Clifford Allbutt's System of Medicine, vol. ii., Part I. See also Robins's Studies from the Royal Victoria Hospital, Montreal, vol. ii., No. 1, 1906.

TWO INTERESTING BILHARZIAL CONDITIONS.

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As our clinical knowledge of the widespread ramifications of bilharziosis throughout the body becomes more exact, we are beginning to recognise certain peculiar limitations of the disease in particular organs and tissues; and, as a result of this increased knowledge, our treatment has become much more radical and effective. And this, too, in cases that fermerly appeared beyond any reasonable operative interference short of actual mutilation. In this connexion I would like to record my recent experiences with two bilharzial conditions, in which the results obtained have been very satisfactory—a distinctly encouraging fact in view of our almost hopeless struggle in the treatment of the more advanced degrees of bilharziosis in other parts of urinary and intestinal tracts.

Bilharziosis appears to manifest itself very lightly outside of Egypt; for a recent writer states that in a long experience of the disease in Natal he has never seen a fatal case. Egypt, on the contrary, the disease appears to attain the highest level of pathological activity; and the records of Kasr-el-Ainy Hospital, prepared by Dr. H. B. Day, show that, of a total of 3400 admissions for medical and surgical diseases, in 1907, there were 158 cases of bilbarziosis; and, of this number, 50 cases were unrelieved and 23 died, a mortality of over 14 per cent.; while, in 1908, of 4003 admissions, 281 were cases of bilharziosis, of whom 45 were unrelieved and 25 died, a mortality of almost 9 per cent. Taking the two years together there was thus a certain mortality of 10 per cent. But this does not nearly represent the true death-rate, as many patients are taken out by their friends in a moribund condition, so great is the native prejudice against dying in hospital. Nor does the number of admissions give much idea of the frequency of the disease, as many cases are treated as out-patients, being either in the early stage of the malady or unable to find room in the wards. Last year, notwithstanding, 7 per cent. of the total admissions for medical and surgical diseases were bilharziosis.

The two conditions to which I wish to refer are: (a) bilharziosis of the penis; and (b) what was to me a new manifestation of the disease, bilharziosis of the anus and surrounding tissues.

BILHARZIOSIS OF THE PENIS.

By far the greater number of cases of bilharziosis of the penis are associated with bilharziosis of the urethra, with or without urethral fistulæ; but there are certain examples of what may be called primary bilharziosis of this organ, to which attention will first be directed.

1. Bilharzial deposits in the erectile and subcutaneous tissues of the penis. - In certain cases there may be "a deposit of bilharzial tissue, in the form of a hard lump, in the corpus spongiosum or even in the corpora cavernosa, which can sometimes be completely removed by operation and which are then seen to have no connexion with the urethral canal." It is only the presence of bilharziosis in other parts of the body and the microscopical examination of the specimen that enable one to make a positive diagnosis. These masses produce no symptoms other than those of inconvenience, and in time tend to soften and reach the skin or urethra. times, again, an external sinus leads down to a hard mass of similar characters, but without any urethral communication. Similar lumps may be found immediately beneath the skin of the penis, usually on the under surface, and may be removed in the same way. These subcutaneous deposits may occur in other situations, particularly in the region of the perineum and anus, and ultimately may develop into typical bilharzial sinuses or give rise to a slowly spreading irregular ulcera-tion; but I have never seen this ulceration occur on the penis, except on the glans, where, sometimes as a result of infiltra-tion of this part, there are shallow worm-eaten areas or numerous small patches of atrophic scarring. When a more definite ulceration does occur either in the glans or at the meatus it appears to remain quiescent for some time and then suddenly to take on an epitheliomatous growth.

2. Bilharziosis of the glans penis and prepuce.—A peculiar bulbous condition of the end of the penis is sometimes met with, in which the whole severity of the disease seems to vent itself on the glans, the prepuce, and the first inch or two of the urethra. The surface of the glans is dry and pitted or patchily covered with shallow atrophic scars; while, from bilharzial infiltration and obstructed lymphatic circulation, the substance of the glans becomes swollen and hard and merges into a similarly hard swollen prepuce, which forms a very distinct collar of solid ædema, sharply separated by a deep furrow from the body of the penis. This furrow is usually in the site of the circumcision scar. As a result of the solid swelling all round it, and, also, of a bilharzial deposit in the mucous membrane of the urethra, the external meatus becomes very much constricted and there is considerable difficulty in introducing even the smallest sound. The actual orifice of the urethra may be eccentrically placed, owing to the scarring around it and the involvement of the frænum of the prepuce in the solid cedematous change. Once the sound has passed the constricted portion of the urethra it goes on into the bladder without further difficulty. There is frequently a discharge from the meatus in these cases which may be mistaken for gonorrhea, the swelling of the glans and prepuce being ascribed to an accompanying inflammation of these structures. In these localised cases there are usually no fistulous tracks and only a very limited extent of urethral infiltration. This latter statement was proved in a particular case, as a partial amputation of the penis was performed, in our ignorance, and, to the naked eye at all events, the mucous membrane in the stump was quite normal. Hitherto in such cases a partial amputation has been practised, but in future I should certainly attempt the removal of the swollen prepuce only, as will be described later, at the same time adopting the necessary measures for the effective treatment of the meatal stricture. These milder degrees of bilharziosis of the penis occur almost entirely in boys, which makes it even more imperative to adopt

conservative measures if possible.

Of the more definitely secondary conditions the most common is—

3. Bitharziosis of the glans, prepuce, and body of the penis.—
In these cases, in addition to the lesions just described, the skin and subcutaneous tissues of the body of the penis are also involved. Behind the deep furrow at the circumcision scar the penis may be swollen to almost any extent, with the same peculiar solid cedema, which often only extends to the root of the organ, being here limited by another deep furrow. Cases of this kind are frequently associated with bilharziosis of the urethra, but not all of them, and running through the swollen tissues are numerous urinary fistulæ. In one case of this nature there are several penile fistulæ, communicating with the anterior

portion of the urethra. Such fistulæ are generally found on the under surface and open into the urethra at the posterior margin of the glans. In this particular case there is also a peculiar silkiness of the skin of a somewhat enlarged scrotum from partial lymphatic obstruction at its neck. This appearance is not uncommon in this condition. In more advanced cases the urethra is much more extensively affected and numerous fistulæ run irregularly through a mass of false elephantiasis tissue, which not only involves the penis and its coverings but extends to the scrotum and perineum and surrounding parts. In a case of this kind the fistulæ open mainly into the perineal portion of the urethra and less frequently into the penile part. In fact, the clinical picture is rather that of bilharzial urinary fistula than that of bilharziosis of the penis. The testicles are usually quite unaffected, though long tracks may run in the soft tissues of the scrotum and perineum in all directions.

Treatment.—In my earlier cases it was my practice to amputate the penis behind the mass, if possible, and to send the more advanced cases out as inoperable. I am now convinced that in most cases these mutilations are quite unjustified unless an epitheliomatous condition exists, and I now proceed to dissect out the body of the penis from its enveloping sheath of swollen tissues. The operation is similar to that practised for elephantiasis of the penis and consists in a free dorsal incision extending from beyond the limits of the swelling above to the posterior margin of the glans below. The incision is deepened till the loose connective-tissue space between the subcutaneous tissues and corpora cavernosa is opened up. Working in this space laterally in both directions, with a catheter in the urethra as a guide, the whole of the swollen tissue is completely removed, leaving only the glans and the erectile tissue. Fistulous tracks, if they exist, are cut off flush with the urethra, their opening into which is thoroughly scraped. The large raw surface is dressed for the first few days with protective and later with red lotion. When granulation has commenced, skin grafting by Thiersch's method is practised and the new skin sheath rapidly forms. The glans gradually becomes smaller and the fistulæ slowly heal. Even in the localised form of the disease the ring of swollen prepuce may be dissected off and the surface subsequently grafted and an attempt made to dilate the strictured meatus by incision and subsequent dilatation. Any fistulæ are treated as may be necessary. Î wish particularly to advocate this conservative treatment in these cases, and to record my satisfaction of the results obtained by its adoption. The number of cases so far is small—the condition is not a common one; but if such cases as we have had can be treated successfully in this way it would indeed be a remarkably advanced one that could not.

4. Bilharziosis of the glans penis ending in epithelioma.—As has been already incidentally mentioned, a bilharzial infiltration of the glans penis may give rise to a superficial ulceration. This in time progresses by easy stages until it becomes definitely malignant. Here there is usually an extensive infiltration of the urethra with bilharzia, and in a comparatively short time a rapidly spreading epithelioma develops, with secondary glands in the groins and all the ordinary concomitants. Kartulis has published cases of this nature in which he has found many ova among the epithelial downgrowth. Naturally nothing short of a very prompt and cadical operation is possible in these circumstances.

BILHARZIOSIS OF THE ANUS AND SURROUNDING TISSUES.

I have recently had two cases under treatment at the same time of the above condition, another unusual phase of this many-sided disease and one which is quite new to me; they are the only ones I have seen. The patients were both prematurely old men with a long history of bilharzia in the urinary tract, but without any symptoms of intestinal infection. The urinary signs gradually disappeared and gave place to those of prolapse of the rectum, which preceded by some time any actual tumour. Constant tenesmus with difficult and painful defecation were now the principal symptoms, and a good deal of muco-purulent discharge came away with and after the motions. One patient complained of occasional bleeding, but it was not at all a prominent symptom. On examination a hard localised mass was found completely encircling the anus and involving the mucous surface well above the sphincter muscle. No bilharzial papillomata could be felt or seen, and the mucous membrane was perfectly smooth and

not ulcerated. Laterally the mass extended well out on each side into the ischio-rectal fossæ, but could be freely moved in all directions with the anus as its fixed point. On closer examination the lump was seen to consist of much thickened epithelium, in which were deep tracks running for some distance irregularly into the tumour, but having no communication with the rectum. The white sodden epithelium around the orifices of these pits, and the thick, dirty sebaceous-like discharge exuding from them made one think they were sinuses; but on subsequent dis-section it was quite evident that these pits were simply formed by an infolding of a normal, though thickened, epithelium and that nowhere did they communicate with each other or with the rectum. In the midst of the mass was the distorted opening of the anus, resembling somewhat the urethral orifice in the much elongated prepuce of a case of elephantiasis of the penis and scrotum. The tumour itself was very hard but gave no impression of malignancy, nor were there any enlarged glands in the groins. The provisional diagnosis of bilharziosis was made on the presence of the disease in other parts and the resemblance of the growth to somewhat similar appearances of bilharzial papillomatous-like masses about the female genitals.

Under stovaine anæsthesia the mass was completely removed by a circular incision well beyond its limits all round, and finally cutting across the rectum above the growth. The cut edges of the gut were then sutured all round to the surrounding fat, in the hope that contraction would occur later and assist in the formation of a sphincter. No attempt was made to close the rest of the raw surface, and after some weeks it had become firm scar tissue around a much smaller rectal orifice, and both patients regained practically perfect control over their motions.

The mass on section displayed the nature of the epitheliallined sinuses very well, and for the most part consisted of a much hypertrophied and redundant epithelial covering and a dense fibrous bilharzial tissue. The absence of fistulæ and ulceration on the mucous membrane was remarkable, in striking contrast to the chronic bilbarrial ulceration in this situation which in other cases not infrequently ends in epithelioma. The absence, too, of any naked-eye bilharzial infiltration of the rectum is another interesting feature.

A CASE OF LATE RICKETS (?) IN A PREVIOUSLY HEALTHY CHILD AGED THIRTEEN YEARS.

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IN THE LANCET of Nov. 10th, 1906, there appeared a report of an address on Adolescent Rickets, given by Mr. H. H. Clutton to the Clinical Society of London. He quoted at some length a typical case, the photographs of which show striking deformity. As a result of his observations, Mr. Clutton concluded that this somewhat rare disease must be regarded as pathologically identical with infantile rickets; and, so far as I can gather, this appears to be the most generally accepted view to-day. The following case, occurring in my own practice, I venture to publish as being of interest in connexion with this subject.

The patient, a girl, was just under 14 years of age when she first came under my care. Her parents gave me the following history. Until the age of 13 years the child had been remarkably healthy. She had helped her father in the fields—he was a small farmer-and had distinguished herself in games at school, winning several prizes for running and jumping; but with the beginning of menstrual life there had come a change. The girl, though not apparently suffering in her general health, began to have difficulty in walking, and it was noticed that her legs, especially the right, were beginning to bend outwards. She was taken to a "bone-setter." This gentleman declared, after the manner of his kind, that both hips were "out," and he proceeded forthwith to in." So powerful is imagination. out them So powerful is imagination backed by faith that the parents avowed the child was better for some weeks after these manipulations. However this may be, they presently

took her again, and were now told to go and get "irons." Irons were accordingly obtained and the patient wore them for some months. In the meantime the deformity continued to increase and the apparatus became so painful that it had to be discarded. It was at this stage that I was called in.

Physical examination showed that there was some measure of justification for the bone-setter's diagnosis. The patient walked with a peculiar waddling gait, which closely simulated that of double congenital dislocation, and there was slight lordosis present. Nevertheless, a careful examination of the joints, combined with the history of the case, convinced me that there was not, and never had been, any dislocation. The legs were markedly bowed, the thighs curving out from the pelvis to such an extent that when the child stood with heels together and toes at an angle of 45° there was a gap of six inches between the knees. The right tibia bulged outwards suddenly as it neared the ankle-joint; the left was fairly straight. The pelvis appeared normal. There was slight left dorsal scoliosis, compensated by right lumbar divergence, and the girl was round-shouldered. The parents declared that her back, like her legs, had for 13 years been perfectly straight. For the rest, the patient seemed to be in fair health and spirits, possessed of a good appetite, and free from digestive disturbances. The leg and thigh muscles were well developed and powerful. There was no tenderness in the pelvis, lower limbs, or elsewhere.

Menstruation seemed normal; the urine presented no peculiarities; pyrexia was absent. Examination of the thyroid region revealed nothing. Apart from the spinal curvature, which, as above mentioned, was stated to be recent, there was nothing to suggest that the child had ever suffered from infantile rickets-no beading of ribs, enlargement of radial epiphyses, or pigeon chest. Nor could I obtain a history of any of the symptoms of early rickets. Measles and chicken-pox formed the sum-total of her previous ailments.

Treatment.—As iron supports had been tried and found wanting, I ordered the patient to rest for six months. The mischief done by gravity might, I hoped, be overcome by a steady force in an opposite direction, and I therefore had a special apparatus constructed by an instrument maker. The patient lay on a hair mattress. Above the waist she was made as comfortable as possible with cushions, but from the buttocks downwards her body rested on a narrow platform of boards about 3 feet long by 18 inches wide. This was furnished with a perpendicular foot-piece to which the feet were strapped, heels together (with a pad between to prevent soreness), the toes spreading to an angle of about 45°. Around the waist was fitted a belt resembling a portion of a corset; from this a strip of canvas 2 inches wide was passed down on the outer side of each leg to be attached to the foot-piece below. Six bands, 2½ inches wide, consisting partly of canvas and partly of elastic webbing, and furnished with straps and buckles, were passed round both limbs at regular intervals from the thighs to the feet. They were held in position by passing through loops stitched to the side pieces, and it was possible by tightening the straps to exercise a graduated pressure in the direction of approximating the bowed members. In order to prevent the patient from easing the strain by raising her knees the legs were bound down to the wooden platform. The apparatus, as might have been expected, produced a certain amount of cramp, but she was able to bear it quite 16 hours out of the 24.

Meanwhile the patient was given cod-liver oil, phosphorus, and virol; later she had the iodide of iron, and finally thyroid extract. Altogether, I treated her for nine months, two-thirds of which time she lay on her back. The results were disappointing. By the end of six months the legs had grown half an inch in length, and the knees came one and three-quarter inches nearer together; but it is questionable whether this slight improvement was due to anything other than the weight being taken off them. At any rate, an attempt to resume walking produced a rapid recurrence. All I could suggest now was a double osteotomy, followed by at least a year on a couch. Her people demurred to this, however, and I did not press them. Shortly afterwards they left the neighbourhood and I lost sight of the case.

To my mind the relationship between such cases as the above and infantile rickets appears more than doubtful. The rickets of early childhood is now generally admitted to be a disease of nutrition, and is readily amenable to suitable Journal, 1888, p. 357.

dietetic measures. That this girl, the daughter of well-to-do country people, suffered from improper feeding is hardly probable. Mr. Clutton's patient was likewise of respectable parentage. I note, too, in his account the same absence of early rachitic history, the same resistance to treatment. Is it not better to admit frankly that we do not know the etiology of the affection? The most we can say is that the disease appears to be connected with the development of the sexual functions; and that, as in the case of those bony and arthritic lesions which occur during pregnancy and the menopause, it may be in some obscure way associated with changes in the internal secretions of the generative glands.

Cockton Hill, Bishop Auckland.

A CALCIFIED LEFT OVARIAN DERMOID. SEPARATED FROM ITS PEDICLE. TRANSPLANTED

ON TO THE RIGHT BROAD LIGAMENT AND VESICAL PERI-TONEUM; REMOVAL ON THE TENTH DAY OF THE PUERPERIUM FROM A 12-PARA.

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INSTANCES of transplanted ovarian tumours were more often recorded by the early ovariotomists when operative measures were not readily undertaken and long-standing cases more frequently came under notice. Sir Spencer Wells refers to a case described by Dr. Atlee, who found a dermoid tumour post mortem in a woman aged 79 years. The presence of a tumour had been recognised 47 years before by Dr. Atlee's uncle. There was no pedicle, and the tumour was dependent upon adhesions for its vascular supply. Sir Spencer Wells himself operated upon a case where the tumour had been present 18 years. During that time the patient had married and had had three children, the tumour lessening with the progress of each pregnancy. There was no pedicle, the blood-supply having been kept up through the vessels of adhering omentum and mesentery. The patient was pregnant at the time and was delivered of a living child seven months after. Mr. Alban Doran 2 described a case he witnessed which was operated upon by Mr. Knowsley Thornton in 1881. A woman, aged 34 years, had for seven years presented symptoms of an abdominal tumour, and in the interval had given birth to four children. A spherical dermoid cyst of the size of a cricket-ball was removed. It was entirely detached from its pedicle and adherent to the omentum. The right ovary was cystic and was removed. The left Fallopian tube was obstructed and slightly dilated; close to it in the site of the ovarian ligament lay a short firm tag of fatty and partly calcareous tissue. In a paper on Twisted Pedicles Mr. Knowsley Thornton mentioned four instances of ovarian dermoids where the pedicle had completely separated.

Transplantation of ovarian tumours is probably usually preceded by torsion and gradual attenuation of the pedicle. As torsion occurs more frequently during pregnancy and the puerperium it is not remarkable that most of the recorded cases have occurred in multiparæ. The length of the pedicle and amount of play allowed are important factors, any drag after the twist has started being sufficient to cause the pedicle to give way. The tumour, usually an aseptic foreign body, transplants itself on to the nearest omentum or intestine. When sudden torsion takes place acute symptoms immediately arise resembling those of intestinal obstruction, and rupture of the tumour from hæmorrhage into its cavity or necrosis or suppuration may occur. If the twist is gradual there may be little to mark the event. Congestion of the tumour may be followed by atrophy. The nutrition is impaired, but adhesions may gradually form and augment the blood-supply. Fibrosis and calcification may follow.

The atropied pedicle may rupture, and if the tumour is free it may find a new resting place in the abdominal cavity, plastic adhesions forming between it and the peritoneum, and providing a new blood-supply.

Spencer Wells: Ovarian and Uterine Tumours, p. 60, 1882.
 Doran: Tumours of the Ovary, London, 1884, p. 118.
 Knowsley Thornton: Rotation of Ovarian Tumours, International

The following case is that of a woman, aged 40 years, and married 22 years, who was sent up to the Stanley Hospital by Dr. Gertrude M. Hutton as a case of pregnancy complicated by a tumour. The patient stated that she had married at 18 years and had had 11 children. Her first child was born without difficulty at seven months in 1887, her health during pregnancy having been good. She had a quick confinement and was attended by a medical man. In 1890, when four months pregnant, an attack of inflammation occurred, and the medical man who attended her thought she had a displacement. In 1891 a seven months' child was born after very bad health during pregnancy. With the fourth she was better, but severe "inflammation" occurred after the fifth, sixth, seventh, and eighth confinements, when she was attended by midwives. During the ninth pregnancy fainting attacks occurred, coming on generally when she was on her hands and knees scrubbing. With the tenth child she had the same poor health and trouble with micturition. In 1906, after the eleventh confinement, she recovered strength very slowly, and the periods were absent 14 months. On June 10th, 1908, amenorrhœa began and lasted until Sept. 4th, when hæmorrhage occurred, lasting until the end of the month. The patient then noticed that the pain, which hitherto had been on the left side, now occurred on the right side and in separate attacks. A short time later she became aware of the presence of a tumour on the right side. On this account she sought advice in November at the Dispensary for Women, and was sent on to the Stanley Hospital the same week. The patient was then about five months pregnant. A hard mass of the size of a feetal head could be seen and felt in the right iliac fossa. Though not very moveable it could be pushed down partly into the pelvis and did not appear to be in close connexion with the enlarged nterus. Pressure caused severe pain. The diagnosis was uncertain, but the situation and consistency were rather in favour of a subperitoneal fibroid.

As the pain increased the patient was admitted on Jan. 3rd, when seven months pregnant. The temperature and the pulse were normal. The swelling was very obvious and gave the abdomen the appearance of a transverse presentation. After a few days' rest in bed the pain subsided and the patient was sent home with instructions to come up at the This she did on Feb. 1st. The house onset of labour. surgeon, Mr. M. Greer, reported that it was a posterior wertex presentation. Labour was unusually prolonged, although it was an eight months child, and the head showed considerable moulding. There was no excessive post-partum hæmorrhage. A hard mass could still be felt in the abdomen in front of, and quite distinct from, the uterus. The question of ovarian tumour was considered. The child showed little vitality and died in 24 On the third day the patient's temperature ran up to 102° F., but quickly fell to normal. As the patient went on well and the uterus involuted I did not operate until Feb. 13th. The omentum was spread out over a tumour of the size of a feetal head extending from the right iliac fossa towards the pelvis. On dividing the omentum deeper adhesions were apparent between the tumour, the vermiform appendix, and the right tube. The tumour was fixed by a broad base on to the anterior surface of the right broad ligament and peritoneal surface of the bladder. adhesions were ligatured and divided. A large aperture in the right broad ligament was closed with a continuous catgut suture. A stump consisting of about three-quarters of an inch of the left tube remained attached to the uterus, the free end impervious. A scar indicated the former position of the left ovary, the infundibulo-pelvic ligament, and the ovarian ligament. The right tube and ovary were normal. The patient made a good recovery and left the hospital on the twelfth day after operation. She now looks well and is free from pain.

The tumour measures three and a half inches in diameter and is, roughly, circular in shape. Adhering to its surface can be seen the remains of omental and peritoneal adhesions. Microscopically, sections show the lining to be of squamous epithelium. The wall is densely fibrous, with areas of calcification. The contents resemble mortar, mixed with hair and oil.

In this case there is no history of acute symptoms to mark sudden axial rotation of the tumour. The pedicle may have begun to twist during the early months of the second pregnancy, for there is abundant evidence in the tumour that its blood-supply has been deficient for many

years. Had it then become fixed in its final situation it could hardly have escaped the attention of medical men, midwives, or the patient herself for so many years. Complete separation probably took place in the third month of the last pregnancy, when, after hæmorrhage for some weeks, the pain changed its locality and the tumour was first noticed. It was now in a situation to cause a certain amount of obstruction and it is interesting that this was the only lingering confinement.

Abortion is believed to be common in cases of pregnancy associated with ovarian tumours, and this patient had several premature births. It is somewhat remarkable that in spite of the alleged mortality of 25 per cent. of untreated cases of ovarian tumour complicating pregnancy this patient escaped with her life through 12 confinements in 20 years. The expectant treatment of this case was based on a diagnosis of subperitoneal fibroid, and the patient was admitted to hospital with a view to operative treatment should serious obstruction to delivery occur. Had a diagnosis of ovarian tumour been made its removal during pregnancy would have been a matter of great difficulty on account of the very extensive adhesions.

Liverpool.

A CASE OF OBLITERATIVE ARTERITIS.

BY R. ALLAN BENNETT, M.B. LOND., HONORARY MEDICAL OFFICER IN CHARGE OF ELECTRICAL DEPARTMENT TORBAY HOSPITAL, TORQUAY.

THE patient in this case is a woman, aged 52 years, who until 11 years ago had enjoyed fair general health. In October, 1898, she was seized, while resting quietly, by a sudden attack of pain over the heart, which lasted for some hours and departed as quickly as it came, leaving a sense of illness which has continued more or less ever since. The note of her previous history reads as follows: "Measles at 10 years. Nervous breakdown at 20. Was refused for insurance at 23. Miscarriage 7 years after marriage, and again 13 years later; slow recovery on both occasions." The family history was unimportant. As the patient describes it, she became conscious that she possessed a heart and blood-vessels, and only at rare intervals has she been free from the sensation. The feeling was most marked at night when she was quiet in bed, and she would lie, at one time listening to the heart beating loud and rapidly and to the blood coursing with a sense of power through her carotids, and at another, hearing it as though it were an exhausted clock, watching for every lingering pulsation, and wondering how many more there would be for her to count. Apart from the listlessness which accompanied the sensation of bodily illness, there was almost constantly a certain amount of pain, or at least discomfort, in the right arm, which could always be increased by slight exertion, and amounted sometimes to a degree beyond which the patient felt she could not go. With this there was a feeling of lifelessness and cold in the limb, and the skin over the back of the hand was often discoloured in a patchy manner, more especially when the pain in the limb reached its height. During the 11 years the disease had lasted there have been on several occasions acute attacks of illness, when the somewhat indefinite symptoms described have all been accentuated, and when pain in the chest (localised over the sternum and not spreading over the arm) has been constant and severe. During these periods the patient rested—now entirely and now in part, and always with the greatest benefit to herself. The pain and weakness experienced in the right arm have been felt, though to a less degree, in the right leg; the foot on this side is generally cold, and there is often a sense of insecurity when walking or even when standing quiet.

When first seen the patient looked ill and said that she was incapable of any exertion at all. The least movement brought on pain over the front of the chest and shortness of breath, and the right arm and hand became cold and livid, patches of bluish discolouration extending from the back of the hand up the arm. There was strong visible pulsation in the carotids, more marked on the right side, where the finger could feel a rough systolic purring thrill, which was absent on the left. On the left side, from a point below the

⁴ McKerron: Pregnancy, Labour, and Childbed with Ovarian Tumour, 1903. London.

middle of the clavicle, outwards a distance of 11 inches, there was visible pulsation, and the impression conveyed to the finger was that of a kinked vessel, which each systole attempted to straighten out. There was here also a systolic thrill, but softer and less insistent than that felt over the right carotid.

The cardiac dulness extended (a) upwards to the second space; (b) to the left, half an inch exterior to the nipple; and (o) to the right, a quarter of an inch beyond the right sternal margin and up to the third space. The apex beat was in the fifth space, half an inch external to the nipple line. On auscultation, the second sound over the apex was somewhat flapping in character, and the first was obscured by a rough murmur, which increased in intensity as it was traced up along the right edge of the sternum, until it attained its maximum strength just below the sternoclavicular joint. From this point it could be followed outwards along the lower edge of the clavicle, until at the junction of the outer and middle thirds of the bone it ceased abruptly. It could be followed upwards along the course of the carotid as high as the ear with very little loss of intensity. The murmur was rough and scraping and gave one the idea of considerable obstruction, with difficulty overcome. A fainter systolic murmur could be heard over the pulsating area below the left clavicle, audible also over the lower part of the left carotid, but it gave the impression of recency. It could be congave the impression of recency. It could be considerably increased by firm pressure with the stethoscope. The radial pulse on the right side could scarcely be felt and was delayed in time as compared with the other side. The artery appeared normal to the touch: the pulsation was no stronger in the axillary and the accessible portion of the subclavian than in the radial artery, and was delayed in time as compared with the other side. The blood pressure, measured by Riva Rocci's instrument, was 180 millimetres in the left radial and 130 in the right. On auscultation over the abdominal aorta a rough purring systolic murmur could be heard along its whole extent, and again from its bifurcation, on each side, over the course of the common iliac and external iliac into the femoral, where it was lost, disappearing at the apex of Scarpa's triangle. This murmur was louder in the right external iliac and femoral arteries than on the other side. In the right femoral artery the pulse was much weaker than in the left, and in the anterior tibial artery it could not be felt at all. The foot felt cold to the patient, though warm to the touch. It was not livid, and there was no pain in it or in any part of

The subsequent history shows slow improvement. patient rested entirely in bed for 3 months, and for 2 months more she only walked across the room to the couch, remaining there for the rest of the day. The pains in the chest have disappeared, but there is very frequent discomfort in the right arm and hand, amounting at times to severe burning pain. This is generally noticeable after exertion, but it may come on when the patient has been resting quietly. The same may be said of the variability of the pulse; sometimes, as on first examination, it can scarcely be felt, while at other times it is almost as strong as on the other side. The systolic murmur on the right side also varies in intensity and character, being at one time much more intense and powerful than at others; no relation, however, can be traced between the variations in the murmur and the pulse.

The pulsation in the area below the left clavicle at one time appeared to be growing more marked, and certainly the visible area was increased, pulsation being apparent to the eye also over a small area above the middle of the clavicle. The systolic murmur in this region became soft and blowing and gave the impression that some acute process was going on in the vessels where it arose, but these changes gradually died away until the condition now on the left side is much as it was when the patient was first seen. On examination with the X rays the screen showed plainly a marked uniform dilatation of the ascending arch of the aorta, but there was no sign of aneurysm. The urine was normal, about 60 ounces being the average daily excretion.

In giving a name to this condition none would appear more appropriate than "arteritis obliterans" had not this term, as far as my available literature goes, always been applied to disease of the smaller and medium-sized vessels only. Thus the originator of the name, Carl Friedländer, defines obliterative arteritis as a disease of the small and medium arteries,

characterised by a growth of connective tissue in the intima, and tending to gradual narrowing and eventual obliteration of the lumen; he says of this growth that it may remain for long as granulation tissue, or it may be transformed into firm fibrous tissue, which may completely obliterate the vessel; the tissue may contain relatively few cells, and it is noteworthy that fatty and calcareous degeneration seldom occur. Friedlander points out the analogy with the changes in the ductus arteriosus and the umbilical arteries, these changes being due, not to thrombosis, but to proliferation in the arterial walls; and he instances as examples of the same transformation the changes which occur in the lungs in phthisis, and also in fibroid tumours, sarcoma, elephantiasis, and cancer; where, however, thrombosis plays an equal or larger part in the process of obliteration.

The cases referred to by Pearce Gould, Spencer, Michels, and Parkes Weber, all appear to refer only to the disease as it affects the smaller vessels and emphasise the fact that it begins in the peripheral arteries and extends back-On the other hand, three cases described by wards. Hogerstedt and Nemser bear very close resemblance to the present one. In this communication the authors lay stress on the fact that the blocking of the larger arterial trunks may lead to little or no peripheral disturbance, and they instance the case reported by Mr. James Lane, where the patient suffered fracture of both collar bones and complete compression thrombosis of the right subclavian, the only peripheral effect being anæsthesia of the right little finger. They are inclined to attribute the condition in part to an endarteritis and in part to a slow thrombosis, and they draw attention to a combination of predisposing circumstances in a case reported by Heubner, where the patient, a blacksmith by trade, presented signs of complete occlusion of the right subclavian. In this case there were: (1) advanced arteriosclerosis; (2) a history of syphilis; and (3) laborious occupation. At the same time they do not lay it down that syphilis played the sole or even the chief part in the production of the disease, leaving it a doubtful question whether the endarteritis was a specific one or whether it merely arose in a person with the general constitutional taint. Hogerstedt and Nemser in speaking of the etiology of stenosis of the larger vessels springing from the aortic arch say: 1. Embolism has not been observed. 2. Sudden crushing or tearing of the vessels—e.g., in double clavicular fractures—is extremely rare. 3. The vessels may be constricted by the growth of mediastinal tumours (aneurysm most common) or by inflammatory processes. Aneurysm may also lead to occlusion of the lumen by extension of thrombosis or to distortion of the lumen by irregular alteration in the shape of the arterial arch. Much more frequent is thrombosis of the orifices of the vessels themselves; a condition rendered more likely by the presence of arterio-sclerosis, which generally occurs after the fortieth year of life, and when the disease in the aorta has gone as far as atheromatous degeneration. They point out that the subclavians are more liable to be attacked owing to the greater call made upon the circulation in the upper extremities.

I think that the condition present in this case is sufficiently rare to make its publication interesting. With the exception of the three examples described by Hogerstedt and Nemser, I can find no clear record of idiopathic stenosis of the great vessels springing from the aortic arch, and there seems to be little doubt that this is the state of things here. The patient has probably suffered from extensive disease of the arch, which has gradually involved, certainly the innominate artery, and probably the left subclavian as well. The carotids on both sides appear to be healthy, the loud murmur heard on the right side being simply conducted along the vessel. The signs in the left subclavian suggest the presence of acute disease, and whether this is to be followed by thrombosis with consequent narrowing of the vessel's lumen and a repetition in the left arm of the conditions obtaining in the right remains to be seen. The abdominal aorta, the external iliacs, and the femorals all appear to be affected by the disease and in the right femoral the disease appears more advanced than in the left. Signs already described as existing in the right leg can be explained by a diminution of the lumen of its main artery, and in all probability there is here a condition similar to that present in the right subclavian. There is not that variability in the pulse of the leg which is so noteworthy in the arm. I have never been able to satisfy

myself that there was any pulsation at all in the right dorsalis pedis.

With regard to treatment there is not much to be said: rest and potassium iodide in increasing doses appear to be doing a considerable amount of good, but it is an open question whether the improvement will continue when the patient resumes a more active life and moves about again.

References.—Carl Friedländer: Centralblatt für die Medicinischen Wissenschaften, Jan. 22nd, 1876. Hogerstedt and Nemser: Über die Krankhafte Verengerung grosser Arterien, Zeitschrift für Klinische Medicin, 1897. Thoma: Virchow's Archiv, 1879, vol. 1xxi., p. 227. Pearce Gould: Clinical Society's Transactions, vol. xvii. W. B. Hadder: Ibid. W. G. Spencer: The Lancett, vol. i., 1838, p. 227. Bryant: The Lancett, 1896, vol. 1., p. 1486. Bond: The Lancett, 1896, vol. i., p. 150. R. Michels and Parkes Weber: The Lancett, 1903, vol. ii., p. 399. Pearce Gould: Lettsomian Lecture II., 1906, Brit. Med. Jour., vol. i., p. 762. Obliteration of Innominate Artery, Brit. Med. Jour., 1902, vol. ii., p. 1770.

Torquay.

THE IMPORTANCE OF THE EARLY RECOGNITION OF TUBERCULOUS MEDIASTINAL GLANDS IN CHILDREN.

BY JOHN ALLAN, M.D. EDIN., D.P.H.

In the study of latent pulmonary tuberculosis in children we are confronted with a difficult problem, and many points have to be carefully considered in our endeavours to deal correctly with it. On examining the subject the question naturally arises, "Should tuberculosis of the bronchial or mediastinal glands be included under the term pulmonary " I think there is no doubt that it should be, because in many instances the glands are primarily affected, the lung condition being secondary, but the difficulty is how is it to be diagnosed. In many instances the diagnosis of tuberculous mediastinal glands is purely hypothetical, but post-mortem evidence indicates that the condition is by no means uncommon, and that it may occur in children in whom it was not even suspected. Dr. Theodore Shennan 1 at the International Congress on Tuberculosis at Washington last year gave an interesting analysis of 1085 postmortem examinations which had been carried out at the Edinburgh Royal Hospital for Sick Children during the last 21 years. 421 of these, or 38 8 per cent., were on children who had died from tuberculosis. He found that tuberculosis of the mediastinal glands was commonly unaccompanied by primary tuberculosis of the lungs, but was frequently accompanied by recent tuberculosis of these organs, in many cases secondary to gland tuberculosis. It is important, therefore, that every endeavour should be made to diagnose this condition, so that by appropriate treatment the progress of the disease might be checked or cured. Dr. C. Leroux² believes that chronic pulmonary tuberculosis in children has two modes of origin: (1) glandular, which begins clinically in the tracheo-bronchial glands and after a longer or shorter time reaches the apex of the lung; and (2) pulmonary, which begins first in the apex of the lung and is accompanied secondarily by disease in the glands. The former generally occurs in young children under 10 years of age, while the latter is most common between the ages of 12 and 15. One should therefore make every effort to diagnose glandular infection, as in view of the long truce which exists before the gland affection reaches the lung and the energetic defence which in young children is opposed to its extension there is every chance of the disease being eradicated by suitable treatment. Gland affection should be especially looked for in children at or shortly after the commencement of their school life. The question at the present time becomes all the more urgent since, with the development of the medical inspection of school children, there will be greater opportunities for the examination of children; and it is to be hoped that any suspicious cases will be picked out and referred to the family medical attendant for fuller investigation. It seems probable that quite an appreciable percentage of the present wastage of useful lives might be prevented if these cases were early recognised.

The general symptoms of tuberculosis must be carefully analysed when we come to consider the diagnosis of tuberculous mediastinal glands, and one may expect to find the usual symptoms of wasting, anorexia, accompanied, perhaps, by irregular pyrexia. The symptoms suggestive of tuberculosis in children are legion, and unfortunately there is no symptom which can be relied on to indicate that the child is phthisical. My own experience has been that afternoon fever, shown by flushed face and tired feeling, is fairly significant of tuberculosis. In all cases of tuberculosis in children which have come under my notice, and in which there was no doubt regarding the diagnosis, this symptom was well marked. Another important symptom is anæmia. In non-tuberculous conditions in which there are symptoms suggesting tuberculosis there may be pallor, but marked anæmia in an emaciated child is, as a rule, only met with in a phthisical subject, provided, of course, the different varieties of anæmia of childhood can be excluded. Loss of weight is undoubtedly a symptom of the tuberculous, but it is also a symptom of many other conditions. To be of any use the record of the child's weight over some months must be studied, and any child suspected of being consumptive ought to be regularly weighed. A child who is being treated as tnberculous and whose weight steadily falls or even remains stationary may be regarded as in all probability the subject of phthisis. In no other chronic lung condition (except in very exceptional cases) will weight fail to increase with treatment. Night sweating, dyspepsia, anorexia, &c., are other symptoms, but all that can be said is that they may afford confirmatory evidence, and in the majority of cases they are due to conditions which are non-tuberculous.

Passing on, we come next to the symptoms and signs more especially associated with the particular variety of tuber-culosis at present under discussion. Perhaps the most valuable local symptom is the presence of a spasmodic cough. This cough consists of a number of sharp, short expiratory efforts followed by a long-drawn inspiration. The cough is very similar to that met with in whooping-cough and may easily mislead the uninitiated. A history of a previous attack of whooping-cough will tend to exclude that disease and will favour the diagnosis of enlarged bronchial glands, because a second attack of whooping-cough in the child is rare. Again, if this spasmodic cough persists after an attack of whoopingcough it is wise to suspect that its continuance may be the result of enlarged bronchial glands. The only other condition which is likely to give rise to a similar cough is bronchiectasis, but this is not often met with in children. The signs of cavity formation and the copious intermittent and feetid expectoration should be sufficient to establish a diagnosis. Except in old-standing and advanced bronchiectasis there is not the same emaciation nor anæmia that there is in tuberculosis. In early enlargement of the bronchial glands physical signs are absent, but one has only to remember that these glands are small and deeply situated in the mediastinum, and this apparent anomaly is explained. However, there may be on percussion dulness behind the manubrium sterni. This dulness, according to Dr. Robert Hutchison, sextends outwards towards the apices of the lungs and downwards towards the heart. If the enlarged gland causes constriction of the main bronchus quite a definite train of physical signs may be detected. One of the earliest signs of constriction of a main bronchus is diminution of vocal fremitus. Later the vocal resonance is impaired, the breath sounds are feeble, and the chest expansion is defective. If the pressure is sufficient to prevent the entrance of air or if one of these large tubes has been plugged by a caseous mass there is an absence of respiratory murmur over a single lobe or over an entire lung. Dr. L. Emmett Holt considers that this sign is of great diagnostic value, but it is not often present. Dr. R. A. Young, while admitting that there may be weak breathing over the whole of one lobe, mentions that even in these cases it is well to remember the functional irregularity of the diaphragmatic movement in children, which can be readily observed with the X rays, and to examine the chest on several occasions to see if the alteration is a permanent one. Grancher's sign is very variable and cannot be relied on. This is a permanent alteration of inspiration at one apex, and was considered by

See THE LANCET, Jan. 30th, 1909, p. 315.
 British Journal of Children's Diseases (Abstract), March, 1908.

Lectures on Diseases of Children.
 Diseases of Infancy and Childhood, 1905.
 Brit. Med. Jour., March 7th, 1908.

Grancher to be quite sufficient to indicate this condition. He describes three stages in this alteration-namely, weakening of inspiration, and later bronchial breathing with bronchophony. The phenomenon is essentially an asymmetry of inspiration. D'Espine ⁶ states that in the normal child bronchophony ceases at the level of the spine of the seventh cervical vertebra, while in these cases it may be heard down to the level of the fourth or fifth dorsal spine. Other two signs may be mentioned—namely, distension of the veins of the neck and Eustace Smith's bruit. The former is caused by pressure of the bronchial glands on the superior vena cava, while the bruit is heard in the veins on placing the stethoscope over the manubrium sterni. Dr. Smith points out that the bruit is best heard when the child bends back its head. The signs are generally only present when the glands are much enlarged, and it is by no means uncommon to find post mortem considerable enlargement of these glands without there having been any physical signs during life. In the opinion of Dr. Young the coexistence of several of these signs, especially if one of them be dulness in the interscapular region with a positive tuberculin reaction, renders the diagnosis highly probable.

In the investigation of any case of a child supposed to be consumptive it is most important to take into account the family history as regards tuberculosis and also the history of definite exposure to infection. It is the fashion in some quarters to ridicule the idea of heredity playing any part in the tuberculosis problem. Even if the transmission of tuberculosis from parent to child be not admitted, surely it may be said that the child of a tuberculous stock will have a predisposition to the disease. It is doubtless true that the child is infected from some other person who has phthisis, or through the medium of milk, &c.; but to exclude all possibility of hereditary taint is incorrect. Dr. T. N. Kelynack 7 evidently holds this opinion, for he writes: "While, however, the tuberculous seed is quite exceptionally transmitted from parent to child, a tuberculously disposed soil is undoubtedly inherited." If there has been phthisis in the family then the child will almost certainly be more liable in adverse circumstances to contract the disease on exposure to infection than a child whose family history sheet is unmarred by the presence of pulmonary tuberculosis. If two children of the same age were taken, the one having a family history of consumption, the other having no such history, and if these children became exposed under as nearly similar conditions as possible to infection by tubercle bacilli, then surely the child who had the increased premium of tuberculous taint on his life would be the first to contract the disease. Other things being equal, the child with a tuberculous family history requires careful medical supervision, and any suspicious symptoms in such circumstances should not be regarded too lightly.

We can make use of several diagnostic aids in the elucida-tion of the case. For instance, the subcutaneous injection of tuberculin controlled by the opsonic index estimation is a diagnostic agent of much value. Unfortunately the elaborate technique required militates against its more general employment. The ophthalmo-reaction of Calmette and von Pirquet's cutaneous reaction are useful and the general opinion is that they are reliable. The former appears to be the more reliable, but a number of cases have been placed on record where serious inflammatory mischief has occurred in the eye as a result of the application of Calmette's test. blood may be examined for eosinophile cells, which are said to be absent in early tuberculosis. Dr. R. C. Rosenberger has recently demonstrated the presence of tubercle bacilli in the blood of the tuberculous, and he believes that they appear in this medium at a very early period. An X ray examination should never be omitted. Dr. David Lawson, Dr. C. W. Cunnington, 10 and others have testified to their value, though such a high authority as Professor A. Calmette 11 believes that they reveal only old lesions. Cunnington points out that in the "right oblique" position we get an excellent view of the posterior mediastinum, which appears as a triangular light space, bounded by the heart in front and above, the aorta and spine behind, and the

diaphragm below. This area in health is clear and becomes markedly luminous on deep inspiration. When the retrocardiac glands are enlarged the space remains dark. This phenomenon occurs very often in sickly anæmic children, and we cannot be surprised when, only too often, such children ultimately fall victims to consumption. They are described as having a "tendency to consumption." The X rays tell us that in reality they already carry the germs of the disease within them. Cunnington thinks that with this diagnostic weapon a patient should no longer be labelled "Query early consumption?" and he very pertinently remarks that we must look for the answer by the light of the X rays, remembering that "coming events cast their shadows before." The chest should not only be examined by the fluorescent screen, but should also be photographed. By the former method the movement of the diaphragm and any area of shadow can be studied. By means of the photograph we obtain impressions of very small areas of disease, too small to show on screen examination.

From the above brief consideration of this important subject it will be clearly understood that the diagnosis is a matter of great difficulty, but the value of the early recognition of tuberculous bronchial glands can hardly be over-estimated. All children who are "physiologically delicate" should be suspected of being phthisical, and every method at our disposal should be employed to assist in coming to a positive decision regarding the case.

Edinburgh.

A CASE OF CARCINOMA OF THE VERMI-FORM APPENDIX.1

BY ALEX. MILLS KENNEDY, M.B., CH.B. GLASG., ASSISTANT PATHOLOGIST TO THE GLASGOW ROYAL INFIRMARY; PATHO-LOGIST TO THE GLASGOW MATERNITY AND WOMEN'S HOSPITAL.

In the routine histological examination of appendices removed at operation it is not uncommon to find the lumen narrowed or occluded by strictures the result, as a rule, of post-ulcerative cicatrisation. Sometimes these strictures are only detected when longitudinal sections of the organ are examined microscopically, there being no external evidence such as diminution of the circumference of the appendix at the seat of the occlusion; but occasionally the stricture is apparent externally by a deep constriction. Usually the appendix becomes distended beyond the stricture and various pathological changes take place therein. In the present case there is not merely a constriction but the appendix is completely divided into two segments, and in the sequestrated distal portion there is present an unmistakable carcinoma.

Carcinoma of the appendix is a condition which has been recognised for a considerable time, but as regards the earlier cases there is some doubt, owing to the want of any histological examination and also to the fact that in some it was quite possible that the disease was secondary. However, now that it is customary to have all appendices removed at operation submitted to microscopical examination, the cases reported have become more numerous and their nature has been placed beyond doubt. An excellent summary of the literature and cases on record until 1906 was given by Rolleston and Jones in their paper on Primary Malignant Disease of the Vermiform Appendix, read before the Royal Medical and Chirurgical Society in February, 1906, from which the following list of cases has been taken. The first case of malignant disease of the appendix was reported by Merling in 1838; the next case (Prus) was reported in 1865; and two years later four cases of carcinoma were reported by Rokitansky. All of these cases, however, must be considered doubtful owing to the absence of histological examinations. The next case of carcinoma was recorded in 1875 by Kolaczek, but here the tumour involved the cacum also, and it is possible that this was its primary seat. In 1880 Bierhoff reported a case, but in this instance there was tumour in the rectum and other organs, so that we cannot exclude the appendicular growth from being secondary. In 1882 the first undoubted case was recorded by Beger. In 1883 another case was reported by Maydl, but no details are given.

<sup>La Clin. Infant., March, 1907, No. 6.
Brit. Med. Jour., Sept. 21st, 1907.
American Journal of the Medical Sciences, February, 1909.
Transactions of the Edinburgh Medico-Chirurgical Society, 1903, and The Practitioner Special X Ray Number, 1906.
The Hospital, May 11th, 1907.
Brit. Med. Jour. (Epitome), Nov. 21st, 1908.</sup>

¹ Sections of the appendix were shown at the Pathological Society of Great Britain and Ireland at their meeting held at Glasgow on July 9th and 10th, 1909.

In Draper's case in 1884 the cæcum was involved, and so it also must be considered doubtful. The next case was recorded in 1896 by Stimson. In the following year 4 cases were reported, but one of these is rather doubtful. In 1898 another case (Wright's) was recorded, whilst there were reported 8 cases in 1900, 4 cases in 1901 (one of which is doubtful), 3 cases in 1902, 3 cases in 1903, 2 cases in 1904, and 4 cases in 1905, all of these being probably true primary carcinomata of the appendix. Apparently the condition has never been diagnosed before operation or postmortem examination, and this is not suprising, because in the great majority of cases the symptoms have been those only of appendicitis.

The patient from whom the present specimen was obtained is a man, 49 years of age, who until recently had enjoyed good health. The first illness occurred three years ago, when he was confined to bed for 14 days with an attack resembling influenza. In January, 1909, he was seized with a similar influenzal attack, characterised by shivering and backache. He had to go to bed, where he remained for two weeks, and, improving greatly, three weeks later he was able to resume work. But from about this time he continued to lose flesh. About three weeks before admission to hospital he was seized with a similar attack, with fever (at onset only) and vomiting. His medical attendant on this occasion suspected the appendix region, and found there was tenderness

on pressure at this place.

The patient was seen by Dr. T. K. Monro in consultation on May 4th, 1909. He had been obviously losing strength considerably; there were progressive failure of health and weakness, with considerable loss of flesh; and, taking everything into consideration, Dr. Monro came to the conclusion that these were incompatible with the condition being one of simple appendicitis. He had a suspicion that the patient was suffering from some malignant disease in the appendix region, not necessarily in the appendix because of its great rarity, but probably in the cæcum. For these reasons Dr. Monro advised his removal to hospital for observation. He was admitted to Dr. Monro's wards at the Royal Infirmary here on May 11th. On the 13th he was transferred to Mr. H. Rutherfurd's wards for exploratory operation. When

ploratory operation. When examined on the 18th by Mr. Rutherfurd before operation the only suggestion of appendicitis was the persisting tenderness in the right iliac fossa. Pain had quite gone, and there was no recognisable tumour. The abdomen was opened in the usual way. The appendix was rather bulbous and hard, adherent, running inwards and partly buried in adhesions of the small bowel and mesentery. About it, when separated, was seen some whitish material like the incompletely absorbed remains of an abscess. The appendix was cut away, and the stump was inverted in the usual way. The wound healed by primary union, and the patient was dismissed well on June 5th, and has since remained well. Mr. Rutherfurd states that at the operation there was nothing found which in any way suggested to him that there was any malignant disease present in the appendix, cæcum, or the neighbourhood.

The appendix was sent to the Pathological Department of the Glasgow Royal Infirmary for examination after it had been fixed in formalin and preserved in spirit. It was shorter and thicker than the normal, and it was completely divided, transversely about its middle, into two distinct segments, proximal and distal, which were held together only by the meso-appendix. The two segments were almost equal in length, but the proximal was slightly the longer of the two. For purposes of examination the appendix was divided in its long axis; one-half, consisting of the two segments, was

embedded in paraffin and cut into longitudinal sections. Transverse sections were also prepared from the distal segment of the other half.

Microscopical examination of longitudinal sections.—Proximal segment.—All round the appendix in the peritoneal coat there is evidence of recent inflammation. The meso-appendix shows marked evidence also of fairly recent inflammation—there is abundant lymphocytic exudation; the adjoining muscular coat of the appendix is also superficially infiltrated with these round cells. The muscular coat shows some fibrosis, and there is thickening of the submucous fibrous layer, probably the result of some former acute attack. The mucous membrane shows an overcrowding with lymphocytes, but there is no evidence of acute inflammation; the mucous membrane is fairly well preserved. There is not the slightest trace of carcinoma in this segment.

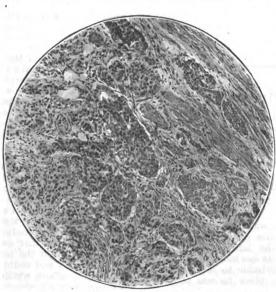
Distal segment.—Externally this segment also shows signs of recent inflammation. There is no lumen; the mucous membrane is altogether lost, and its place and the cavity are occupied by a characteristic carcinoma. The muscular walls are thickened and fibrosed, and just at the tip of the appendix the submucous layer is seen to be replaced by fat. At the distal end of this segment, within this submucous layer and replacing the mucous membrane, there is seen the carcinoma arranged in large masses in the alveoli of a firm but scanty fibrous stroma, and filling up the whole lumen.

Around the tip the wall of

Around the tip the wall of the appendix is not involved by the growth. From the distal end the growth extends proximally right to the division between the two segments but no further. It spreads laterally through the walls of the appendix to the peritoneal surface, and it is quite possible that it has extended by continuity into the surrounding adhesions.

The cells are columnar; they are arranged in alveoli and form in most places solid masses of cells, no trace of a lumen being visible. In some parts the cells are seen several layers deep surrounding a small central space, in this way simulating tubules. Towards the tip of the appendix the alveoli are much larger than they are proximally, the masses of cells correspondingly being much larger. The fibrous stroma is rather scanty near the tip, but proximally it is more

tip, but proximally it is more abundant and denser, and the tumour here has a resemblance to a scirrhous carcinoma. In the centre of what was once the lumen of the appendix the alveolar arrangement of the cells is fairly well preserved, but peripherally the normal limits of the tubular growth are broken, and cell-processes are seen extending out in all directions. At and around the tip of the appendix the carcinoma is limited within the submucous layer and does not send out processes into the muscular wall; but proximally, from within a short distance of the it is seen to break through the submucous coat and to sprout out into the muscular coats. These processes are composed of solid masses of cells not quite so tall as the cells in the central part of the tumour, approaching more to a spheroidal form, and they are seen infiltrating the muscular coats right up to the peritoneal surface. The infiltration in the muscular wall looks like a lymphatic permeation, the cell-processes in places being seen passing through between some of the muscular fibres, in the hiatus musculares described by C. B. Lockwood. The microphotograph is taken from a transverse section near the tip of the appendix and is magnified 75 times. It shows the large cell masses of that situation arranged in the alveoli of the rather scanty fibrous stroma. In a few of the smaller alveoli the tubular arrangement of the cells around a central lumen is apparent. The section also shows the carcinoma



Carcinoma of vermiform appendix. Transverse section at tip. \times 75.

invading the muscular wall, a solid process of cells being

There are one or two points of special interest in this case that are worth emphasising. While carcinoma of the appendix in itself is a rare condition, the situation of the special interest in the special interest in the special interest in the special interest in the special interest in the stranger is the special in itself is a rare condition, the situation of the special interest in t tion of the tumour in this case is quite unique. The appendix has been divided into two segments, in all probability the result of cicatrisation, and in sequestrated distal portion the carcinoma is situated. is of interest in view of Ribbert's theory of tumour formation-viz., that tumours arise from a partial or complete separation of cells or groups of cells from their organic continuity, in other words, from mechanical isolation. Although the condition has never been diagnosed, two cases in addition to the one reported above have been suspected beforehand. These two cases are mentioned by C. B. Lockwood in his article on appendicitis in Allbutt's "System of Medicine." In one instance cancer was suspected on account of the family history of cancer; and in the other on account of the marked anæmia, wasting, and loss of energy. This latter corresponds to the present case, in which there were obviously considerable loss of strength, progressive failure of health and weakness, in addition to the localising symptoms, all of which raised Dr. Monro's suspicions. In nearly every instance the symptoms have been those of one or other form of appendicitis, and as all medical men are now alive to the dangers of this condition and the advisability of early removal of the appendix, it is probable that to this is due the favourable prognosis in these cases. I am indebted to Dr. J. H. Teacher, Dr. Monro, and Mr. Rutherfurd for permission to publish this case. Glasgow.

Clinical Aotes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

FATAL CASE OF SEPTICÆMIA ILLUSTRATING AN IMPORTANT FACT WITH REGARD TO THE LYMPHATICS OF THE UPPER LIMB.

BY W. BARRIE BROWNLIE, M.B., CH.B. GLASG.

A FARM labourer, aged 25 years, was seen on May 22nd by my chief, Dr. O. N. Thomas. The patient was suffering from a painful swelling below the left clavicle. It had appeared two days before Dr. Thomas saw him. As the patient looked very ill it was thought advisable to remove him to the Lydney Hospital, to which place he was taken the same night. The temperature on admission was 100° F., and the pulse was 130. When I saw him on the following day I found that the infraclavicular fossa on the left side was filled up by a diffuse, hard, red swelling shading off into the surrounding skin. There was no fluctuation even on deep pressure. Considerable cedema was present, especially at the margins of the swelling. The shoulder-joint was quite free from pain on movement. There was no thickening of the clavicle, nor was any pain elicited when deep pressure was made over that bone. The axilla was quite free from glandular enlargement, and the inflammatory swelling had not invaded that region. Examination of the lungs showed nothing abnormal. The state of the pulse suggested that there was some severe microbic infection. There was a history of the man having had some inflammatory lesion which had gone on to suppuration round the nail of the left forefinger a fortnight ago, and although this had now quite healed up one could easily make out that there had been some acute inflammation in that region. As we could find no other point of infection we came to the conclusion that this was a case of acute lymphadenitis of the costocoracoid glands following on a paronychia of the left fore-finger. On the evening of the 23rd the patient seemed a little better, the pulse having somewhat subsided. On the 24th the pulse had again risen, this time to 140; the temperature still remained 100°. The swelling and cedema had now extended over the sternum to the right side of the chest, downwards to the nipple, and over the clavicle and shoulder. The same night the patient had a rigor, the temperature shooting up to 104°, and although no fluctuation could be

made out it was decided to open up the parts. The swelling was now covered with large vesicles filled with blood-stained serum. An incision about 3 inches in length was made in the interval between the pectoralis major and the deltoid muscles. Although a deep incision was made and the parts were opened freely by Hilton's method, no pus was found, only bloodstained serum coming away. Owing to the gangrenous condition of the parts, the muscles being swollen and flabby and the patient not feeling the incision, a bacteriological examination was made of the fluid which came away, but only streptococci were found. A large drainage-tube was inserted and the region was kept moist by a wet cyanide gauze dressing. On the next morning (the 25th) the patient had another rigor, and another swelling, of a similar nature to that on the chest, appeared on the right side of the neck behind the angle of the jaw. The nature of this was somewhat obscure; probably it was a thrombosis of the internal jugular vein. The pulse was scarcely perceptible and the patient died on the night of the 25th, the intellect being perfectly clear to the end.

In a general way we understand that an inflammation of the finger may spread to the glands of the axilla, although it is mentioned in some anatomical books that some of the lymphatics from the backs of the fingers may go along with the cephalic vein to the costo-coracoid group of glands in the infraclavicular fossa. This is a point which is not sufficiently emphasised, and several of these cases have been demonstrated to me, as a student, by Dr. Farquhar McRae of Glasgow. The lymphatics of the posterior aspect of the thumb, forefinger, and radial side of the middle finger frequently, though not invariably, with those of the radial side of the back of the forearm and back of the shoulder, go to the costo-coracoid glands, and this was the path of infection in this case. This state of affairs is perhaps more dangerous to the patient, as the costo-coracoid glands are nearer the great veins of the neck and also a step nearer the thoracic duct, as some of their efferent lymphatics empty directly into the subclavian vein (Quain). Perhaps one might argue that the paronychia of the left forefinger had not caused the blood-poisoning in this case, as that lesion had occurred a fortnight ago and the wound had quite healed up by the time the swelling on the front of the chest appeared; but we know well enough that organisms can lie quiescent in a gland until some slight injury may cause them to set up a severe inflammation. This seems to have been the sequence of events in this case, as the clear history of the paronychia a fortnight ago and the presence of a recent scar at the time of examination decided us in coming to no other conclusion.

I do not think that an earlier incision into the swelling would have saved the patient's life, as it was an inflammatory cedema and could scarcely be called an abscess, a condition of affairs which we would quite expect from an organism like the streptococcus The infection was of such a virulent nature that I do not think antistreptococcic serum would have done any good in this case.

Lydney, Gloucestershire.

A CASE OF TUBERCULOUS TESTICLE IN A CHILD AGED SIX MONTHS.

BY W. F. CHOLMELEY, F.R.C.S. ENG., HONORARY SURGEON TO THE WOLVERHAMPTON GENERAL HOSPITAL

On July 24th I was consulted about a child, aged six months, with a swollen, red, and very painful scrotum. The history given was that the swelling had been first noticed on the 19th and was supposed to have come on after an injury. On examination the scrotal tissues on the right side were found to be very inflamed and swollen but so painful that it was not possible to say if the testicle was affected. The child looked healthy and had been so since birth. The cord seemed to be slightly thickened. The child was admitted into the hospital and I ordered hot fomentations. The case improved very quickly, but on account of an outbreak of measles in the ward the child had to be sent out on July 28th before he was quite well. While outside the pain and swelling increased and became so bad that I had to admit the child again on August 4th.

The note made at that time is as follows: "The skin covering the left half of the scrotum is much reddened, and there is a large tender swelling occupying the natural position of the testicle, evidently an inflammatory enlargement of that organ. The cord feels thickened; the vas deferens cannot be felt. The temperature is normal." Thinking that it might be a case of torsion of the cord I decided to explore. On August 6th an incision was made in the inguinal region and the testicle in its thickened and distended tunica brought out into the wound. The layers over the tunica were much thickened and on opening it a quantity of turbid fluid escaped. The opening was enlarged and the epididymis was seen to be much enlarged and overlapped the body of the testicle. Under the globus major was a small collection of tuberculous-looking pus. I therefore removed the testicle. A section of the organ after removal showed numerous small caseating foci in the epididymis; the body of the testicle appeared to be healthy. Unfortunately, on August 11th the child developed measles and later broncho-pneumonia and died on August 19th.

A post-mortem examination was made and tubercle was found in the following organs: in some bronchial glands, in the left pleura, in both lungs, especially in the left, where there were some caseating foci, in the mesenteric glands, and in the left kidney, which was hardly developed at all. There was no tubercle found in the head or in the region of the bladder. Part of the testicle was sent to the Clinical Research Association and they reported as follows. "This testicle shows large inflammatory areas and a considerable degree of fibrosis. The inflammatory areas contain caseating foci and show some atypical giant cell systems. Although we cannot find any tubercle bacilli we feel sure the lesion is tuberculous."

Wolverhampton.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SURGICAL SECTION. President's Address.

A MEETING of this section was held on Oct. 13th, Mr. RICKMAN J. GODLEE, the President, being in the chair.

The PRESIDENT, in delivering his Address, said that prognosis in some of the common inflammatory diseases of the chest belonged at least as much to the physician as to the surgeon. The first and simplest condition was that of serous effusion into the pleura associated with acute pleurisy. They would all agree that patients who had had one attack of acute pleurisy with effusion and had been tapped once or twice, or not tapped at all, usually left the court without a stain upon their characters. They were admissible by insurance companies at normal rates, and the only record that remained (and that not always) was a slight departure from the normal physical signs, and perhaps of the mobility of the side that had been affected. The acute onset usually stamped their simple character. It was different when the onset was insidious. It had sometimes been suggested that most of the insidious cases were tuberculous. But it was no more true that they were all of that nature than it was that all the tuberculous effusions were insidious in their onset. He would expect an acute case to be caused by some septic organism and would be suspicious that a chronic one would turn out to be tuberculous even if no tubercle bacilli were found microscopically or by inoculation, with the mental reservation, however, that it might depend on a new growth. What was the outlook if a normal pleura was opened and drained? It had often been stated that an abscess of the liver might be safely opened through a normal pleura without any special precautions for closing the opening. This was not his experience. He had seen it followed by fatal results in septic cases or by very slow healing in amoebic ones. That was why he avoided injuring the pleura if possible and carefully closed the wound if it had been made. Were they justified, then, in incising and draining serous effusions that re-accumulated? To that different answers would be supplied. For himself, he was so afraid of leaving a permanently open pleura with collapsed lung that he advised repeated tapping, even up to seventy times seven, tedious though the process was. An effusion which was undoubtedly

tuberculous need not necessarily involve a very grave prognosis, one tapping being sometimes enough to effect a cure. Passing to the subject of empyema, he first offered some general remarks about the acute empyema of infancy. In 1886 he gave statistics when he was surgeon to the North-Eastern Hospital for Children and the average time for closure was six weeks. But that did not represent the usual course of things, three or four weeks was a common time for an acute empyema, and ten days or a fortnight was not rare, while a good number were cured by a single aspiration. The average was obtained by including the chronic cases. He did not gather that much better results were obtained now, although one might imagine that each successive writer on the subject had discovered some new panacea. A free opening, good drainage in the recumbent as well as the erect posture, the complete removal of all fibrinous masses, and the exercise of a wise judgment in removing the drainage-tubes were essential to success. The precise spot to half an inch at which the opening was made, the introduction or not of the gloved finger, and the presence or absence of an antiseptic material in the dressings were matters of less vital importance. soft chest walls of children and the elasticity of all their structures, and perhaps their more active vital power, seemed to favour the rapid closure of an empyema. Such cases were, he believed, common, almost typical, and he wished the medical officers of insurance companies would tell them something about them. They must apply for life insurance, and one would like to know whether any increased rate was imposed upon them. He should himself not advise it. He was afraid the particular answers desired were not to be obtained from insurance companies. It did not help them to know the average age of the patients insured (say in the Scottish Widows' Fund) who died from pleurisy and empyema, and it did not seem possible to obtain information as to the results from the point of view of the insurance companies of accepting proposals from those who had suffered from hydrothorax or empyema in childhood. Turning to acute empyemas in adults following acute pneumonia or pleurisy, the immediate prognosis as regards life depended upon the extent of the preceding disease and the amount of septic poisoning. The latter was indicated by the character of the pus; if that was sweet and only contained pneumococci the patients did not necessarily present what might be called an obviously septic appearance. If they did, and the pus was odourless it probably contained streptococci or staphylococci. If it stank there had probably been a rupture of a pulmonary or subdiaphragmatic abscess into the pleura. The pneumococcus cases if treated carefully antiseptically he thought did the best, especially if the lung was still somewhat solid from the pneumonia and the cavity was localised; but he had often seen (especially in hospital) a secondary pyrexia associated with a secondary septic infection. It was remarkable how well many of the stinking cases did. Some of the very worst septic ones might be snatched from death by continuous or repeated saline infusions or transfusions. Undoubtedly the great majority of those cases survived the operation, and he was not concerned with the small number who died within a few hours or days of it. An accurate prognosis as to the date of closure was impossible. Speaking generally, it might be said that the least favourable cases were those in which the cavity was large, or the lung was much collapsed, or the chest walls were very rigid, and those in which there was a very free communication with a bronchus. His own opinion was that those which were opened laterally were more likely to be slow in healing or to require a second opening than those which were incised posteriorly. So he thought that the prognosis was to some extent governed by the surgery. One would naturally expect that old people would do worse than young ones, but some healed remarkably quickly. Of the cases that healed the great majority remained well or had very slight inconveniences left behind. A small number had recurrences and some developed bronchiectasis. Although it was an undoubted fact that a small proportion of empyemata which burst into a bronchus recovered completely in the course of a few days or weeks, and that such a cure might be permanent (he had records of one case who remained well after 17 years), it might be stated that the majority of them required an external incision. But in most of those the fistula quickly closed and healing occurred as if there were

no such complication. It would be remarkable that such a result might be obtained even though the external opening had been long delayed if they did not remember what occurred in the treatment of pulmonary abscesses. It was probable that some of the cases in which a permanent fistula remained were complicated with bronchiectasis. might not only survive but retain good health for years. He had seen several such cases and had attempted (unsuccessfully, however) to close the fistula. But some of them succumbed to complications after improving for a time. In those one should be on the look out for tubercle. He next considered a small class of cases which healed readily and rapidly and remained well for longer or shorter periodsmonths, or perhaps years—and then the trouble recurred, and perhaps not only once but on several occasions. No doubt a spicule of dead bone was sometimes the cause, or a ligature, or perhaps a minute piece of necrosed tissue, but one often failed to discover such a foreign body. One recurrence need cause but little anxiety, but a second or third should make one speak doubtfully. Sometimes the healing process came to a standstill because the drainage was imperfect or because the cavity was too large. The latter condition might be anticipated where no adhesions had formed, and especially where none existed between the base of the lung and the diaphragm or the inner surface and the mediastinum. Those most unpromising cases resulted from the rupture of a pulmonary infarct, a liver abscess, or something of that sort into a previously healthy pleura. The immediate outlook there was serious, as if not quickly opened the patient might die within a day or two. The ultimate prognosis was also grave, as the cavity was sometimes so large that it could not be closed by the most extensive thoracoplasty. Should the thoracoplasty succeed, the prospect was, he believed, as good as that of an empyema which had closed by natural processes. It should be observed that extensive thoracoplastics were not without their dangers, such as shock, septic absorption, and cerebral abscess. Tubercle was the commonest cause of the nonclosure of empyemata of moderate size; sometimes that was because a calcareous gland, or a calcareous plate, or a piece of necrosed bone was hidden away in the depths of the cavity; sometimes apparently it was simply because the tubercle bacillus was present. Perhaps others could say something about the influence of tuberculin injections on the prognosis. He regretted that he had as yet no valuable information to offer. Some tuberculous empyemata or empyemata in tuberculous subjects closed after incision. But though those good results were not uncommon, it was not safe to prognosticate too favourably for such people. It was fortunate, however, that one could honestly tell them, or at all events their friends, that a comparatively comfortable and possibly a prolonged life might be in store for them, and unnecessary to dwell upon the fact that an extension of the tuberculous process to other parts not infrequently occurred. Estlander's operation was, in his experience, risky and seldom successful in tuberculous cases, even if the cavity be small. Still, as it occasionally succeeded, one was sometimes tempted to offer the chance; but it was certainly not right to speak confidently about the Caries of the spine was not a common cause of empyema, and when the combination did occur the prognosis was certainly worse than that of uncomplicated Pott's But even those cases were sometimes remarkably With regard to bronchiectasis, he passed over bilateral cases because they seldom, if ever, admitted of surgical treatment. They had to deal with unilateral bronchiectasis depending sometimes on the temporary or permanent lodgment of foreign bodies, and sometimes on other preceding diseases of the lung or pleura. Mr. Godlee recited briefly a few cases, showing how long they might go on, and to what extent improvement might take place. He summarised his experiences thus: 1. That patients with considerable bronchiectasis, whether operated on or not, might live for a great many years in spite of the continuance of the expectoration. 2. That severe and recurrent hæmorrhage was a common symptom. But he had only known one patient die as a result of it, and that was an old man with a very septic state of things whose lung he had freely incised. 3. That in some cases, such as very localised ones or those caused by the inspiration of foreign bodies, drainage of the abscess might effect a cure, but more often attempts at surgery only led to temporary relief.

He had no personal experience of the removal of the affected portions of lung, but such operations were reported from Germany, and with a measure of success, and, it must be added, with an appreciable mortality. 4. The risks of operation were septic absorption, including cerebral abscess and hæmorrhage. It would be interesting to hear what was the chance of life in the purely medical cases. Of such he had seen a considerable number, but usually only once, and had had no means of following up their after-history. The late Dr. G. I. Schorstein gave the cause of death in 63 cases who were admitted to the Brompton Hospital between 1882 and 1904. That did not help much in the matter of prognosis, because he did not give the duration of the disease, and of course they had no account of those people who endured bronchiectasis—say, like gout—as one of the accidents of life and who did not come into hospital to die from it, and, in fact, perhaps died from old age or some other complaint. There were, however, three points of much interest. One was prepared to find that the largest number of deaths—17—were from broncho-pneumonia, but it was startling to see that 13 died from cerebral abscess and instructive that four died from hæmoptysis. In speaking of localised pulmonary abscess they were again not concerned with those cases which died outright, whether opened or not, such as some of those which occurred during an acute pneumonia or some secondary septic cases. Nor need they consider the ordinary tuberculous apical vomicæ. The point of interest was the after-history of such localised abscesses as arose in connexion with pneumonia, or embolism, or the bursting into the lung of abscesses from other parts, or the presence of foreign bodies and a very small number of tuberculous cases. He had only seen one basic tuberculous cavity close after incision. The others had benefited by operation only in so far as the expectoration was diminished. Otherwise the disease had followed its natural course. He had seen several cases where what were diagnosed as small pulmonary abscesses, which exploration failed to discover, were expectorated, and that was followed by apparently complete recovery. And he could produce the histories of several cases where, when a localised pulmonary abscess had been successfully reached, cure had followed, and the patient had remained well for many years. He believed, indeed, that such patients were no worse off than they were before. The cautious prognosticator would not forget that it was not only in the case of serous effusions, but also that of empyemas and pulmonary abscess that carcinoma and actinomycosis had to be thought of. As to actinomycosis, it was a fruitful cause of error, and nothing but great watchfulness would prevent mistakes, which not only endangered the chances of the patient but the reputation of the medical attendant. Perhaps he would be thought to be giving too hopeful an account of the probable future of patients after a pulmonary abscess. It was impossible to say that some cases of bronchiectasis following obscure pulmonary conditions might not depend upon such a cause, but he had no facts to offer pointing in that direction. He wished he could give any guide as to the likelihood of the occurrence of cerebral abscess, which so comparatively often stepped in to blast the most hopeful prospects. He had seen it occur in what appeared to be ordinary straightforward cases of empyema, in bronchiectasis both acute and chronic (but only after operation), in gangrene of the lung, and in several cases of abscesses of the lung caused by the bursting upwards of an abscess of the liver. In the valuable contribution to the subject by the late Dr. Schorstein above referred to, it was suggested that of all the diseases under discussion bronchiectasis was the most likely to be followed by cerebral abscess. One did not mention that bugbear in giving a prognosis, but it was a shadow in the background for those who had much to do with thoracic surgery, making them anxiously examine the pulse and temperature of any suppurating case who unexpectedly complained of a headache. Cerebral abscess was the end of all prognosis, and it might supervene after many years.

Dr. THEODORE WILLIAMS said that he had been a life insurance medical officer for 30 or 40 years, and with regard to old empyemata and cured pleurisies some of them had come before him in that capacity; they were rare, and as far as he could remember the custom had been that if there had been no signs or symptoms for some years they were

accepted at the ordinary rate. That was the plan in his own office, and, he believed, in some others also. But it must be clear that there had been no return of symptoms for some vears.

PATHOLOGICAL SECTION.

Presidential Address. - Rhabdomyoma of Urinary Bladder.

A MEETING of this section was held on Oct. 19th. Dr. F. W. Mott, the President, being in the chair.

The PRESIDENT took for the subject of his address the present position of the neuron doctrine in relation to neuropathology. He pointed out that a neuron consisted of a nerve cell together with all its processes, including the protoplasmic processes or dendrons, and the single axis-cylinder process with its cone of origin, its collaterals or side branches, and its terminal arborisation. The neuron theory was that the nervous system consisted of innumerable such anatomically independent nervous units in contiguity but not in continuity. There was interlacing of the processes but no network. The nervous units were genetically and trophically independent cellular organisms arranged in functionally correlated systems, communities, and constellations. experiments of Harrison showed that ganglion cells could form nerve fibres without the aid of sheath cells, and the same observer also found that nerves separated from their cells of origin degenerated rapidly and no signs of regeneration were observed. The embryological basis of the neuron doctrine had been established beyond dispute. The formation of connexions of one neuron with another by fibrils and the passage of fibrils from one nerve cell through another nerve cell were matters of detail which in no way shook the fundamental principle of the neuron concept. The anatomical observations of Cajal and others regarding the genetic independence of the neuron had been fully confirmed by the researches of Harrison. Experimental and clinico-anatomical observations indicated that the sheath cell played an important part in regeneration after injury of the axon. The trophic activity of the spinal motor neurons was in all probability independent of stimulus arriving from other neurons. They possessed, indeed, a trophic autonomy; the observations of Harrison supported that idea, and it, moreover, accorded with the neuron doctrine of genetic and trophic independence. Direct injury of any part of the neuron caused changes but not injury to neurons with which it was functionally but not nutritionally correlated. If sections were made of the junction of the central and peripheral ends at successive periods of time three stages could be seen: first, the sprouting of large numbers of new fibres from the central cut axon; secondly, the penetration of the bridge of young vascular connective tissue joining the cut ends by the young nerve fibres; and thirdly, the penetration and growth downwards of these young fibres between the proliferated sheath cells of the peripheral portion. There could be no doubt that the new nerve fibres depended upon an outgrowth from the central cut ends of the axon. The President concluded his address by saying he would rest content if he had satisfied the members of the section that the neuron doctrine pronounced dead only a few years ago now rested on a surer basis than it ever did.

Mr. S. G. SHATTOCK exhibited the bladder of a male child, aged 2 years, from the mucous membrane of which many polypi projected. Histologically they consisted almost solely of striated muscle fibre, in all the normal stages of development from large multinucleated sarcoblasts. In discussing this unusual site of striped muscle Mr. Shattock adopted the view that heteroplasia in the case of tumours meant heterotopia, or the displacement of embryonic elements from a normal to an abnormal position. Certain of the striated fibres of the external sphincter vesices (Henle) lay deeply in the substance of the anterior or upper portion of the prostate, Henle's description in this respect having been recently fully confirmed by Mr. C. S. Wallace. And it was from vagrant sarcoblasts that the cells from which the striated fibres in the mucous and submucous coats probably developed. In favour of this view was the fact that the tumours were confined to the neck of the bladder, and they were almost certainly congenital.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION.

Teaching of Therapeutics in the Hospital Ward.

A MEETING of this section was held on Oct. 5th, Professor A. R. CUSHNY, F.R.S., the President, being in the chair.

Sir T. CLIFFORD ALLBUTT opened a discussion on the Teaching of Therapeutics in the Hospital Ward. He said that medical men must be pioneers, they could not afford always to wait for the pharmacologists; but there must be a mutual watchfulness of each other. Much that we knew to-day to be good came from empirical knowledge; this is still going on, but our empiricism must be of the best, the knowledge of experience. He selected three examples of methods of treatment which had stood the test of modern research, but which came originally from folk-medicine, viz., digitalis; vaccination, which to-day had wonderfully expanded in other directions; and poultices, which, after suffering a period of abuse, were, through the work of Bier, seen to be fundamentally reasonable. The student must be assured that apart from pharmacological proof, there was a large tradition of empirical knowledge of great provisional service. He should be told that such and such are the means found useful in clinical experience, whether they could be scientifically explained or not. They were to go to the bedside as artists to do what they could for the patient with such lights as they had. Finally, the student must be told he has to deal with living realities. He must be (1) assured he must be no sceptic, or he would endanger his own resourcefulness; (2) given a clear idea of the vis medicatrix nature; (3) warned against the danger of the overuse of drugs, and shown how closely therapeutics depend upon prognosis.

Professor W. OSLER gave an account of the methods adopted at the John Hopkins University, laying stress on the

practical advantage thereof.

Dr. HARRINGTON SAINSBURY thought that there should be more careful teaching of the history of therapeutics and of

the present-day acceptance.

Dr. J. CALVERT said that there was a lamentable ignorance of incompatibility and of the ordinary simple practical methods which should all be systematically taught in the

Dr. R. HUTCHISON relied more on teaching the student to be a sound diagnostician than a pharmacologist, and suggested that the time was ripe for some uniform agreement on the main lines of treatment to be adopted in certain well-known diseases, such as gastric ulcer.

Professor W. E. DIXON insisted on the advantage to the student of a sound pharmacological knowledge; and he pointed out the rational value of administering alkaloids the strength and action of which were accurately known.

Dr. A. P. BEDDARD thought it was impossible really to

teach therapeutics in the wards.

Sir DYCE DUCKWORTH emphasised the necessity of imparting practical instruction to the student, such as in the giving of enemata and hypodermic injections. He deplored the multitude of new so-called remedies, many coming from abroad.

Dr. J. HACKNEY said that the student should be taught how to manage a practice, to keep books, and be given a general idea of ordinary routine work.

The PRESIDENT closed the discussion with a few remarks.

THE SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

Slooping Sickness.

A MEETING of this society was held on Oct. 15th, Professor RONALD Ross, the President, being in the chair.

Dr. A. G. BAGSHAWE delivered an address on Recent Advances in our Knowledge of Sleeping Sickness, which is

printed on p. 1193 of this issue of The LANCET.

Dr. D. N. NABARRO said he was glad to see that the importance of the examination of the blood in the diagnosis of sleeping sickness was coming to the fore, because he was convinced that examination of the blood properly carried out was of great value.

Dr. A. BREINL (Liverpool) pointed out that too much reliance ought not to be placed on auto-agglutination. Dr.

Breinl also demonstrated sections from the brain of a monkey that died after infection with the Trypanosoma gambiense.

Dr. J. D. Thomson spoke of the value of ethyl antimony tartrate in the treatment of sleeping sickness.

Dr. G. C. Low said that in regard to enlargement of the glands attention must be paid to the part played by syphilis. Dr. F. M. SANDWITH gave details of some cases of sleeping sickness which he had seen last April in the infectious wards attached to the Pasteur Institute, and he understood that no ill effect had followed the use of atoxyl.

Dr. L. W. Sambon made some remarks on the etiology of the disease and discussed measures of prevention.

Mr. L. G. HILL described some early cases seen at the London Hospital, which the PRESIDENT said that he had seen also

Dr. C. F. HARFORD asked if the period of incubation was definitely established.

Dr. BAGSHAWE, in the course of his reply, said that it was fairly certain that the period of incubation was not more than 10 days, and it might be less than that period of time.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCO-LOGICAL SOCIETY.—A meeting of this society was held in Liverpool on Oct. 15th, Dr. J. W. Martin (Sheffield), the President, being in the chair.—Dr. A. J. Wallace (Liverpool) showed an extreme example of Hydrocephalus and also a Uterus and Vagina removed for Carcinoma of the Cervix, extending superficially over the entire anterior vaginal wall. The uterus was freely moveable and there was no infiltration of the parametric tissues. The vagina was first separated from below, and its lower end invaginated and closed by a double row of sutures. The operation was completed by the abdomen, an ordinary pelvic dissection being performed. The pelvic glands on the left side were enlarged and were freely removed; those on the right were greatly enlarged and too intimately adherent to the iliac vessels to justify removal.—Dr. J. E. Gemmell (Liverpool) showed a good example of a rare feetal monster-Symelus. - Miss Frances Ivens, M.S. (Liverpool), read the notes of five cases of Tuberculous Salpingo-ovaritis. In four the disease was apparently primary in the tubes; in the fifth there was an associated bone lesion. Dysmenorrhœa was the only symptom common to all. Dysuria occurred in four cases and menorrhagia in three. The ages varied from 20 to 36 years. In no case was the uterus removed, though both tubes were extirpated in each instance. A portion of ovary was left in all but one case. In all there has been an immediate and maintained good result, with gain in weight and freedom from pain. In one tuberculous peritonitis developed but subsided with tuberculin treatment.—Dr. Arnold W. W. Lea (Manchester) read a paper on Gastric Ulcer as a Cause of Pelvic Peritonitis, with notes of three cases. Chronic adhesive pelvic peritonitis, with more or less disorganisation of the uterine appendages, was found on abdominal section in each case. No evidence of the usual causes of pelvic peritonitis could be obtained. On the other hand, there was in each instance a history of severe chronic gastric dyspepsia, with an illness suggestive of a leaking gastric ulcer, from which the patient had recovered without an operation. -Dr. H. Leith Murray (Liverpool) read a paper on the Antiautolytic Action of Blood Serum and its relation to Hyaline Degeneration in Uterine Fibroids. He said that small pieces of a fibroid incubated in serum very soon developed distinct hyaline change limited to the connective tissue. Muscle fibres took a purely passive part in the process. The hyaline appearance produced resembled hyaline degeneration occurring naturally, both in general microscopical examination and in staining peculiarities. The clear fluid cavities in cedematous fibroids did not result from thinning out of surrounding hyaline material, as Kelly and Cullen asserted, but the fluid in them was directly responsible for that change and could produce it in vitro.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Oct. 15th, at which Mr. C. Gordon Watson, the new President, delivered an address on Recent Advances in Rectal Surgery. He said that radical operations for the extirpation of cancer of the tongue, larynx, and breast, with the glands involved, have long been established, but it is only in the last two or three years that surgeons have begun to regard the rectum as amenable to a similar form of treatment. The explanation seems to depend partly

on the failure to recognise the importance of the lymphatics in the pelvis in relation to the upward extension of the disease, partly to a wholesome fear of operating through the peritoneal cavity, but chiefly to the deplorable delay in diagnosis, a delay for which the patient is not always to blame. We now have a valuable aid to diagnosis in the sigmoidoscope, which enables us to examine in the great majority of cases the lower 12 inches of the bowel. The abdomino-perineal method of excision of the rectum will be the operation of the future. It aims at removing not only the diseased bowel but also the lymphatic glands in the hollowof the sacrum and the lymphatic vessels in the mesentery of the pelvic colon, up to the bifurcation of the left common iliac artery; in fact, it aims at dealing with the rectum in the same way that the Wertheim operation deals with cancer of the uterus. Ano-rectal ulceration is the term given by Wallis to a condition constantly found in the lining membrane of that part of the bowel which lies between the anus and the internal sphincter. lesion is a pathological condition which is the initial cause of many of the ordinary rectal ailments. It is a cause of genuine pruritus ani and of fissure, the chief cause of all ischio-rectal, submucous, and subtegmentary abscesses, and as a natural sequence the cause of all fistules, which are the residue of these abscesses, and finally it is the cause of those distressing cases of infective rectal ulceration which cause so much pain and misery and are so intractable to treatment. In the great majority of inveterate cases of pruritus ani a shallow ulcer will be found within the anal canal situated between the two sphincters, usually posteriorly, and they can usually be cared by the application of the actual cautery or by zinc sulphate cataphoresis.

HUNTERIAN SOCIETY.—A meeting of this society was held on Oct. 13th, when Dr. Sidney H. C. Martin delivered the first Hunterian lecture of the present session on "Certain Infective Processes in the Intestine: their Effects and Treatment." The lecturer classified bacteria having their habitat in the intestine into three groups: (1) endogenous, bacillus coli communis and streptococcus fæcalis; (2) exogenous, such as typhoid; and (3) putrefactive. The last class when they developed led to serious pathological results. The rôle of the bacillus coli was to counteract putrefactive bacteria; the bacillus coli and the bacillus acidi lactici prevented putrefaction in boiled milk. When introduced into the tissues the bacillus coli became pathogenic, its chemical product being an endotoxin, which produced a profound effect on the bodily temperature (lowering it) and nutrition, causing wasting. A septicemia which sometimes followed enteric fever and cholera was due to bacillus coli. The bacillus coli tended to produce illness irregular in type and tending to get well and relapse; it acted by side infection, producing disease in the gall-bladder, pancreas, or appendix, had a direct effect on the mucous membrane, producing such conditions as mucous and ulcerative colitis, or passing into the blood stream caused pyelitis, cystitis, thrombosis, meningitis, and infective endocarditis. In his remarks on treatment the lecturer pointed out that vaccination by the bacillus coli did not always cure but produced remarkable results in some cases and instanced two cases of thrombosis, in which the effect had been markedly good. He considered big doses dangerous and recommended from 1 to 4 millions of the dead bacilli per dose. A toxic dose produced definite local reaction and swelling.

Overcrowding in Lambeth. — A case recently came before the notice of the Lambeth board of guardians, the medical significance of which is considerable. The occasion was the application for outdoor relief by a family of three, consisting of the parents and a child, aged seven years, all of whom lived in one back room of insufficient size. The wife was in an advanced state of pregnancy, while the husband had been certified to be suffering from chronic phthisis. Despite the very strongly worded appeal of the chairman of the board to the man to go into the infirmary and not endanger his wife's health by continuing to live in the same room with her, the applicant refused to leave his wife, saying he could eara a little, and eventually the board granted 3s. in money and 3s. in food per week relief.

Bebiews and Notices of Books.

A System of Medicine by Eminent Authorities in Great Britain, the United States, and the Continent. Edited by WILLIAM OSLER, M.D. Oxon., F.R.S., Regius Professor of Medicine in the University of Oxford; assisted by THOMAS McCrae, M.D., F.R.C.P. Lond., Associate Professor of Medicine and Clinical Therapeutics in the Johns Hopkins University, Baltimore. Vol. VI. London: Henry Frowde and Hodder and Stoughton. 1909. Pp. 799. Price 30s. net per volume, or 24s. net per volume to subscribers.

In this volume a variety of conditions are describednamely, diseases of the urinary system, diseases of the ductless glands, diseases of the muscles, vaso-motor and trophic disorders, and diseases "of obscure origin." The principles of life insurance are also discussed from the medical stand-

Part I. is concerned with Diseases of the Urinary System. "An Introduction to the Diseases of the Kidney" is written by Dr. J. McCrae (Montreal), who refers to certain points in the physiology and pathology of that organ. The same author also considers the malformations and circulatory disturbances of the kidney, including under the latter title anæmia, hyperæmia, and thrombosis of the renal vessels and infarcts of the kidney.

Dr. A. E. Garrod (London) contributes an interesting article on Anomalies of Urinary Excretion. In addition to entering upon an able discussion on the various aspects of albuminuria, pyuria, phosphaturia, and other commonly occurring phenomena, he also describes more rare conditions, such as hæmatoporphyrinuria, alkaptonuria, and cystinuria. Dr. Garrod is also responsible for the chapter on uramia. He is forced to the unsatisfactory conclusion that, in spite of the large amount of patient research which has been expended upon the problem of the nature of urzemia, from the days of Bright and Addison down to the present, no solution yet proposed has met with general acceptance, and the cause of the condition still remains unknown. He passes in review the various theories that have been suggested, drawing attention to one of the most recent-namely, the production of nephrolysins, a pro position which has been advocated by Ascoli and others. It has been shown that just as when bacteria find their way into the animal organism, substances antagonistic to them are produced, so also when cells of a particular organ are injected under the skin, or into the peritoneal cavity, substances antagonistic to the special cells are found in the organism. Some of these cytolysins have been carefully studied, but the nephrolysins have not been so generally recognised. When broken-up renal substance is injected into animals, substances are found in the serum of the animals so treated which exert a destructive action upon the renal cells of other animals. When injected into a second animal such a serum sets up a nephritis and causes albuminuria. It has been suggested that the tendency to chronicity in renal diseases is due to the establishment of a vicious circle, and that the nephrolysins formed as a result of the renal lesions aggravate the morbid condition in the kidneys. Ascoli, and those who think with him, believe that the phenomena of uramia may result from the action of these bodies upon the nerve centres.

The subject of nephritis occupies five chapters, all having been written by Dr. J. B. Herrick (Chicago). We would especially draw attention to the remarks on the treatment of chronic interstitial nephritis. Dr. Herrick takes a moderate, common-sense view of the diet which is most suitable for patients suffering from this affection. After referring to the various views which have from time to time belongs. We consider his suggestion cound. For full

been expressed as regards drinking a large amount of liquid or the reverse, the value of an entirely milk diet and the effect of "red meats," he says: "The dietetic treatment may be summed up in a few words by saying that the diet must be a mixed diet from which all seasoned, spiced foods and alcohol are excluded; meat and other proteids are to be taken in moderation or small amounts; cereals, vegetables, and fruits freely; the sweets sparingly. Milk is allowed freely, but neither it nor water is to be taken in excess for the supposed benefit that is to come from flushing out the kidneys." This opinion is in accord with that held by many of the leading authorities. In commenting upon the operative treatment of chronic interstitial nephritis (decapsulation of, or incision into, the kidney) Dr. Herrick says that while in individual cases operation may perhaps be justified, an operation upon every case of nephritis is to be condemned; convincing statistics are not yet to hand to justify any statement that a surgical cure has been wrought of a disease of the character of chronic nephritis. Other diseases of the urinary tract which are described are: The Bacteriology of the Infections of the Urinary Tract and Urinary Findings in these Conditions; Pyogenic Infections of the Kidney, Ureter, and Perirenal Tissues; and Tuberculosis of the Kidney, by Dr. T. R. Brown (Baltimore); Tumours of the Kidney; Urinary Lithiasis, Renal and Ureteral Calculi; and Genito-urinary Diagnosis and Diseases of the Prostate, by Dr. H. H. Young (Baltimore).

The second part of the work deals with Diseases of the Ductless Glands. The writer of the four chapters on this subject is Dr. G. Dock (professor of the theory and practice of medicine, Tulane University of Louisiana). Diseases of the adrenal glands are first described. The chromaffin tissue and its relation to disorders of the gland, to which a considerable amount of attention has recently been drawn, are discussed, but Dr. Dock considers that the investigations conducted more especially by French observers are as yet too immature to warrant any definite conclusions being drawn. A good account is given of Addison's disease, and 'adrenal therapy" is touched upon. The author maintains that the use of adrenal preparations in this condition is legitimate, but they should not be given to the exclusion of symptomatic treatment. They are more promising in the early stages and must be used with extreme care in advanced cases, but even in the latter are permissible. In the chapter on diseases of the thyroid gland reference is made to parathyroid lesions. most important result of such lesions is tetany, or perhaps it would be more accurate to say post-operative tetany. MacCallum's experiments to attempt to explain the pathology of tetany are quoted, and it is suggested that the same theory can be applied to non-operative tetany. His results indicate the existence, in animals deprived of the parathyroids, of a poison which combines with certain cells in the central nervous system. A full description is given of exophthalmic goitre, the surgical treatment receiving favourable comment. Cretinism, myxcedema, and acromegaly are

Part III. is devoted to Diseases of Obscure Causation. These include Hodgkin's Disease, by Dr. W. T. Longcope (Philadelphia); Arthritis Deformans, by Dr. T. McCrae; Osteomalacia, by Dr. Dock; and Astasia-abasia and Adiposis Dolorosa, by Dr. J. McCarthy (Philadelphia). The article on arthritis deformans will well repay perusal. author considers that while an exact classification is difficult it seems best to discuss the clinical features under the various forms, always bearing in mind that there are not invariably clear-cut distinctions between them, and that it may not be easy to say exactly to which class a given patient

details we can only refer our readers to the original, but the following is an outline of the classification adopted: 1. Periarticular form. This is the most frequent, and comprises the cases sometimes described as "rheumatoid arthritis." The changes are most marked in the synovial membrane and perarticular tissues. The cartilage is also affected in many cases, but the damage is rarely extreme; whatever change occurs in the bone or cartilage is apparently secondary. 2. Atrophic form. This is much the least frequent in occurrence, and is in many ways the most serious as regards outlook. The most marked anatomical change consists in the atrophy of the bone, which may be very advanced. The progress in some cases is extremely rapid, and they might almost be described as fulminating. 3. Hypertrophic form (osteo-arthritis). In this the changes are more especially in the cartilage and bone, and very varying degrees of involvement are found, both as regards the amount of change in the cartilage and the extent of bone formation. The form is usually polyarticular, and apparently may come on at any age, but the majority of patients are older at the time of onset than those belonging to the peri-articular form. 4. Some of the forms of the so-called "infectious" arthritis. This group may pass over into arthritis deformans, and it is difficult to know where to draw the line. The frequent occurrence of arthritis with or after many acute infections has to be always remembered.

In Part IV. the diseases of the muscles are considered: myositis, Thomsen's disease, and myotonia congenita, by Dr. W. R. Steiner (Hartford, Conn.), and myasthenia gravis, paramyoclonus multiplex and periodic paralysis by Dr. D. J. McCarthy. All these contributions are carefully done.

In Part V. a description is given of vaso-motor and trophic disorders. Raynaud's disease, angioneurotic œdema, Quincke's disease, diffuse scleroderma, and erythromelalgia are described by Professor Osler. A comprehensive account is given of the symptomatology of Raynaud's disease, and some excellent reproductions of photographs enable the reader to obtain a good idea of the principal changes observed in the feet and hands. The differential diagnosis is also discussed in an instructive manner. The various forms of local necrosis which have to be distinguished are considered separately, the more important being grouped under four headingsviz., organic disease of the nervous system, obliterative arteritis, post-febrile necrosis, and multiple neurotic skin gangrene. Dr. C. P. Emerson (Clifton Springs Sanatorium) describes the following conditions: achondroplasia, hypertrophic pulmonary osteo-arthropathy, Paget's disease, osteogenesis imperfecta, osteopsathyrosis, leontiasis ossea, microcephalus and facial hemiatrophy.

The last part of the work deals with the medical aspects of life assurance; it is written by Dr. C. L. Greene, professor of medicine in the University of Minnesota. As is natural, Dr. Greene bases his remarks mainly on the results obtained by the American insurance companies, and we do not think that all which he has to say will be endorsed on this side of the Atlantic. We cannot agree, for example, with his remark that life insurance companies are constantly accepting men in the active stages of tuberculosis. Careful inquiry into the history of the applicant, combined with physical examination, should reduce such a risk to a minimum, but prolonged and scientific investigation by a medical man should command a proper fee, a fact which some life assurance companies will not recognise.

Professor Osler and Dr. McCrae may again be congratulated on having issued a most interesting volume, which fully maintains the high standard of its predecessors. The subjects considered in it are of widespread interest, and the various contributions are of great practical value.

Pratique de la Chirurgie Antiseptique; Leçons Professées à l'Hôtel-Dieu. (The Practice of Antiseptic Surgery.) Par le Docteur JUST LUCAS-CHAMPIONNIÈRE, Chirurgien Honoraire de l'Hôtel Dieu, Membre de l'Académie de Médecine, Membre du Conseil d'Hygiène et de Salubrité du Département de la Seine. Avec un portrait de Lord Lister. Paris: G. Steinheil. 1909. Pp. 463. Price 8 fr.

Dr. Lucas-Championnière was the first in France to employ the methods of Lister, and it was in 1874 that the opportunity came. For a few weeks in that year he undertook the work of Panas at the Lariboisière Hospital, and the wards in which his cases were placed were some of the most crowded and most infected wards of the hospital, for, he tells us, there were many patients dying from erysipelas and other septic conditions, and during the whole year no case of amputation had recovered. He determined to employ the antiseptic method and to follow Lister's teaching in all particulars, though he had to provide the dressings at his own expense. He took over the wards on Nov. 19th, 1874, and the next day he operated on a strangulated hernia and performed an amputation at the shoulder, while on the following day he trephined a patient who was comatose and had epileptiform seizures. All these cases recovered, and from that time to the present he has employed and taught antiseptic surgery. The book before us is an exposition of the methods he has used, and it is of great interest and importance in these days when what is called aseptic surgery is very extensively practised and when it is not rare to find that a little good-natured contempt is cast on antiseptic methods. As we have many times pointed out, the differences between the antiseptic and aseptic methods are much less important than many appear to think; but whatever differences there may be the methods employed by Lord Lister, and described in this work by Dr. Lucas-Championnière, are well able to hold their own. During the Franco-German war Dr. Lucas-Championnière acted as surgeon to an ambulance and he wished to take with him some carbolic acid which he had obtained, but his senior objected and it was not used. This little medical footnote to history shows that the introduction of the antiseptic method was as slow in France as in many parts of England. We have derived much pleasure from reading this volume, and we recommend it to all those who wish to have a full account of the best practice of antiseptic surgery.

Électrothérapie. By Professor T. NOGIER, Lyons. With 251 illustrations in the text. Paris: J. B. Baillière et Fils. 1909. Pp. 528. Price 10 francs.

This is the first volume of a series of books on physictherapy which are to appear under the editorship of M. Gilbert and M. Carnot. In reading the work we have been reminded of a similar book by Dr. Guilliminot which we reviewed some time ago in these pages. We do not suggest plagiarism in any way; we merely note the coincidences in style and method of experimenting and reasoning. Professor Nogier's work is divided into four parts. The first of these relates to apparatus and its management, and the second to electro-physiology, in the course of which a number of interesting points are discussed and then demonstrated by means of experiments. In the second section the action of the ordinary galvanic and faradic currents on nerve and muscle is given, as well as that of high-frequency currents on nutrition, while the author enters into the questions of cataphoresis and the induction of so-called electric sleep. The third section on electrodiagnosis is very well written and forms a valuable résumé of the present state of our knowledge on this subject. The last section of the book, that on electro-therapeutics, is the largest and most important, taking up about one-half of the whole volume. The author includes only those diseases

which are, as a rule, either cured or greatly benefited by electrical treatment. In the treatment of hemiplegia he advises that galvanisation of the brain and faradisation of the affected muscles should be commenced one month after the occurrence of the primary lesion in order to stimulate the repair of the cerebral injury and to obviate atrophy of the affected muscles. As has been shown by Leduc and practised by others in this country, galvanisation of the brain is safe so long as we avoid any sudden variation in the magnitude of the current. In infantile paralysis the author advises employment of slow rhythmic currents. His chapter on the various forms of neuritis is very complete, and here he lays stress on the importance of a careful electro-diagnosis as a preliminary to electrical treatment. A novel method of treating some forms of facial neuralgia is described in which the active electrode consists of a glass cannula containing a silver wire which is connected to the positive pole. The cannula is supplied with warm water from a douche tank. This is applied inside the nostril or mouth, the current reaching the mucous membrane through the water. In this way high current densities can be employed without risk of producing an electrolytic burn and the method has given very good results.

The section on diseases of the skin is fairly comprehensive, but the author appears to attach but little importance to treatment by X rays, radium, or ultra-violet light. He treats lupus erythematosus by a sort of modified fulguration which in spite of its painfulness he prefers to the X rays or Finsen light.

We think that Professor Nogier has written an extremely good book, one which forms a worthy addition to any medical library that has pretensions to being up to date and inclusive.

The Blood in Health and Disease. By R. J. M. BUCHANAN, M.D. Vict. and Liverp., F.R.C.P. Lond., Professor of Forensic Medicine in the University of Liverpool, Honorary Physician to Out-Patients, Liverpool Royal Infirmary. London: Henry Frowde, Oxford University Press; Hodder and Stoughton. 1909. Pp. 318. Price 12s. 6d. net.

The study of hæmatology and its application to clinical medicine and surgery have made great advances and proved to be of considerable utility during recent years. The full value of the examination of the blood and the conclusions to be drawn from the results have not yet been completely determined, but enough has been demonstrated to prove that in certain conditions a differential "count" of the erythrocytes and leucocytes yields information of great worth both as regards diagnosis and prognosis. The technique necessary to carry out the various processes is in some instances an involved one, and the morbid conditions that may be indicated are numerous. Consequently a trustworthy work devoted to a consideration of the blood in health and disease, containing the most recent researches on the subject, is to be welcomed, and such a book is now before us.

After a brief review of the characters of normal bloodthe methods of estimating the amount of hæmoglobin are discussed and the various forms of hæmoglobinometers are described. A chapter is next devoted to the less important procedures which are sometimes employed in connexion with the examination of the blood, such as the use of the spectroscope, the coagulation time, the estimation of the calcium salts and of the alkalinity of the blood and its specific The manner in which the opsonic index is estimated also receives attention. The methods and instruments which are employed in enumerating the erythrocytes and leucocytes are well described, and numerous hints are given which will be found of value by practitioners and students. Reference is also made to the enumeration of blood platelets, directions are likewise

given for the preparation of specimens for microscopical examination, while the composition of the principal stains employed is duly set forth.

The chapter dealing with the morphology of the erythro, cytes, and with their physiological and pathological variations in number and appearance, will be found full of interest, the various facts being commented on in a manner that at once attracts the attention of the reader. Particular importance must be attached to the chapters devoted to a consideration of the leucocytes. Of all the problems associated with the study of hæmatology, the changes in and varying proportions of the different forms of the white cells are the most difficult to follow and to understand. Dr. Buchanan treats the subject in a thorough and painstaking manner. The student is likely to be bewildered at first with the varieties of leucocytes which may be met with in the blood, more particularly as more than one name has been given by different observers to each of the forms. The classification here given, however, will be found simple and easy of comprehension. The significance to be attached to the presence of lymphocytes, eosinophiles, myelocytes, and so on, is clearly laid down, and the blood changes which occur in association with special diseases are carefully described.

The value of the work is considerably increased by a number of excellent coloured plates. These have been drawn with a view to providing a faithful atlas of the principal morphological changes which are to be found in abnormal blood states. They are beautifully produced and a full description accompanies each one. We were very favourably impressed with this book and can recommend it to those of our readers who are interested in the subject and who wish to supplement their knowledge both in the practice and theory of the study of the blood.

LIBRARY TABLE.

Masques and Phases. By ROBERT Ross. London: A. L. Humphreys. 1909. Pp. 315. Price 5s.—The ingenious Mr. Robert Burton in his wonderful Anatomy of Melancholy quotes a saying of Marsilius Ficinus, who was both priest and physician, of which we have been reminded in reading Mr. Ross's book. The saying occurs in a letter to a group of his friends and is as follows: "Iterum precor et obtestor, vivite laeti; illud quod cor urit, neglegite. Haec autem non tam ut sacerdos, amici, mando vobis, quam ut medicus; nam absque hac unâ tanquam medicinarum vitâ, medicinae omnes ad vitam producendam adhibitae moriuntur: vivite laeti." Michael Finsbury gave similar counsel, and Mr. Ross's book teems with what that admirable solicitor called "judicious levity." The essays are full of the best kind of fooling mixed with sound common sense and an intimate knowledge of literature and art. First we have an excellent short story about an archæologist, a blackmailer, and a forged manuscript, and other chapters are reminiscent of that unworthy follower of Psalmanazar—namely, Shapira. "The Eleventh Muse," "A Mislaid Poet," and "The Elethian Muse" deal with banalities in verse and prose, and the extract from Baedeker's Southern France, 1891 edition, which is given in the lastnamed, is pure joy. We are sincerely grateful also to Mr. Ross for recalling to our mind the immortal passage about the Roman Catholic church from that instructive work of the "fifties," "Near Home." More serious essays are a sympathetic biography of that unfortunate genius Simeon Solomon, and a retrospective view of Aubrey Beardsley. "Swinblake" can amuse but few people, it is too allusive, but those who take the allusions will be rewarded. The last section of the book is taken up by a brilliant lecture entitled "There is No Decay," delivered at Liverpool in 1908. We

commented upon this optimistic address soon after its delivery, and on re-reading it we again find its message true and inspiriting. We thank Mr. Ross for his little book, but we hope that in future writings he will allow himself to be somewhat simpler in his treatment. He demands from his readers always an intimate knowledge of things about which he should be informing them.

Elementary Physiology for Teachers and Others. W. B. DRUMMOND, M.B., C.M. Edin., F.R.C.P. Edin. With 80 illustrations. London: Edward Arnold. 1909. Pp. 198. Price 2s. 6d.—Dr. Drummond has essayed a difficult task. As hygiene now holds an important place in the curriculum of students in training as teachers, and as a sound hygiene must be based on physiology, this little book was written to meet the needs of those in, or about to enter, the teaching profession and not as a manual either of hygiene or physiology. Special attention is paid to the peculiarities of childhood, and a rather full account of the physiology of bodily exercise and of the anatomy of the bones, joints, and muscles is given. The writer has recognised that what is wanted is not a knowledge of the minute structure of a muscle, or even its origin or insertion, but rather how a muscle or a series of muscles may act and work in unison to produce a particular movement, and how the muscles are coördinated to this end by the central nervous system. The nervous system and sense organs receive special attention, though of course the work is quite of an elementary character. All the statements cannot pass unquestioned; for instance, under the head of the Chemical Composition of the Body we find the statement that "sodium chloride, or common salt, is the most abundant mineral salt." The microscopical illustrations are rather apt to mislead, no magnification being stated. The smooth muscle cell figured on p. 73 is longer, broader, and far more imposing than its cross-striated neighbour. It would not be difficult to find other points in the book to criticise, but we recognise that the need to say just enough, and only just enough, made this a very difficult book to write. We think that it will prove useful both to the teacher and to the student preparing himself to become a teacher. It seems to meet the elementary requirements of both in a readable form.

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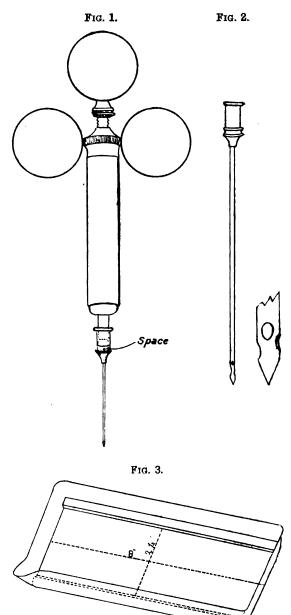
APPLIANCES FOR CLINICAL PATHOLOGY.

THE three pieces of apparatus which are described below have been devised during the work on human trypanosomiasis, carried out by the expeditions and in the laboratories of the Liverpool School of Tropical Medicine. They have all been used and have been found to fulfil the purposes for which they are intended. The syringe and lumbar puncture needle were supplied by Alexander and Fowler, the staining dish by Baird and Tatlock.

Fig. 1. Syringe for gland puncture.—This syringe was designed to fill the requirements of a syringe intended for use in the diagnosis of human trypanosomiasis by gland puncture. The finger rings were fitted in order that this manceuvre might be done by the operator without assistance. The space, indicated by the illustration, in the head of the needle below the nipple of the syringe has been provided in order that the drop of gland juice obtained by puncture shall be detained there and not drawn up into the syringe.

Fig. 2. A needle for lumbar puncture.—The needle ordinarily used for making lumbar punctures has at least two disadvantages. Its point has cutting edges, since it is formed by grinding down a fine tube until a point is made, and it has but one, a terminal, opening. Because of its cutting edges it is difficult to do a lumbar puncture with an

ordinary needle without wounding a blood-vessel; consequently the cerebro-spinal fluid obtained by its use is liable to be mixed with blood. When a lumbar puncture is done with an ordinary needle, the needle sometimes becomes blocked by a plug of skin or of tissue, punched out by its terminal opening. Even if the point of an ordinary needle is within the spinal canal the cerebro-spinal fluid may not flow freely, or may fail to flow, because the opening of the needle has been closed by a membrane lying over it. The needle has been designed in order that these disadvantages may be avoided. Its point is short and conical; consequently it has no cutting edges. Instead of one



terminal aperture this needle has three lateral ones. In order that all three of these openings may be in the spinal canal at the same time the distance from the upper border of the uppermost of them to the point of the needle is only a quarter of an inch and the openings face in different directions in order that all three may not be blocked by the same cause.

Fig. 3. Staining dish.—In order that a precipitate may not be formed upon films which are to be stained by a

¹ Memoir XVIII. of the Liverpool School of Tropical Medicine, p. 2.

watery modification of Romanowski's staining method ² they must be placed face downwards in the staining fluid. This is usually accomplished by resting the slides to be stained upon matches, or en other slides, and pouring the stain beneath them; the staining dish illustrated was devised to obviate this. It is made of glazed ware, and is capable of taking seven ordinary slides at a time. Along the whole length of the dish on either side run slightly raised margins, upon which the ends of the slides are supported. A shallow space is thus left between their under surface and the bottom of the dish, so that only a small quantity of stain is used.

JOHN L. TODE, M.D., Associate Professor of Parasitology, McGill University, Montreal.

Looking Back.

PROM

THE LANCET, SATURDAY, Oct. 22nd, 1881.

CYANOPATHIA CUTANEA.

EXTRAORDINARY CASE OF THE MORBID TRANSPIRATION OF BLUE COLOURING MATTER THROUGH THE SKIN.

By Dr. C. BILLARD, of Angers.

(The Editor, after an introductory paragraph omitted now for want of space, concludes "Even though it may not be permitted to us to penetrate the intimate nature of everything presented by the study of natural philosophy, we should at least keep accurate records of all the curious and movel phenomena which may one day serve for the perfection of science. Under these impressions I proceed to publish briefly the subjoined case:—)

Victoria Russard, a full-grown girl, ætat 16, native of Corzi, department of the Maine and Loire, was presented to me [Dr. Biliard] for my opinion on the 23rd April, 1831, by M. Hervé, of Villeveque. Her face, neck, and upper part of the chest, was of a beautiful blue colour, especially remarkable on the forehead, the alæ nasi, and about the mouth. When her person was wiped with a white handkerchief, it was stained by the blue matter, and the skin was left clean and white; the lips were of vermilion tint, the pulse regular and natural, the strength and appetite indicative of perfect health. The only morbid symptoms she exhibited was a dry cough, but there was no rate, no dulness on percussion, no aberration from the natural phenomenon of the heart, at least as far as auscultation and percussion could demonstrate. years had elapsed since her first menstruation, which since continued to observe the regular periods. She followed the employment of a laundress, and from the commencement of this pursuit she began to perceive her eyelids dark and blue, and that this colour disappeared when she went into the open air. Any unusual increase of temperature remarkably augmented the blue secretion.

The coloration, however, made no progress till the end of last May, when the entire forehead and face became remarkably blue; the dry cough increased, and some sanguinelent expectoration, and at length hæmatemesis supervened. The menstrual function still was regularly performed. The patient was bled, and a blister applied to the arm without relief.

When I first saw this young woman, I imagined that the blueness was independent of any organic disease of the heart; and as the blue matter was secreted on the surface of the skin, which on its removal remained free from any stain, I deemed the secretion to depend entirely on an altered cutaneous transpiration. This diagnosis once established, I still found myself much embarrassed in the indications of treatment, and I at length ventured to advise the madicines, which, by their direct action on the skin, might induce some favourable modification in the disordered functions of that organ. With this view I prescribed six grains of flour of sulphur daily, and half an ounce of sarsaparilla moot in decoction in a pint of water.

Far from any success being thus occasioned in twelve days, abundant sweating ensued. The blue colour greatly increased. The forehead, the face, the neck, the chest, and the belly, became of a deep azure hue, which extended itself in clouds, grew pale or deep, according to the degree of acceleration or retardation in the cutaneous circulation; for example, when she was questioned on any delicate matter, instead of blushing she became quite blue. In fact the shades of the chameleon were not more sudden in their appearance. It is remarkable that the anterwar surface alone of the face, trunk, the shoulders, arms, and thighs, were susceptible of the tingeing, while the posterior surfaces remained free. The patient's linen was stained blue. The sclerotic coat, the nails, scalp, and concha of the ear, preserved their ordinary colour; the mucous membrane of the cheeks was rather pale, the tongue usually furred. There was no perceptible febrile movement.

Fifteen days after the first consultation, I again saw the patient. The blue colour was again increased; the cough stronger; no feverishness, but the urine had been so suppressed for six days, that for three days she had scarcely passed a single drop. Notwithstanding this suppression, she endured none of the accidents it ordinarily occasions, such as swelling of the abdomen, hypogastric pain, cedema of the ancies, &c. Every night there was profuse diaphoresis; some bloody sputa had recently been expectorated, for which she was bled in the arm. The blood exhibited no appreciable alteration from the healthy state.

I separated a considerable quantity of the blue matter from the skin by means of oil, it having resisted the action of water and vinegar. M. Cadot, an able and distinguished pharmaceutist, subjected it to the following chemical examination.

(We have not the space to transcribe the results of analysis of the blue matter, but no satisfactory conclusions were arrived at, except that Dr. Billard was led to administer bicarbonate of soda dissolved in an infusion of orange flowers, and in doses of from 6 to 18 grains daily, the use of which resulted in a diminution of the morbid secretion, and in 12 days the trunk was completely blanched, but there remained a slightly blue tint around the eyes, the alæ nasi, and the forehead. As olive oil had been found to remove the blue colour the patient was advised to wash her face with it every morning. Dr. Billard states: "This species of cyanosis is, I believe, unexampled in the records of medicine, this colouring matter here being widely different from the blueness of aneurismatic patients, or the greenness which sometimes is seen on stained linen.")

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN .- A quarterly court of the directors of this society was held on Oct. 13th, Dr. G. F. Blandford, the President, being in the chair. 19 members of the court were present. Since the last court one of the vicepresidents of the society, Sir Thomas Smith, Bart., had died, and a vote of condolence was passed from the chair. Sir Thomas Smith was elected a member in 1870, and had held the offices of director and vice-president. He had always taken the keenest interest in the welfare of the society, and was a regular attendant at the quarterly courts. of the annuitants of the charity, a widow, had also died since the last court; she came on the funds in 1907, and received in grants £145. The sum of £518 was voted to be distributed among the annuitants as a gift at Christmas, each widow to receive £10, each orphan £3, and the orphans in receipt of grants from the Copeland Fund £5 each. Membership is open to any registered practitioner who at the time of his election is resident within a 20-mile radius of Charing Cross. The subscription is 2 guineas per annum, or a member may become a life member by paying one sum the amount of which is fixed by the by-laws of the society. Relief is only granted to the widows or orphans of deceased members, and since the last court six letters had been received from widows of medical men asking for relief, but this had to be refused as their husbands had not been members of the society.

Application forms for membership and full particulars may be obtained from the secretary at 11, Chandos-street, Cavendish-square, London, W. The next election will be on The invested funds of the society now Jan. 12th, 1910. amount to £100,500.

^{*} Stephens and Christophers: The Practical Study of Malaria and other Blood Parasites, p. 21.

1222 THE LANCET. I

LONDON: SATURDAY, OCTOBER 23, 1909.

Pathogenic Organisms and Sporadic Cases.

WHERE two cases of an infectious disease occur in patients in close proximity to one another the mode of transference of the morbid cause presents no need of any special explanation. The air may have been the medium of infection, and experiments have shown that The mode of transference may have this takes place. been mediate, clothes and other substances acting as the channel of convection, or immediate contact may serve to account for the transference of the disease. But the problem is far more abstruse when no other case of the disease has occurred in the immediate neighbourhood of the patient; and some supporters of the germ theory were in the early days of modern pathology compelled in defence of their opinions to invoke explanations which to our fuller knowledge appear improbable or even absurd. The power possessed by the air of conveying the microbes of disease is certainly of effect to some extent, but it is only in the neighbourhood of the patient that this mode of infection can act, and all recent investigations have merely served to increase the certainty with which this opinion is held, so that we hesitate to accept as conclusive any evidence which appears to point to pathogenic organisms being carried far by aerial agency.

Every year, however, serves to impress upon us more and more the importance of the ingesta as the channel of the infection of a very large number of microbic diseases, and the probability that even here the mode of entrance of the pathogenic organism may be unexpected. rôle of water as a medium of infection seems now to be fully appreciated, and many of the epidemics of typhoid fever and cholera are easily explicable by the hypothesis that the water imbibed contained the microbe of the disease. With other substances taken by the mouth the proof is often far from easy. In some cases the article of food has merely served to convey to the patient a small quantity of infected water. Thus the cases in which typhoid fever has been incurred from eating oysters might be regarded as due to the small quantity of water enclosed in the shell of the oyster, though the organism has been found within its body. And those other instances in which milk has been the medium of infection with typhoid fever may sometimes at least be ascribed to the washing out of the cans by infected water, some of the infected water being allowed to remain within the can. But occasionally the train of events is not so easy of explanation. For example, a question has arisen which has up to the present not received any satisfactory answer. If a cow drinks water or l

drinks from a pond containing bacillus typhosus, is it possible that the milk taken from that cow should contain the organism in a condition capable of causing the disease in those who drink the milk? The evidence on the subject is very scanty, but it would be unwise to deny the possibility of the occurrence of this mode of infection. In THE LANCET of Oct. 2nd of this year we gave a résumé of a case published in the Boston Medical and Surgical Journal of July 28th, in which typhoid bacilli were proved to be present in the milk of a suckling woman who was suffering from typhoid fever. As we remarked then, there is nothing very surprising in this fact. For many years it has been known that a large number of typhoid bacilli are excreted by the kidneys, in fact, it is customary to look upon the urine as one of the chief and most important media of infection, for there is always more likelihood of absence of care in disinfection of the urine than of the stools. This being the case it might be expected that the milk of a typhoid patient would be found to contain the bacillus. It is, of course, a different matter to assume that because the milk of a patient suffering from typhoid fever may contain typhoid bacilli an animal like the cow, in which the typhoid bacillus is non-pathogenic, could excrete with its milk typhoid bacilli which it has taken in by its alimentary canal; but that the sequence of events is imaginary it would be hazardous to say. In this and similar ways some of the sporadic cases which have proved so puzzling to epidemiologists may be accounted for, but the proof of the existence of typhoid "carriers" makes it hardly necessary for us to fall back upon such explanations. If a patient who has once had typhoid fever is capable after recovery from the disease of excreting daily large numbers of typhoid bacilli for many years afterwards, the occurrence of sporadic cases of the disease in neighbourhoods where no known case of the disease has existed is easily understood, and the evidence which was considered almost conclusive at one time of the origin de novo of this disease is now seen to be untrustworthy, because it is practically impossible to prove that some carrier of the disease had not passed through that neighbourhood within some weeks of the occurrence of the sporadic case. the same way, it is hardly to be doubted that most of the apparently inexplicable cases of isolated occurrence of infectious diseases would receive a satisfactory solution could we obtain fuller particulars of the life-history of those in the neighbourhood of the patient. An official report has just been issued by the Lieutenant-Governor of Bengal on an outbreak of cholera which occurred in the Presidency General Hospital, Calcutta, and from investigations carried out by Professor HAFFKINE it would appear that the epidemic has been traced by him to a custard pudding infected by the hands of some native servants who were employed for cleansing dishes and plates in the nurses' kitchen. Examination of two of these natives showed their hands to be infective with comma bacilli, and one of them on closer examination was found to be excreting comma bacilli in his stools while apparently in normal health. This is not the first instance in which a cholera epidemic has been traced or attributed to cholera "carriers." Last year an outbreak occurred at Manila in the Bilibid prison, and the medical authorities, suspecting that prisoners (who were infected without being actually ill) were disseminating the disease, caused the stools of 217 convicts to be examined. It was found that 17 of these were "carriers." A similar examination of 376 residents of Meisic, one of the worst cholera-infected parts of Manila, also showed that cholera vibrios were present in the stools of 27 of those examined. The alleged discovery of such "carriers" is of great importance, and if confirmed it will possibly throw light on many of the obscure epidemics and sporadic cases of cholera that occur from time to time.

But because the existence of "carriers" may account for so much we must not try to make it a universal solution of difficulties. The more widely our knowledge of the bacteriology of food extends, the more is it borne in upon us that many articles of diet are liable to become the channels of infection. Recently it has been shown that the eggs laid by a tuberculous hen may contain living tubercle bacilli, and if this be true of tuberculosis it is far from improbable that many other pathogenic organisms may be able to gain an entrance into the body through the same vehicle. It may be urged that as eggs are almost always cooked before being eaten the risk of infection from this source is but small, but the cooking which an egg usually receives is quite insufficient to destroy the vitality of included micro-organisms. When an egg is lightly boiled the proteids of the yelk are not coagulated. Therefore, it is practically certain that any organisms contained therein could not be destroyed by the temperature to which the egg is subjected. Too much stress is often laid on cooking as a sterilising process. It is true that there is no other method to be compared with heat for efficacy in destroying the micro-organisms of disease, but it is rare indeed that cooking is effected at such a temperature as to sterilise the food. The interior of a loaf, even while it is in the baker's oven, never reaches a temperature sufficient to destroy living microbes, though the outside may be baked brown. This has been conclusively shown by enclosing within the interior of a loaf sealed glass tubes containing living germs. And what is true of bread is true also of meat, which is not subjected in the most thoroughly roasted joints to a temperature sufficient to be efficacious against diseases. Even when a joint is boiled and the water in which it is placed is kept at a temperature close to the boiling point, the interior has a much lower temperature. The mere fact that the interior of a joint is usually red is a conclusive proof that it has not reached the temperature of boiling water. Some processes of cooking are more efficacious than others, but the chances of the introduction of pathogenic germs in food are very great indeed, so great that the occurrence of sporadic cases of epidemic disease needs no further explanation.

One fact alone stands between us and widespread attacks of these infective diseases, and that is the naturally defensive powers of the body. Day by day all of us must take in by the air we breathe numberless pathogenic organisms; day by day we imbibe with the water we drink and with the food we take innumerable germs which, should the conditions be favourable, can give rise to disease. But fortunately

for us the conditions are generally not favourable. The natural resisting powers of the body are sufficient to counteract all these assaults of our invisible enemies, and we survive, not because we are not attacked, but because our tissues are able to withstand the attacks made upon us. In what manner this defensive power of the body may be lowered we know at present little, but advances in prophylaxis will be made by the prevention of these reductions in our defensive powers. This is the promise of the latest developments of pathology.

National Temperaments and the Ferrer Riots.

THE tragedy of Montjuich has provided the world with an object-lesson in the contrasted behaviour of the Latin and non-Latin races after the fall of the curtain on the last tragic scene. While in the English-speaking communities as well as in the German, Scandinavian, and Slav the incident has called forth profound pity for the protagonist and modified censure (pending fuller information) on the methods by which he was brought to judgment, in their Latin sisters it has evoked the most passionate, even hysterical demonstrations, proceeding to violence, against every person or thing associated, however remotely, with his supposed executioners, and exploding in collisions with the police and the military, causing civic uproar and death itself. The improvised indignation meetings, followed by processions of infuriated mobs bent on damage and destruction to the Spanish Embassies and Consulates in the chief French and Italian cities, have disturbed the peace of Europe with a repetition of deeds of violence wanting but little to reproduce some of the worst episodes of the Reign of Terror. Barricades have been run up and frantically defended, all business has been interrupted, and when, after much drastic, even sanguinary, effort, tranquillity has been restored, a general strike has been proclaimed which has, in Italy, paralysed for the time all industrial or commercial operations, and intimidated alike the citizen within and the stranger without the gates.

Whence this contrast between the demeanour of London and Berlin on the one hand, and that of Paris and Rome on the other? The better minds of the two latter cities, as conveyed in its more serious press, find the answer in racial idiosyncrasy—the Teutonic circumspection and self-control sufficing to maintain calm in presence of a provocative to which the Latin super-sensitiveness and blan blindly abandons itself. The comments of such journals as the Temps or the Corriere della Sera give emphatic expression to this finding, while other organs, French and Italian, repeat it with the invoked authority of HIPPOLYTE TAINE and KARL HILLEBRAND, both of whom in their comparative studies of their respective nationalities insist on the differentiating qualities to which Tennyson makes poetic allusion in the lines—

"Bright and fierce and fickle is the South, But dark and true and tender is the North."

TAINE, indeed, in his penetrating analysis of the Latin mind, goes so far as to say that France, and a fortiori Italy, owe much of their hyperæsthesia to not having been adequately

"Teutonised"—in other words, to not having had that proportion of the "northern infusion" which would have corrected, while not wholly crushing, inherited character, and culminating in a racial blend which, in Great Britain, for example, is manifested in the happy equipoise of Celt and Saxon, Norman and Dane. Time, plus education, may be expected to achieve a similar result in the Latin civilisation, aided as these will be by the intercourse now in rapid progress between race and race—intercourse facilitated, inter alia, by international congresses in every interest, scientific, literary, artistic, and professional.

Meanwhile it is impossible not to be impressed with the bitter irony with which the most widely diffused of Italian journals-the Corriere della Sera of Milan-contrasts the demeanour of its compatriots with that of the Englishman and the German in view of the so-called "martyrdom" of FERRER. In Germany and in England, it points out, the incident has produced no riots, no window smashing, no barricades, no dragonnades, no bloodshed, and yet in these countries there has been no lack of sympathy with FERRER or sober questioning of the procedure by which he was made to atone for his propaganda. In Germany, it continues, there is a powerful Socialist party, while England is so much the "land of liberty" as to have become the "second country" of the anarchist refugee; and yet how different their public behaviour after the events of Montjuich. But in Italy, says the cruel Italian newspaper, "we are so much more ardent, so much more impulsive, so much more susceptible! When our delicate appreciation of liberty and of justice is outraged we explode, we 'strike,' not work only, but everything and person that offends us. We are built so!" Mordant words these, coming from an able and cultured organ of public opinion; but not, we fear, given forth for the last time! "Fanciulli siamo" (children we are), said MASSIMO D'AZEGLIO, after the declaration of his country's unity and independence. "We have made Italy. We have now to make Italians." Uttered well-nigh 50 years ago, these words are scarcely less relevant in the day now passing; nay, they will continue to have their relevance till Italy realises the superiority of deeds to words in the development of a true sense of citizenship shown in a purer, higher standard of official responsibility, till she abandons short cuts to the millennium in favour of that more excellent way of steady, intelligent, undeviating work on the lines of duty, of self-abnegation, and of enlightened brotherhood.

Some Considerations of Medical Education.

THERE can be no doubt whatever that medical education supplies to thoughtful members of our profession more problems for close contemplation than almost any topic of the present day, and when we consider all that is meant by following the calling of medicine at the beginning of the twentieth century it is not surprising that there should be difficulty in training the recruits for that calling, or that there should be differences of opinion concerning numerous matters of equipment. To begin with, more than in any other unit of society the medical man has within his calling

a choice of varying careers, the careers in some instances being so totally different that it seems well-nigh impossible that any general course of training should be equally adapted for all of them. Of course, all medical men have common scientific and humane objects—namely, to eliminate disease either by prevention or by treatment; and all medical men are alike in desiring that their services should be reasonably rewarded by the public. Incidentally, we may state here that if expectations with regard to the elimination of disease are sometimes not realised, expectations with regard to earning an adequate wage are with equal frequency doomed to disappointment; but these unfortunate facts do not alter the common aims and hopes of the medical man, in the carrying out of which the methods of life adopted are extremely diverse.

First there is the practitioner, who is divided into the general practitioner, the consultant physician, and the consultant surgeon. Their lives have much in common and the education which they require is, up to a certain point, identical in all three classes. But the life of the general practitioner is a much less sheltered one and demands a knowledge of men and manners and a familiarity with business of which the consultant practitioner, great psychologist, versatile operator, and astute humanitarian though he well may be, need have no conception. Next we have the official medical man, the medical man whose whole time is occupied by sanitary, educational, or official appointments. The lives of these men are approximated closely with the lives of the upper-class bureaucracy, with the exception that in most of the public departments of the State the officials are better paid and are only expected to work between certain hours, while medical officers of health are always on duty. True, when times of stress occur in any of our public departments -the Education Office and the Admiralty are two that occur to the mind at once—no regard whatever is paid to official time, but everybody has to work as long and as hard as human endurance will allow; but this occurs on special occasions, and to a certain extent there is proper warning of its occurrence given to the chiefs. Our sanitary authorities are not so fortunate, and their medical officers, though affiliated on the one hand with the bureaucracy, share, on the other, with their brethren, the general practitioners, the greatest hardship of the medical profession-viz., that no medical man knows from day to day or from hour to hour when he may be called upon for special exertions. Yet another class of the medical profession lead the lives of pure savants—for them the laboratory is the world. They join hands with members of the medical profession at every therapeutic discussion, reinforcing the clinical tactics of the general practitioner with the etiology and the therapeutics which have been worked out with the microscope, at the chemical bench, or in various departments of physiology, psychology, biometry, and so forth. Lastly, the three Services -namely, the Naval Medical Service, the Army Medical Service, and the Indian Medical Service—and a fourth, the Colonial Medical Service, must be mentioned. They provide caroers again differing in detail among themselves and differing in many respects widely from any followed by other branches of the medical calling. This rough analysis of the classes into which the medical profession in this country falls shows at once that it would be extraordinary if differences of opinion did not arise with regard to any educational curriculum more or less designed to be suitable to the needs of all medical students.

At the beginning there is the difficulty of deciding the point up to which education must be common to all classes and where some account should be taken of the intention of the student to devote himself to one or other particular class. Everybody allows that in a liberal profession like medicine it is necessary that all the members should have a general education up to a certain standard, but as to what that standard should be there is no agreement. We have heard extremists say that every medical man should go to a university and take his degree in arts before commencing his medical career. There are, of course, men whose cast of mind is such that the proceeding exactly suits them, but there are others for whom such a measure of general education would never have any meaning at all, it would not help them in the least to develop in a useful manner, and further, it would be quite likely to nip in the bud powers of initiative and originality of impulse that would otherwise come to the front. The ideal general education, sufficiently high in standard to give its possessor the power of grasping professional subjects, and yet not so high that unnecessary time and labour have to be spent in the acquisition of the completely useless, will always be a subject of debate. All that need be said on the matter in these introductory remarks is that the examination which suits the bent of the largest number of students is probably the right one, while no standard can suit everyone. Then we come to medical education proper; and here again we find the same differences of opinion as to necessary standard. Medical education is divided into preliminary or ancillary subjects and purely professional subjects, but not divided with any sharp line. All instruction in the practice of medicine is of course a purely professional matter, while instruction in the sciences upon which medicine is directly founded-viz., anatomy, physiology, psychology, chemistry, and physics generally—is more or less preliminary. Anatomy and physiology may be termed more directly professional subjects than the others, but chemistry, for example, having regard to modern developments of bio-chemistry, can hardly be regarded as a merely ancillary subject.

With these things in our mind we are prepared to find that the subject of medical education bristles with numerous and difficult points for debate. In addition to the necessity that the general education of the medical student should be conducted to a point which is not agreed upon, and in addition to the fact that the subjects which are really germane to medical education are not settled beyond dispute, we may have to consider what amount of specialisation is necessary in a curriculum which must be designed to fit young men for the very varying careers which, as has been indicated, will lie before them. Here, again, the extremist, having first said that everybody should have a university degree in arts before he begins to do his professional work, may be found saying that everybody should have a university degree in medicine before he attempts to specialise, and that such subjects as public health and hygiene, the use of medical statistics, and the

technique of pathological developments should all be acquired as post-graduate subjects, the curriculum being merely designed to bring everyone up to a standard from which he can safely diverge along a special path. These are some of the questions the discussion of which is begun to-day in a short series of articles in our columns.

Annotations.

"Ne quid nimis."

EXPERIMENTAL PSYCHOLOGY AND HYPNOTISM.

THE Harveian Oration for this year was delivered before the Royal College of Physicians of London on Monday last, Oct. 18th, by Dr. G. H. Savage, consulting physician and lecturer on mental diseases at Guy's Hospital. The lecturer. after a sympathetic sketch of the life of Harvey and the times of unrest, social, moral, and political, in which he lived, went on to consider briefly the treatment of the insane during Harvey's day. He quoted from Shakespeare and Robert Burton, the author of "The Anatomy of Melancholy," and adduced other examples from Hack Tuke's well-known "History of the Insane in England" to show how the treatment of insanity in this country has steadily progressed from gross superstition and from a cruel punishment of the deranged to the present position of enlightened care, with its promise of further development along the lines indicated by the work of Dr. F. W. Mott and Dr. Henry Head. Having in this way reached what he called the nucleus of his address. Dr. Savage spoke in weighty terms concerning experimental psychology and hypnotism. The object of experimental psychology he said to be "to describe the complex in the terms of the simple."

From one aspect, a certain mixture of hydrogen and oxygen is identical with an equal mass of water. Although the hydrogen and oxygen remain undestroyed during the transformation into water, we cannot overlook the fact that important alterations have taken place in their relationship to one another; they are fused, and are no longer a mere mixture. So, too, in psychological examples several tonal sensations fuse to create a new expression of temper. But both chemistry and psychology must recognise the inexplicable nature of the fusion. But this is more suggestive than exact, as the personality of the subject has to be added and considered. In the study of sensation experimental psychology proceeds hand-in-hand with the physiological; but, in regard to memory, comparison and mental work, we are indistinctly connected with a physiological basis. It is only in comparatively simple conditions that the physiological worker can accurately predict what reaction will recur with a given stimulus. The living body is characterised by unknown vital activities, as well as by known mechanical activities. The variability, not only among individuals but in the same individual, is supposed to be against the existence of any science of experimental psychology; but the object is to study Nature, and the variations and properties of mind are affected by different conditions. It is the aim of all science, and the sim of experimental psychology, to analyse, as far as possible, the conditions which may be at work, and to determine the result which must follow provided that these conditions exist.

With regard to hypnotism Dr. Savage's welcome of modern work and recent developments was no less frank. He said that he felt strongly that the time had come when the medical profession must face the fact that though in all directions there is a tendency towards credulity it was absolutely necessary that science should explore and develop the hinterland of philosophy and psychology, and especially the relationship between hypnotism and medical and surgical treatment.

"It has now been found," he said, "by long experience, that there are certain forms of disorder that are better treated by hypnotism than by anything else. It is quite certain that hypnotism alone may not be all that is required, and there. I think, a mistake is frequently made. It is thought that it must be hypnotism and nothing else. But one's experience is that surroundings and general conditions are as important for the treatment as the hypnotism itself...... Many nervous cases might be cured without hypnotism, but such cases, in many instances, would be cured more quickly and more satisfactorily by the use of hypnotism. It is certainly contra-indicated in the very highly neurotic. I think those coming of very insane stock should rarely be subjected to its influence. Those who are actually insane are rarely, if ever, influenced by it. Epileptics, as

a rule, do not benefit in one way or another. To put it shortly, nervous disorders that do not depend upon organic brain disease, those mental disorders that are purely functional, and such as do not cross the insane border-line, may be benefited. It has been said against hypnotism that it treats symptoms and does not treat the disease, but it seems to me pretty certain that in many cases if you can alleviate the symptoms you go a long way to cure the disease. In fact, in many cases the symptom is the most serious question; if, for instance, pain is disturbing digestion, rest, and general mental capacity, the relief of pain places the patient on an altogether different footing to that on which he was before. In the same way with sleeplessness. It you can relieve sleeplessness, in many cases the fundamental cause of that sleeplessness may be better treated."

The importance of experimental psychology is becoming generally recognised by the medical profession, and though until recently this country has decidedly lagged behind in the matter of practical investigation, there is now a mass of work being done of great promise for the future.

THE REMOVAL OF SNOW IN THE STREETS.

This is not a violent forecast of winter in mid-autumn. but it is just as well to be reminded of the problem of the removal of snow in our streets before the season approaches when we may expect a visitation. There can be little doubt that a snowfall in a busy city is not only a source of inconvenience and of hardship to traffic, but of prejudice to the health also. According to a useful plebisoite of opinion recently obtained by the town clerk of Lambeth on the question, it would appear that in 10 cases of British cities-namely, Aberdeen, Bradford, Bristol, Greenock, Inverness, Leeds, Leicester, Newcastle, Nottingham, and Paisley—the opinion is that a general use of salt for the removal of snow is objectionable from a public health point of view. In the majority of these opinions it is stated that either slush of a low temperature or a freezing mixture is formed which is at least unpleasant for, if not dangerous to, pedestrians, and is distinctly injurious to animals' feet and to foot passengers with defective footwear. The medical officer of Nottingham states in addition that the use of salt is objectionable on account of the deliquescent salts of magnesium present. From other cities various views come. There is a difference of opinion at Edinburgh and Hull, at both of which places salt is used. In both cases the medical officer is strongly of opinion that the use of salt is an objectionable practice, on account of the low temperature of the mixture and the danger to horses' feet and the footwear and health of pedestrians. The city engineers, on the other hand, are in favour of the application of salt. In the case of Hull the city engineer states that he has made copious inquiries amongst horse owners, the majority of whom were urgent for its use, and in addition the temperature of salted and unsalted snow has been taken without any measurable difference having been found. This is a curious finding, because the snow in melting necessarily depresses the temperature, the use of freezing mixtures being based on that fact. The city engineer's opinion is that without applying salt it is impossible to maintain traffic on wood paving. The city road surveyor of Edinburgh considers that salt does no appreciable injury to paved roads, but tends to break the surface of macadamised roads. The medical officers of Dundee, Liverpool, and Manchester consider that no actual harm results from the method of applying salt in their respective cities, though in the case of Manchester it is stated that no doubt people with defective boots suffer severely. At Glasgow the need for salt is so infrequent that the medical officer considers it would be difficult to separate out the illness attributable to the use of salt from the general mass of lung troubles prevalent in snowy weather. The opinion of the medical officer of Leith is that the question is not one influencing public health, save from the danger to persons by saturated footwear. The medical officers of Birmingham, Norwich, and Sheffield do not express any

opinion on the matter. In the cases of Berne, Copenhagen, Frankfort, and Leipzig it is stated that no decision has been arrived at as to the advantages or disadvantages accruing from the application of salt, whilst from Breslau and Munich no reply has been received to the question. In the opinion of the authorities responsible for the clearing of the snow at Antwerp, Berlin, Dresden, and Hamburg, the use of salt is prejudicial to public health, the usual grounds for objection being alleged; the reply from Antwerp also states that if small quantities of salt are mixed with ashes the practice is not objectionable when applied to roads first cleared of the bulk of the snow. Some years ago at Amsterdam certain of the tram horses' feet were said to have become diseased through the use of salt, but no complaints of injury to persons have been received from this city; the opinion is expressed, however, that people whose footwear is impregnated with the mixture of salt and snow are apt to catch cold. It is reported from Paris and from Christiania (in which latter place, however, salt is not used except at points and switches only of the tramways) that no danger or disadvantages arise from the use of salt. The opinion at Cologne is that the interest of public heath is little influenced by the use of salt. Salt is used very sparingly and snow is removed immediately at The Hague, so that no complaints as to its use have as yet been made. However effectual salt may be in removing snow, there can be little doubt that the resulting mixture is most unpleasant to pedestrians, and inasmuch as even good leather does not appear to be proof against the cold slush, there is reason for believing that the mixture gives rise to injury to health. It is a pity that flooding snowbound streets with a plentiful supply of hot water is so far impracticable in our cities.

"LATE RICKETS."

WE publish on another page of our present issue an interesting note by Dr. Francis Hernaman-Johnson on a case of the type to which the term "late rickets" is often applied. The patient was a girl, aged 13 years, without any history of rickets during infancy, who at the beginning of her menstrual life began to have difficulty in walking and subsequently developed bending of the legs. This was followed by extensive deformities of the lower limbs and by a left dorsal scoliosis. In spite of treatment by instruments and by prolonged rest the condition, apart from a temporary amelioration while in bed, showed no improvement while under observation. The unfortunate application of the term "rickets" with or without a qualifying adjective to almost any condition producing general deformities in the bones in infancy and childhood has undoubtedly led to confusion and has probably hindered the recognition and separation of some obscure conditions of disease or defect in ossification. That various causes may produce gross results apparently similar is highly probable in regard to a process such as ossification in the skeleton, where many of the resulting deformities depend upon the effects of posture and upon the support of the body by weakened limbs. What is wanted in these cases is further information as to the histological and chemical changes associated with them. Dr. Hernaman-Johnson very rightly points out that in his case the relationship with infantile rickets appears more than doubtful, and asks if it is not wiser to admit frankly that we do not know the etiology of such conditions. There can be little doubt that the term "late rickets" is applied to several distinct affections. It is possible, as Dr. J. F. Goodhart and Dr. G. F. Still suggest in their well-known work on "The Diseases of Children," that some of the cases may be due to recrudescent rickets, since there is no obvious reason why similar changes may not develop during later childhood

to those that occur in the infantile period, seeing that the skeleton is still in an active state of growth, and in a case recorded by Dr. F. G. Dawtrey Drewitt the changes found post mortem in a boy aged 11 years presented characters similar to those in infantile rickets. Probably some of the cases are due to a process akin to osteomalacia or to some as yet unrecognised disturbance of the process of ossification. Owing to the comparative rarity of these conditions observations on fatal cases are extremely few, and it is to be hoped that all such cases will be recorded. It is of interest to note that Dr. Emmett Holt 1 states that he has not seen this disease and that no case has been seen during the past 20 years at a hospital in New York where large numbers of deformities are seen. Dr. Hernaman-Johnson suggests as a possible factor in the etiology of some of these cases some change in the internal secretion of the generative glands, since some of them occur, as in the case which he narrates, at puberty, and he points to the bony and arthritic lesions which may occur during pregnancy and at the menopause in support of this suggestion.

PATHOLOGY AND THE STAGE.

THE translation of a play by M. Brieux is now being acted at His Majesty's Theatre. M. Brieux is one of the chiefs of that interesting group of French dramatists whose subjects have been drawn from the realm of pathology or from that of legal medicine. His writings, along with those of François de Curel, Bruyerre, Henriot, Le Senne, and Mayer, have been discussed and described at some length by M. Eugène Eyriès in a Montpellier thesis ("Les Idées Médicales dans le Théâtre Contemporain"). According to this writer, M. Brieux has not hitherto been favourably known from the scientific point of view. His earliest work. "L'Evasion" (1896), deals mockingly with ideas about heredity and is a violent attack on medicine and its practi tioners. "Les Remplaçantes" deals with wet-nursing and the highly contentious question of the endowment of motherhood, and "Les Avariés," censored in Paris in November, 1901, has for its subject the marriage of persons with constitutional disease. These are pathological plays on subjects which cannot properly be treated outside the sphere of professional or expert literature. A folk-lore play, however, is on quite a different footing. And "False Gods," the translation of M. Brieux's "La Foi," is emphatically a folk-lore play. No one can object to a satire on medicine in a drama purporting to present an accurate picture of pre-historic times. In "False Gods" the medical man of ancient Egypt is represented as a sorcerer in league with the funeral dancers, who themselves represent the undertaker of modern times. In his character as magician he utters highly poetical incantations over a dying man, who is relieved when he (the sorcerer) gives up the case with the remark that the evil spirits are winning in the fight over the perishing body and that he will send the funeral dancers round. Akin to the sorcerer medicineman is the High Priest, impersonated with infinitely dry humour by Sir Herbert Tree. This personage sums up the philosophy of the ancient Egyptian priesthood in the short lecture delivered by him to a recalcitrant young priest. "Of course," says the High Priest in effect, "we Egyptian priests don't believe a jot of what we profess, but we are wise enough to keep the people in the trammels of superstition in order that they may support the hierarchy with their offerings of corn. Nor are we to blame in fleecing them in times of prosperity, for thus we fill the granaries against periods of famine. In the same way we bid the people worship the jackal and the bull, for the jackal is a useful

scavenger and the bull is responsible for the continuance of our meat-supply." Such, in effect, was the doctrine of all primitive priestly castes, of the Egyptian, perhaps, especially. Apart from its art, such a play as that now being acted at His Majesty's Theatre is interesting as showing that medical ethics really have improved in the course of ages, and that the deception of the public for their good has long ceased to form part of an esoteric philosophy of the scientific or of the governing classes. The modern scientific spirit aims at getting the support of the public by enlightening them, not by frightening them.

THE CRITERION OF COLOUR.

THE impressions which the public have in regard to the colour of food are interesting, but their instinct in this matter may easily be deceived by modern tricks. For some not quite clear reason there are many people who look upon the brown egg as necessarily a new-laid one, and hence a fair demand for brown eggs has arisen, which is easily met not by the honest brown egg, but by the white egg which has been steeped in a dye which renders it visually indistinguishable from the real article. Again, when milk happens to be of a buff tinge it is commonly held to be richer than white milk. Of course, nothing can be easier than to satisfy this preference for a milk of a creamy shade. White-looking butter is disliked as looking too much like dripping. The remedy is simple: it is artificially coloured. Vegetables must be bright green to make them look fresh, the consumers of them being quite willing to ignore the fact that copper does not make them fresh or wholesome. On the other hand, curiously enough, bread must be white, and not the slight brownish colour natural to the flour from which it is made. It is, of course, perfectly natural to take colour as a criterion of the dietetic value or flavour of food, and the attractive or unattractive appearance of food may make all the difference as to whether that food is, or is not, assimilated properly. The deceit which is practised by artificially colouring food may thus serve a useful purpose, so long as the colouring matter is harmless, but as a rule the proceeding is an immoral one. It does not follow that because food is unattractive its value as a food is nil, while every form of sophistication is open to commercial abuse. A correspondent last week submitted to us a brown-shelled egg which on opening displayed a gorgeous red colouring scattered chiefly through the white. On analysis the colouring proved to be an aniline dye. The dye had deposited a nice brown on the shell, but an excess had permeated its pores and, meeting with the slightly acid contents, was changed to a port-wine Until the egg was opened, therefore, it colour inside. appeared perfectly attractive, but on opening it the zest to eat it quickly disappeared. There is practically no control over the colouring of foods in this country, and it is obvious that in some instances protection is desirable. If colour is used to give a false appearance of quality there can be no doubt about that being fraud, but whether it is a mischievous fraud depends on particular circumstances.

ASTHMA AND URTICARIA DUE TO AN ICE-CREAM.

In the Australasian Medical Gazette for August Mr. T. I. Wallace has reported the following interesting case. He was called to a woman who suddenly became ill in a shop where she had taken a glass of ice-cream followed by a tumblerful of cold water. In a few minutes she was seized with great dyspnœa, accompanied by running at the nose, lacrymation, and sneezing. Her mother, who was with her, said she became black in the face. Mr. Wallace saw her about a quarter of an hour after the beginning of the attack.

¹ Diseases of Infancy and Childhood, fifth edition, 1909.

She was sitting on the edge of a bed in a room behind the shop and was feeling a little better. She had still great difficulty in breathing and in consequence was unable to lie down. Her face was very cyanosed, there were free running at the nose and watering at the eyes, and she was covered all over with an abundant urticarial rash. There was a history of one or two similar attacks in childhood which were brought on by drinking cold water when she was over-heated. In a short time she improved and could be taken home. The association of the urticaria with asthmatic symptoms is of considerable interest. It bears out the hypothesis of the late Sir Andrew Clark, which is not generally accepted, that asthma is due to a vaso-motor neurosis analogous to that which occurs in the skin in urticaria. It is well known that in rare cases of urticaria, particularly in the form known as giant urticaria, or acute circumscribed or angio-neurotic cedema, mucous membranes, such as that of the tongue, stomach, intestines, or larynx, may be involved. Angio-neurotic ædema of the larynx may cause sudden death by suffocation. The association of asthma with urticaria is a recognised but rare event; in some cases an attack of urticaria has appeared to take the place of an attack of asthma.

THE TREATMENT OF VIPER BITES.

THE bite of the only venomous snake of this country is rarely recorded in the medical journals, partly because this form of injury only occasionally occurs, but also partly because vipers are most numerous in out of the way parts of Great Britain. The entire absence of the viper from Ireland and the Isle of Man is very remarkable, whether we accept or reject the legend which ascribes it to the action of St. Patrick. Even should a person be bitten by a viper a fatal result is rare, though severe symptoms are always produced. Occasionally, however, death follows the bite of a viper, and it is desirable that all medical men practising in the country should be acquainted with the best treatment of this injury, for the earlier in the case the remedies are applied the more effective they prove. On another page of our present issue we publish an account by Dr. B. B. Sapwell of Aylsham of a boy being bitten on both hands by a viper. Much shock followed, with enormous swelling of the hands and forearms. The treatment adopted consisted in the application of a Bier's elastic bandage to each arm above the elbow, incisions into the swollen part. and the local application of permanganate of potassium. Later some antivenom serum was injected, and ultimately recovery followed. Several points of interest are raised by the treatment adopted. The use of the Bier's bandage doubtless served to restrict the absorption of the poison without interfering with its arterial blood-supply, and the incisions not only relieved the tension of the parts but allowed the draining away of the venom-infected lymph. It is probable that the employment of Bier's suction method to the bites would have been efficacious in abstracting the poison, especially as the bites were inflicted on fingers to which Bier's glasses could easily be applied. The value of the permanganate of potassium in snake bites has often been shown, but it can hardly reach much of the venom, though where the poison can be reached the permanganate is able to destroy it. The main interest, however, attaches to the use of the antivenom serum. This, as sold in this country, is prepared by the use of the venom of several of the more poisonous snakes, including the cobra and the daboia, and it has been shown to be efficacious against a very large number of them. In the case to which we have referred it appears to have been of use, and it is clear that it did no harm. It should certainly be injected in all cases of viper bites, and the sooner this is done after the infliction of the injury the greater the probability of success. The main

obstacle to its use is the difficulty of obtaining it promptly elsewhere than in the chief towns. We referred to this subject in THE LANCET of August 21st last, p. 585, when we summarised Professor Calmette's directions for the treatment of viper bites. We congratulate Dr. Sapwell on the success which attended his prompt and intelligent course of treatment.

THE WORKING OF THE MIDWIVES ACT.

AT an inquest recently held in the City by Dr. F. J. Waldo several points came under discussion in connexion with the operation of the Midwives Act, 1902. A medical man had been called in to a confinement under the advice of a midwife, given under her statutory obligation to do so, and he had attended, as he stated was his practice, without any certainty or, it might be added, any expectation of receiving a fee for so doing. This hardship has now continued for some years, although locally some attempts have been made to abate it. It is a matter in which the proper remedy must come from the legislature which has created the difficulty, and the Report of the Departmental Committee on the Working of the Midwives Act has endorsed this view so strongly that we can hardly imagine that the abuse will go long unheeded. The question of who may be adjudged ultimately liable should not affect the safety of the patient or the position of the medical practitioner. The midwife acting under the rules of the Central Midwives Board has been compelled to advise that he should be summoned, declining, meanwhile, to attend alone; and owing to the form in which the summons is sent it is in effect the midwife's appeal for medical assistance, although, strictly speaking, it is that of the patient or her relatives acting on the midwife's recommendation. At the inquest before Dr. Waldo it was not shown that any blame attached to the midwife in respect of her attendance, the body being that of a child for whose still-birth natural causes had been responsible. The qualification of the midwife was, however, inquired into, and it was found that she had been struck off the midwives' roll two years before, and her request for re-instatement had not been granted by the Central Midwives Board. She was an Austrian, and the father of the child was a German Pole. It will be remembered that at present this woman, as any other, whether enrolled as a midwife or not, is permitted to practise as such, but not to take or use the title of midwife or any other description or title implying that she is certified under the Midwives Act, 1902. After April 1st, 1910, however, a new state of affairs will arise and uncertified women will be forbidden by law to practise at all. The subsection dealing with the matter may be quoted, as the time is drawing near for its legal enforcement and, as will be seen from the wording employed, such a process is not likely to be altogether easy.

Section I., Subsection 2: From and after April 1st, 1910, no woman shall habitually and for gain attend women in childbirth otherwise than under the direction of a qualified medical practitioner unless she be certified under this Act. Any woman so acting shall be liable on summary conviction to a fine not exceeding £10, provided this section shall not apply to legally qualified medical practitioners or to anyone rendering assistance in a case of emergency.

It will be seen from this that the offence to be proved against an uncertified woman acting as a midwife will not be that she so acted in a single case, for hire or otherwise, but that she does so "habitually and for gain." The two essentials of habitual practice and of remuneration will often not be found easy to establish, and presumably if proof of two or three cases only is adduced the defence that "assistance was rendered in a case of emergency" will frequently be raised. It will be interesting to see how this section works in practice. It will not be forgotten that it involves a principle of great importance, affording, as it does, to parturient women

a protection against women not qualified to attend them. Similar protection in pathological troubles is not vouchsafed to the other members of the public or to women not in child-birth. Other unqualified practice of medicine and surgery remains uncontrolled and women in childbirth can employ "men midwives" who are unregistered, so long as these men do not pretend to be on the Medical Register.

EXOPHTHALMOS IN CHRONIC NEPHRITIS.

In the American Journal of the Medical Sciences for October Professor L. F. Barker of the Johns Hopkins University and Dr. F. M. Hanes have called attention to a remarkable sign of chronic nephritis which does not appear to have been previously noticed—exophthalmos. During the first four months of the present year 33 patients suffering from chronic nephritis were admitted to the Johns Hopkins Hospital, and exophthalmos was found in 16 (48.4 per cent.). The exophthalmos varied much in degree as did the gravity of the nephritis. In cases showing evidence of serious intoxication (uramic or suburamic symptoms) exophthalmos was most frequent and was combined with one or more allied ocular signs-anisocoria, von Graefe's, Moebius's, or Stellwag's sign. Exophthalmos was an obvious sign in all the patients who died from chronic nephritis in the hospital since Jan. 1st, 1909. Also in the cases in which albuminuric retinitis was present during this period exophthalmos, with one or more of the other ocular signs, was always present. All these classical signs of Graves's disease may be present in chronic nephritis without any apparent affection of the thyroid gland. Professor Barker and Dr. Hanes therefore conclude that in both diseases a chronic intoxication affecting the sympathetic nervous system causes the ocular manifestations. In 12 out of the 16 cases there was high blood pressure (above 160 millimetres), but its absence in the other cases shows that the exophthalmos cannot be ascribed to it. Evidently both conditions are due to chronic intoxication. The following are two of the cases. A painter, aged 51 years, and addicted to alcohol, was admitted on Jan. 15th, 1909, complaining of severe pain all over the body and headache. In 1901 he was treated for lead poisoning and peripheral neuritis. He was subject to severe headaches as long as he could remember. His sight had been failing for the last five years and for the last two years he had suffered from attacks of palpitation and orthopnœa. He passed large quantities of urine by day and night. He was thin and ansemic, and his skin was dry and harsh. The eyes were prominent and staring. The heart was slightly enlarged and the arteries were sclerotic. Ophthalmoscopic examination showed albuminuric retinitis, cedema, exudation, and hemorrhages. The urine was pale, of specific gravity 1012, and contained albumin, many granular casts, and pus and epithelial cells. On the day after admission convulsions occurred, and on the following day the patient died. At the time of death the exophthalmos was much less marked. The necropsy showed advanced acute and chronic diffuse nephritis, cedema of the brain, hypertrophy of the heart, broncho-pneumonia, pleural cedema, and acute pericarditis. In another case a metal polisher, aged 46 years, was admitted on March 4th, 1909, complaining of shortness of breath and pain in the back and left side. His illness began four weeks before with dyspnœa and palpitation. He got up six or eight times at night to pass urine. His legs were sometimes swollen in the mornings. He was well nourished. The eyes were very prominent and the conjunctivæ were alightly edematous. The pupils were small and reacted to light. Moebius's and Stellwag's signs were present. There were marked retinal arterio-sclerosis and typical albuminuric retinitis. The heart was enlarged and marked general

arterio-sclerosis was present. The urine was increased in quantity, pale, of specific gravity 1012, and contained albumin and hyaline and finely granular casts. The blood pressure was high, ranging from 200 to 230 millimetres of mercury. The patient's family said that his eyes had grown prominent in the last eight months.

PROFESSOR OSLER'S ADVICE TO LONDON STUDENTS.

On Oct. 15th Professor William Osler visited the London Hospital to declare open the new laboratories for chemistry, physics, and pathology, which have been erected recently at a cost of some £8000. He was received by the Principal and the Vice-Chancellor of the University of London. Mr. Sydney Holland, chairman of the hospital, and the staff and lecturers of the hospital, who conducted him through the new laboratories, after which the opening ceremony was held in the Physiological Laboratory under the presidency of Dr. Leonard Hill. Professor Osler delivered an address which was divided between the praise of research and the impeachment of the University of London for not having found a way to provide a readily accessible M.D. degree for the industrious London student. Of research he said that every student should cultivate it without thought of examinations, and that he should regard it as the complement of his clinical studies and not as a thing apart. Of the University of London he declared that there was "something rotten in the State," and reminded his hearers that "the Lord helps those who help themselves." In a word, the students should organise and agitate in a constitutional manner, and then they would get their degree within a year or two. The Vice-Chancellor, who replied to Professor Osler, threw the blame on the Faculty of Medicine with its 400 teachers, which, although the University had been reconstituted for nine years, had not sent up a definite proposal on the subject that could be considered by the Senate, a quarter of whose members had medical qualifications. He supported Professor Osler, however, in his advice to the students to organise to deal with the matter. The proceedings were brought to a conclusion by the delivery, in the library, of Professor Osler's Schorstein address on the Relation of Aneurysm to Syphilis.

BRITISH RADIUM.

THE announcement that radium is to be both quarried and recovered from its ore in England must be regarded with satisfaction. We believe, however, there are still mines in Cornwall from which a comparatively rich pitchblende is sent to Germany for the extraction of its radium. The foundationstone of the radium and uranium works of the St. Ives Consolidated Mines, Ltd., and the British Radium Corporation, which are to be erected in Limehouse, was laid by Lady Ramsay on Saturday, Oct. 16th. It appears that some stimulus has been given to the enterprise by Sir William Ramsay's discovery of a process which will considerably diminish the time taken to recover radium from its ore. Hitherto the process has involved some months' working. whereas now it is stated that it can be done in as many or even less number of weeks. This is a step of considerable importance, having regard to the infinitesimal quantity of radium present in the raw material. Sir William Ramsay said that when his attention had been called to the occurrence of pitchblende in Cornwall he did not foresee that the demand for radium would be great, while he also thought that the difficulty of supplying it would be considerable. With the formation of a radium institute he felt bound to withdraw his former opinion. . The question whether subsequent investigation will show radium to be of still greater

value in medical science must remain open. So far the results had been encouraging, and the success which has attended the application of radium rays in some diseases is rapidly opening up new questions of the greatest interest. But what we may term photo-therapy is still only in its infancy, and as the analysis of radium rays proceeds it is just possible that rays of the nature of radium rays may be obtained by mechanical means, in which case we should not be so dependent upon radium. That would be an undoubted advantage, seeing what small quantities of radium are available and what labour is involved to separate them.

THE LATE PROFESSOR LOMBROSO.

Professor Cesare Lombroso, who died suddenly from heart disease on Tuesday last at his residence in Turin, had a world-wide reputation as the author of works which have greatly exercised the minds and pens of criminologists, psychologists, social reformers, and other students of human degeneracy in its various aspects. Of Jewish descent, he was born at Verona in 1835, took a medical degree at Padua, and served in the Italian campaign against Austria in 1859. His literary career commenced at a very early age, and was for more than 40 years extremely successful, although the somewhat fantastic ideas embodied in several of his works have gained but few adherents in England. His "L'Uomo Delinquente" and "L'Uomo di Genio" contain a full presentment of his anatomical, pathological, and atavistic theories of crime and genius.

A TYPHOID CUTANEOUS REACTION.

IN 1907 von Pirquet described his tuberculin cutaneous reaction, which was soon after followed by the announcement of the tuberculin conjunctival reaction by Calmette. Inspired by these discoveries Professor Chantemesse investigated the effect of the toxins of the typhoid bacillus on the conjunctiva in typhoid fever and discovered a typhoid reaction analogous to the tuberculin reaction. Calmette's reaction proved a trustworthy test for the diagnosis of tuberculosis, but in some cases the reaction proved severe and even provoked ulceration of the cornea. Hence it has been to a large extent abandoned in favour of the safer cutaneous reaction. In the University of Pennsylvania Medical Bulletin for August Dr. S. J. Deehan has described a typhoid cutaneous reaction analogous to the tuberculin cutaneous reaction which promises to be useful in the diagnosis of typhoid fever. He undertook the investigation because the dangers of the tuberculin conjunctival reaction suggested to him that the typhoid conjunctival reaction might also be dangerous. His technique was as follows. A strain of virulent typhoid bacilli was grown on agar-agar for 24 hours. The bacilli were then washed from the medium with normal saline solution and shaken up in a test-tube so as to distribute them and break up the clumps. The fluid was incubated for four days at 37.50 C. At the end of this time it became partly clear from sedimentation of the bacilli, which were more or less disintegrated. The fluid was then sterilised at 60°C. for half an hour, and centrifugalised for from two to six hours. The clear supernatant fluid was pipetted off into sterile tubes. The number of bacilli per cubic centimetre was determined by Wright's method of standardising vaccines. A solution of the strength of three billions of bacilli to the cubic centimetre was found to give the best results. The fluid was tested by cultures to ensure its sterility—a point of great importance. This fluid contained the toxin of the bacilli. The more virulent the bacilli used and the less they were modified by cultivation, the more powerful the extract. The fluid retained its strength for several weeks and then gradually grew

weaker until nearly inert. The cutaneous reaction was obtained as follows. A drop of the fluid was placed on the skin, and then with a lancet a slight abrasion was made under the drop. Only the most superficial layers of the epidermis need be removed, as it is necessary only to open the superficial lymph channels and unnecessary, and even undesirable, to draw blood. At a distance of about an inch a control abrasion should be made under a drop of normal sterile saline solution. There are three grades of positive reaction: 1. A feeble reaction, which consists of a hypersemic zone 2 to 4 millimetres in diameter, in the centre of which is a papule; the skin is slightly swollen and hard. 2. A medium reaction. The hyperæmic zone is 4 to 8 millimetres in diameter and there are numerous very prominent papules. Sometimes the skin is ædematous throughout the area. The redness may persist for hours or for one or two days. 3. A strong reaction—an intensification of the last reaction. The area of reaction is very resistant to touch and the area of hyperæmia is 2 to 3 centimetres in diameter. If the subjacent cedematous area is marked there is an appearance of urticaria. Occasionally at the points of scarification serous fluid exudes. 12 cases diagnosed clinically as typhoid fever gave a positive reaction in from 15 to 24 hours. The day of the disease on which the test was applied varied from the seventh to the twenty-second. The test did not cause the patients any annoyance or discomfort. The test was also tried in eight control cases of various diseases—heart disease, neurosis, acute gastritis, chronic bronchitis, acute rheumatism, pulmonary tuberculosis, cardiac asthma, and cancer of the uterus. In none was there the slightest evidence of a reaction. Dr. Deehan concludes that the typhoid cutaneous reaction is of considerable diagnostic value and is without danger. It was frequently obtained several days before a positive result with the Widal test could be got, and therefore in a doubtful case would enable a diagnosis to be made earlier than by this method. But its greatest value lies in the fact that it can be performed by the practitioner himself without any laboratory assistance.

THE PHARMACOLOGY OF THE LEECH BITE.

THE leech, it seems, is to take a place among those empiric remedies which in these later scientific days have been established by the discovery of a rational basis for their employment. Wiel and Boy6,1 in comparing the effect of a true leech-bite with that of the scarification made by an artificial leech, call attention to their observation that while hæmorrhage ceases soon after the removal of the latter blood continues to coze from the wound of a leech long after it has gorged itself and fallen off, in some cases for as long as 36 hours. Moreover, the clot which forms at the end of this period is soft and non-adherent, and if it be lifted off the wound bleeding may start again. A study of the blood collected from a leech-bite shows that in its method and rate of coagulation it imitates that of the blood in hæmophilia, and the likeness is completed by the effect of adding human serum, two drops of which suffice in both cases to accelerate the process of clotting. The retardation of clotting was found to vary in the blood from different leech-bites, and this variation was further shown to depend, not on the patient, but on the leech. This tallies with the observations of Haycraft, who found a substance hostile to coagulation in the head of the leech, contained apparently in certain salivary glands. This substance, as Weil and Boyé show. exercises its influence mainly, but not solely, at the spot bitten; the coagulation time of the blood from remote

parts is also increased, and recurrences of epistaxis have been recorded in persons to whom leeches had been previously applied. Again, injection of leech extract into rabbits brings about a condition of affairs which is a good imitation of hamophilia. The writers conclude with the rather ambitious statement that bleeding by means of leeches possesses all the advantages of phlebotomy without any of its drawbacks.

THE LONDON MILK-SUPPLY.

BETWEEN July 1st and Oct. 8th, 1909, 645 samples of milk sent to London railway termini from the home and western counties have been examined on behalf of the London County Council. The examination of 578 of the samples has been completed to date, with the result that 33, or 5.7 per cent., were proved to be tuberculous. Since the Council obtained powers to take samples (under their General Powers Act of 1907) 1721 samples have been taken and 1254 of these examined, 114, or 9 per cent., being proved to be tuberculous. The powers granted to the Council under the same Act to visit farms outside London have been made use of to a considerable extent. 53 farms were visited during last quarter and 2067 cows inspected, 27 of which suffered from tuberculosis of the udder. Since the Act came into operation on July 1st, 1908, 12,170 cows have been examined and 289, or 2.4 per cent., found to have tuberculous udders. The whole of this useful work in safeguarding the milk-supply of London is being done at a cost of a little more than £1000 a year.

THE IMPERIAL MALARIA CONFERENCE.

In our issue of Sept. 25th we gave an outline of the circumstances in which the Government of India had decided to convene a conference of delegates from local governments to examine a number of questions relating to malaria. This conference, which met at Simla on Oct. 11th. has now concluded its sittings and has made recommendations very much on the lines which might have been anticipated. According to the report furnished to the Times by Reuter, these recommendations have been drawn up under six main heads, of which the four first are in substance as follows: (1) The appointment by the Government of India of a scientific investigation committee for inquiry into the distribution of malaria in India, its epidemiology, and the action of quinine and other remedies : (2) the checking of existing vital statistics so as to determine the exact causes of death; (3) practical measures, including the extirpation of anopheles, drainage operations, the introduction of fish into tanks and other collections of water, and the oiling of certain collections of water; and (4) the use, sale, and distribution of quinine.

THE ENDOWMENT OF RESEARCH.

Dr. R. O. Brown of Preston has generously promised to continue for a further period of two years the pathological scholarship of £150 per annum which he has founded in connexion with the Committee for the Study of Special Diseases in Cambridge. It will be remembered that we have reviewed the bulletins of this committee dealing with its investigations upon rheumatoid arthritis, and it is noteworthy that it has elected to study one of the chronic diseases which are as a rule unduly neglected in research although they cause a far greater sum of human suffering than do the acute disorders which are so much more striking in their manifestations and more dramatic in their cure. But the chief point of interest and encouragement about the work of the Cambridge Committee is that it has largely been made possible by the generosity of an individual member of the medical

profession, and we commend this excellent example to those who are in a position to follow it, be they medical or lay. No better benefaction can be made to the commonwealth than the endowment of medical research, but although the responsible body of educated opinion in this country is on the side of truth and enlightenment such endowment is still scanty. All medical men should preach the necessity for the endowment of scientific work; it is only the lot of a few to be in a position to make gifts, but when such a one comes forward his action is doubly welcome.

RESULTS OF VARIOUS TREATMENT OF KERATOCONUS.

KERATOCONUS or conical cornea, which occurs about once in ten thousand cases of eye disease, is, we are told by Mr. J. Herbert Parsons, probably in the majority of cases a congenital affection. De Schweinitz, on the other hand, remarks that it is rarely congenital, usually developing after the age of 15 and in women. Its etiology is unknown and it has been seldom examined microscopically. By some it has been attributed to increased intraocular pressure; by others to malnutrition consequent on exhausting illness, menstrual disturbance, and chronic dyspepsia; by others to defective embryological development; and by others again to some affection of the uveal tract. The cornea when examined under the microscope has been found to be thinned near the centre, but with the membrane of Descemet unaltered. The membrane of Bowman was also thinned and wrinkled and there were spaces in the superficial layers of the epithelium. The apex of the cone is usually nebulous. In well-marked cases the conical form of the corneal protrusion is striking when the cornea is viewed laterally as is well shown in a figure by Ball. The symptoms in the early stages of slighter forms of the disease are those of astigmatism, but in the higher degrees there are headaches, pain in the eye, near sight, polyopia, and great impairment of vision. It is a slowly progressive affection, but neither ulceration nor rupture occurs. At the last Congress (1909) of the French Ophthalmological Society questions were proposed as to the best treatment of keratoconus and how long the effects lasted. M. Parisotti was charged with the duty of reporting on the subject In the course of his remarks he observed that amongst the many letters which he had received not one had made any allusion to the duration of the results obtained. Nevertheless, as he truly remarked, it is impossible to formulate with precision any judgment founded on the various modes of dealing with this condition. In an article contributed to the Recueil d'Ophtalmologie (No. 8, 1909), M. Ch. Sauvineau adduces two cases of keratoconus in both of which the material improvement resulting from the treatment has been maintained, in one case for 12 years and in the other for 15 years. In the first case the patient, aged 31 years, had long been under the care of M. Panas, who had treated him with myotics and compress bandage. An iridectomy was performed at the infero-internal segment of the iris, the artificial publi being narrow and at the lower part of the iris. The improvement in vision was so great that to avoid the confusion that resulted from the entrance of light through the natural pupil the most prominent point of the cornea was lightly touched with the galvano-cautery twice. Finally, the opacity was tattooed with such benefit that the patient was able to discharge his duties as a civil engineer. The second case was treated successfully with glasses. In the same journal is a note by Dr. Antonelli on the case of a young woman, aged 34 years, who was materially assisted by cylinders. In addition, as she particularly enjoyed the opera, he had specially ground for her a pair of

¹ Modern Ophthalmology, p. 344.

contact glasses (verres à contact), which, as soon as she reached her box, she was able, after inserting a cocaine tablet, to slip under the lids, and bear without discomfort for the whole evening. In addition, she applied pilocarpine night and morning, followed by a compressive bandage. Examinations have been made from time to time with test-types and have shown no increase in the development of the disease. Dr. Antonelli questions the advantage of the hydrodiascope of Lohnstein.

A TELEGRAM from the Governor of Mauritius to the Secretary of State for the Colonies stated that 20 cases of plague with 16 deaths were reported during the week ending Oct. 14th.

SOME CONSIDERATIONS OF MEDICAL EDUCATION.

I.

A Bird's-eye View of the Present Curriculum. - The Supervision of the General Medical Council. - The Merits of the

In this short series of chapters on medical education many things will be said which have been said before and said by many people. But the risk of appearing to repeat old cries must be taken if the difficult subject of medical education is to be treated of at all fully and placed before the reader in such a way that he can appreciate the questions at issue even though he have not given them much thought before. And, alas, there are many medical men who are only now beginning to wake up to the fact that the education of our students is of enormous importance.

The ground can be best cleared by giving a bird's-eve view of the curriculum so far as it is common to all the medical schools and educational bodies through which a place on the official roll can be obtained, while showing at the same time that this curriculum is supervised by the General Medical Council in such a way that whatever the machinery employed the result should be to turn out an adequately educated man. Every year the medical journals publish educational issues in which the salient circumstances of all the medical schools are fully set out-the names of the professors and lecturers are given, the fees to be paid by the students, and the prizes and scholarships to be gained. In the Students' Number of THE LANCET there will also be found full particulars of the ancillary medical schools where a certain part of the medical curriculum can be taken out, as well as a summary of the course to be pursued by students desirous of a commission in one of the services or of an opportunity to serve under Government. None of this information need be repeated here, but a few generalisations from it and from the annual reports of the General Medical Council and of the various medical schools may be given, both as an indication to show the present state of medical education and as a standpoint whence we may look a little into the future and forecast what may happen and express hopes as to what should happen—the processes being not necessarily identical.

The position of medical education in Great Britain and Ireland at the present day is in a similar plight to the professional position; there is much that calls for criticism and much that needs reform, but the story is one of progress. Medical education is in many particulars open to amendment, but the principles, as laid down by the statutory educational bodies and endorsed by the General Medical Council, appointed by Act of Parliament as the coordinating authority, are sound, and this point is one that cannot be too much insisted upon in view of the frequent detraction from the work of the General Medical Council. The desire of the

General Medical Council ever since its institution has been to secure an adequate curriculum for the medical student, so that the medical practitioners of England, Scotland, and Ireland, through whatever qualifying body as a medium they may enter the medical profession, should discharge their duties in accordance with a due, even a high, standard of efficiency. As this has also been the aim of the variousqualifying bodies, the great majority of which were in existence years before the institution of the General Medical Council, the educational work of the Council as a standardising authority has been simplified. The Council as the central educational authority has had to do work in most instances in directions in which the various bodies to whom medical education is in detail committed are anxious to work. The Council, however, has recently been confronted with difficulties mainly arising from the general development of medical knowledge and the consequent increase of subjects for which space has to be found in the student's curriculum, but due also to a want of complete accord in the aspirations of all the qualifying bodies and to the special circumstances which surround the medical student at the London schools.1 These difficulties are very real, as further consideration of them will show.

The scheme which the various qualifying bodies have adopted by a sort of general consensus of opinion, and whichis approved of by the General Medical Council, may be summarised as follows. Firstly, the student must pass a preliminary examination which is not of a stringent character. Secondly, he must enter upon a five years' curriculum from the date of passing that examination, during which time he must submit himself to three tests-a preliminary scientific examination, an intermediate examination, and a final The preliminary scientific examination, the examination. subjects of which are chemistry, botany, biology, and physics—the subjects which are sometimes termed ancillary should be passed at the end of the first year; the intermediate examination, the subjects of which are anatomy and physiology, should be passed at the end of the thirdyear; the final examination, the subjects of which are medicine, surgery, and obstetric medicine, should be passed at the end of the fifth year. From this bald synopsis of the general medical curriculum the aim of the education authorities can be gathered. The first year of the medical student's curriculum should be devoted to the more or lesselementary study of the sciences which he will later find are necessary to the comprehension of medicine—the ancillary sciences; the next two years should see him in the dissecting-room and the physiological laboratory learning toappreciate the shapes, dispositions, relations, and functions of the normal human body, as the only method of detecting and understanding any lapses into disease or pathological conditions due to injury; and the last two years of the curriculum will be spent in the wards and out-patient departments of a hospital.2 Such is the ideal division of the medical student's time during a compulsory course of five years' duration; but the average time taken in accomplishing that course is nearer seven than five years, and every development in scientific medicine threatens, unless the seriousness of the situation is recognised, to increase this already considerable time.

The duration of the medical curriculum has been extended in obedience to the vastly greater scientific and professional equipment that is now required of the medical practitioner

¹ Mr. F. C. Wallis, the Dean of the Charing Cross Medical School, has recently called attention to this matter in a vigorous speech at the opening of the new medical session, and his words have received considerable attention in the daily press. (See THE LANGET, Oct. 9th, p. 1093.)

² Dr. Samuel West, in his Presidential Address to the Medical Society of the relation of the properties of the propertie

of London, included an excellent synoptical table showing the relati of the ancillary sciences to medicine, THE LANGET, Oct. 18th, p. 1121.

in whatever branch of medicine he may be called upon to practise. Many years ago, nearly 30, it was extended from three years to four, while a change made 12 years ago extended it from four years to five. Each change necessitated a rearrangement of their examinations upon the examining bodies, and the result is that at the present moment a great similarity appears in the educational course of all of them, every student having the same subjects to read and to acquire practically in the same space of time. This uniformity may be insisted upon a little, for it is exactly what would not be expected to exist where over 20 educational institutions, having their homes in different countries and drawing their clientèle from different classes, compete against each other for the patronage of the student requiring a qualification. The fact that at the present time, under a system in which many faults of detail can be found, a high general level of education is maintained, making down-grade competition improbable, is very striking. And it has a forcible bearing upon propositions for reform because it suggests that the existing condition is a sound one and that nothing is required save to simplify it-(1) by removal of the anomalies that are due to its growth into a whole from many separate directions, and (2) by resistance to unnecessary developments undertaken with the vain hope of examining students, whose season of acquisition must be limited, in all the unlimited extensions of modern medicine.

The scheme of medical education in England, Scotland, and Ireland to-day is very nearly uniform. The preliminary examinations are easy, perhaps too easy, the intermediates and finals are thorough. The entrance to practice is better guarded at one door than at another, but everywhere the curriculum is well devised and may turn out good men. Moreover, the various educational bodies are zealously and constantly watched by the General Medical Council, which is never accused of being supine in respect of educational supervision. The final examinations of all the universities and corporations are tested periodically by the visitors and inspectors of the Council, and from the reports which these officials make from time to time to the Council a very good idea of the present state of medical education in the various centres can be obtained. The Apothecaries' Hall of Dublin, which turns out now very few qualified men, is the only body which has recently taken up the attitude that these inspections are derogatory to the dignity of a corporation, but it is necessary for the Council to be on the look out for any down-grade competition.

The process of inspection is as simple as it is drastic. The General Medical Council deputes a visitor, a member of the Council, and an inspector, not a member of the Council, who attend from time to time as the Council directs at the qualifying examinations of particular bedies. The visitor and inspector can attend together or separately as they are instructed, and can make joint or several reports. They read some of the candidates' papers and make their own marks upon them, which they afterwards compare with the marks made by the examiners. They listen to the clinical and oral examinations of the candidates and take note of the style of questions that are asked and the style of answer that is accepted. They observe the facilities provided for convenient examination of the candidates, the supply of instruments and pathological specimens, the precautions against copying, the amount of time allotted to the examination viva voer of a candidate or the answering of a written question. And finally, they attend at the adjudication of the examiners upon the candidates' merits. In this thorough way they can see if the examination is kept at a proper standard and if the student obtains fair play; and there is no doubt that the criticisms of the Council's delegates, though sometimes resented by the criticised educational body, have been most valuable in maintaining Chater Charlton, D.M.D. Harvard, Harvard University and

a high general standard of medical training. The supervision of the Council is very real and minute, and the strictures which have been passed in some directions show that all qualifying bodies, whatever their position, are treated with the same respect, while the value of the work is proved by the fact that an indifferent report on one occasion is observed to be followed usually by a good report on the next occasion.

Our medical curriculum has, then, these things to be said for it. It is carefully devised and thorough—in comparison with that of other countries it stands well; it is uniform in essentials, despite the anomalies that are due to the fact that degrees and diplomas can be given by such widely different bodies; an independent and powerful Government department, through the General Medical Council, watches over the curriculum and the examinations which close it, to ensure the maintenance of a certain standard. The precautions taken by the General Medical Council with regard to the examinations are all directed towards making the tests fair, towards eliminating the element of chance as far as possible from them, and towards the practical equipment of the medical man for his public duties. There is plenty of room for improvement in the general educational scheme, but as far as it goes it is satisfactory. All medical men must submit themselves to a carefully standardised trial before they win a place upon the official roll of their profession, and so become legally qualified to minister to the public needs.

But because the medical curriculum has so many pleasant things that can be said about it we must not be blind to the fact that the difficulties of medical education are increasing, that the burdens alike of teacher and taught are now very heavy, and that there is an amount of wasted effort which is tragic.

(To be continued.)

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MRETING OF COUNCIL.

A QUARTERLY meeting of the Council was held on Oct. 14th, Mr. H. T. BUTLIN, the President, being in the chair.

The SECRETARY reported the death on Oct. 1st, at the age of 76 years, of Sir Thomas Smith, Bart., K.C.V.O., Honorary Serjeant-Surgeon to the King, past vice-president and past member of the Council. It was resolved-

That the Council do hereby record their deep regret at the death of Sir Thomas Smith, Bart., K.C.V.O., whom they highly esteemed for his valuable services to the College and whose personal character made him an object of affection to all his colleagues. The Council do also deather to express their very sincere sympathy at the loss which his family have sustained by his death.

The SECRETARY also reported the death on Oct. 5th of Dr. William Rivers Pollock, examiner in midwifery under the Conjoint Examining Board.

The PRESIDENT stated that the vacant examinership in midwifery would be filled up at the meeting of the Council in December.

The diplomas of Fellow or Member were conferred upon the following gentlemen, who have complied with the respective requirements, viz.:—Diploma of Fellow: Albert Edward Mortimer Woolf, M.R.C.S., L.R.C.P., B.C. Cantab., Cambridge University and London Hospital, Diploma of Member: Enoch Turner Atkinson, M.D., M.S. Toronto, Toronto University and Middlesex Hospital; Lancelot Bromley, B.A. Cantab., Cambridge University and Guy's Hospital; Isaac Marcus Edis, London Hospital; Patrick Clive Fowell, B.A. Oxon., Oxford University and St. Bartholomew's Hospital; Harold Edward Jeffreys, M.B., B.S. New Zealand, New Zealand University and Middlesex Hospital; and Charles Dudley Roberts, Guy's Hospital.

The Licence in Dental Surgery was conferred upon Percie

Guy's Hospital; Linton Albert Ramsey Fennell, Middlesex and Royal Dental Hospitals; and Philip Reginald Helyar, Guy's Hospital.

Sir Henry Morris was re-elected for three years a member of the committee of management.

A report was read from the President and Vice-Presidents on the proposed celebration of the jubilee of the Grant of the Charter enabling the College to confer Diplomas in Dental Surgery.

It was resolved in accordance with this report that the celebration should take the form of a dinner given by the College to the leading members of the dental profession. The date of the dinner will be Thursday, Dec. 2nd, and it will be given in the library of the College.

Mr. R. Clement Lucas was elected for three years the representative of the College on the court of governors of the University of Sheffield.

A letter was read from the joint secretaries to the Royal Commission of University Education in London stating that in the early part of next year the Royal Commission will be prepared to receive information regarding the view of the Royal College of Surgeons of England upon questions connected with medical education in London, and that as soon after the close of this year as possible the Commission would like to have a statement of the nature and scope of the evidence proposed to be given and the names of the witnesses who will represent the College. - The matter was referred to a committee.

Mr. EDMUND OWEN, on behalf of the Committee on the Annual Report of the Council, submitted a draft copy of the report which is to be presented to the Fellows and Members at the annual meeting on Thursday, Nov. 18th.—The report was approved and adopted.

THE ANNUAL REPORT OF THE COUNCIL.

The report contains a record of the work done in the various departments of the College during the collegiate year ending on August lat-last. With regard to the proposed combination of the Royal Colleges of Physicians and Surgeons with the University of London (mentioned

ments of the College during the collegiate year ending on August 1st last. With regard to the proposed combination of the Royal Colleges of Physicians and Surgeons with the University of London (mentioned in the last annual report) to consider a scheme for establishing a system of Conjoint Examinations in accordance with Statute 123 of the University, the delegates appointed by the Royal Colleges in reference to the matter state that, taking into consideration the provisions of the statute, the existing conditions of medical education in the metropolis and the undoubted demand for a degree in Medicine which shall be more accessible to the average London medical student, and assuming the existence of a general desire on the part of the University, the Royal Colleges, and the medical schools of London to unite in a concerted effort to provide such a degree, they, the delegates, are of opinion that there should be little difficulty in arriving at an equitable and advantageous solution of the problem.

In considering the scheme the delegates state that they have taken as a basis of their deliberations the following principles: (a) That the University should rotain all its existing rights as to the granting of degrees, but should consent to exercise them as regards pass degrees conjointly with the Royal Colleges so far as those students are concerned who shall have spent not less than four years in study at London medical schools and hospitals, and who shall have complied with such conditions as the University and the Royal Colleges may determine. (b) That the Royal Colleges should retain all their existing rights to grant diplomas to those who are not eligible under the foregoing conditions, or to those who do not desire to come under such conditions. (c) That the Royal Colleges should be associated with the University in conducting the Preliminary Scientific, Intermediate, and Final Examinations for the Pass Degree (M.B., B.S., M.D.). The delegates believe that this arrangement will secure the following advantages

prepared to bring forward a working scheme for carrying the proposal into effect.

Since the reception of the report of the delegates a Royal Commission on University Education in London has been appointed, and the College will be afforded the opportunity of giving evidence before the Commissioners at some date in 1910. In the meantime the Royal Colleges have approached the University of London and the delegates of the Royal Colleges have met representatives of the University and placed the proposed scheme for combination before them.

With regard to the question of the administration of anæsthetics and in answer to a letter received from the General Medical Council inquiring how far the College had given effect to a recommendation of that Council as to requiring students to produce evidence of having received practical instruction in the administration of anæsthetics, the Council of the College replied that the desirability of making practical instruction in the administration of anæsthetics a compulsory part of the medical curriculum was recognised by the College in 1901, and that, in conjunction with the Royal College of Physicians, a regulation was adopted in that year requiring a candidate before admission to the Final Examination to produce certificate "of having received at a recognised medical school

and hospital, instruction in the administration of anæsthetics to the satisfaction of his teachers," and that, moreover, questions on the subject are from time to time put to candidates by the examiners of the College. Upon the recommendation of the Board of Examiners in dental surgery it has been determined to also require that candidates for the Licence in Dental Surgery of the College shall be instructed in the administration of anesthetics, and all candidates for the Licence who enter at a recognised dental hospital or school are now required to produced a certificate "of having attended at a recognised dental hospital and school a course of practical instruction in the administration of such anæsthetics as are in common use in dental surgery."

With reference to the admission of women to the examinations for the College diplomas the Council state that in accordance with the requirements of the Charter of 1843 the new by-law in reference thereto has been submitted to the Secretary of State for Home Affairs for sanction and ratification.

nas been submitted to the secretary of State for Home Affairs for sanction and ratification.

The conditions of the transfer of the museum of the Odontological Section of the Royal Society of Medicine, which has been offered to, and accepted by, the College as a trust, are published in the report. The transference of this important collection represents one of the largest and most valuable additions ever made to the museum of the College. The collection contains about 5000 specimens arranged in 13 mahogany cases. At the present time the College collection of odontological specimens, many of them being those used by Hunter in the preparation of his monograph on the teeth, are shown in several sections of the museum. It is proposed that these should be brought together and added to the collection now entrusted to the College, the whole to be arranged in a commodious and accessible room in the basement of the museum, to be known as the "Odontological Room." The addition of this collection, although it will entail a considerable expenditure of both money and labour, will place the museum in possession of one of the most valuable odontological collections in the world.

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expenditure of both money and labour, will place the museum in possession of one of the most valuable odontological collections in the world.

With regard to the work in the museum for the past year the chief place must be given to the alterations which have been and are being effected in the system of cataloguing and labelling its contents. After a prolonged inquiry the Museum Committee recommended the adoption of a card form of catalogue, which is considered to have many advantages over the book form at present in use. It is estimated that the new system of cataloguing will involve the preparation of 250,000 cards. Four cabinets have been designed to contain the cards and have been placed in the entrance hall of the museum. The total number of visitors to the museum for the year was 12,862, a slight increase in the number for the previous years. Special arrangements were made for the reception of two large parties of French physicians, whilst several scientists from abroad have visited the museum for the purpose of research. Altogether 138 men have visited the museum in connexion with scientific inquiries which are being carried out by them. On Saturday afternoons the museum was kept open on 28 occasions for 82 classes, 17 of which (305 students) were connected with evening science and art centres of the London County Council. The remaining 65 classes were composed of ambulance and polytechnic students (1182 in number), and were conducted round the museum by their teachers, many of whom are medical men. A series of 12 demonstrations explanatory of the contents of the museum were given during the year by, the conservator and the nathological curator. The demonstrations explanatory of the contents of the museum were given during the year by, the conservator and the nathological curator. The demonstrations explanatory of the contents of the museum were given during the year by, the conservator and medical men. A series of 12 demonstrations explanatory of the contents of the museum were given during the year by, the conservator and the pathological curator. The demonstrations were well attended and have been the means of extending and improving the various sections of the museum on which they were given. During the past year the supply of books and journals has been well kept up, and many valuable donations have been made to the library. In addition to these donations five interesting Hunterian papers, including Clift's own account of his apprenticeship to Hunter, MS, and other biographical data, and the MS. of Mrs. Ann Hunter's proposed Epitaph on Hunter have been presented.

The purchase of the Examination Hall by the Institution of

of bis apprenticeship to Hunter, MS. and other biographical data, and the MS. of Mrs. Ann Hunter's proposed Epitaph on Hunter have been presented.

The purchase of the Examination Hall by the Institution of Electrical Engineers has been completed, and arrangements have been made whereby the examinations of the Royal Colleges of Physicians and Surgeons will continue to be conducted at the Examination Hall for some time, sufficient accommodation having been leased from the institution for three years from June 1st last, with option of renewal on a yearly tenancy. A site for a new examination hall has been acquired in Queen-square, Bloomsbury, comprising four houses, the freeholds and leaseholds of which the Royal Colleges have agreed to purchase for £23,000. A sum of £24,512 was realised by the College from the sale of the Examination Hall buildings and lease. The original cost to the College of the buildings amounted to £30,251, and when from this has been deducted £1736, the share of the sinking fund transferred to the College, the loss on the original cest only amounts to £400. This is considered a satisfactory price as allowance must be made for depreciation of the buildings during some 22 years.

Regarding the finances of the College the income for the past year amounts to £25,401, an increase of £427 on that of the previous year. There is an increase of £109 in the receipts from the Conjoint Examining Board in respect of the Membership, and of £70 in respect of the Diploma in Public Health, as regards the share apportioned to the College. There is also an increase of £189 in the receipts from the Conjoint Examining Board in respect of the Membership, and of £70 in respect of the Diploma in Public Health, as regards the share apportioned to the College. There is also an increase of £189 in the receipts from the Conjoint Examinations there are small increases, whilst an increase of £171 is also shown in the general working expenses of the College. The most noticeable increase, however, occurs under the specia

A Somerset Centenarian —Miss Hensley of Bath celebrated the 104th anniversary of her birthday on Oct. 16th, and received a congratulatory telegram from the

THE CRIPPLES' HOME AND COLLEGE, ALTON.

On Oct. 16th Sir William Treloar entertained a large party of friends and subscribers at the Lord Mayor Treloar's Cripples' Home and Hospital which he has founded at Alton in Hampshire, where it occupies the buildings originally erected as the Princess Louise Military Hospital. Between 200 and 300 people attended in spite of rain, the gathering including several members of the honorary medical staff. special train was run from Waterloo, and upon arrival the visitors were conducted round the carpenters', leather-bag making, and tailoring workshops, the power-house, laundry, chapel, and college. The buildings, which are situated in an estate of some 70 acres in a pleasant part of Hampshire, were seen to consist of wooden pavilions on brick piles, most of the wards being linked up by covered corridors. Luncheon was served in the gymnasium, and Sir William Treloar, in giving an account of the work, told his audience that there were 60 cripples learning trades in the college, and 200 cases of active bone tuberculosis in children under 12 years of age undergoing treatment in the hospital. Speeches in support of the work of the institution were also made by Sir Melvill Beachcroft, Sir Edward Clarke, and Sir Ernest Flower, and then the guests were conducted round the wards by Mr. H. J. Gauvain, the medical superintendent, who was responsible for the original arrangements of the hospital wards, and has charge of their administration. Our representative, who is indebted to Mr. Gauvain for supplying many of the following details of the work of the Alton Hospital and Home, was given an opportunity of seeing some of the admirable results which have been obtained there by careful and efficient splinting and the subsequent use of a plaster jacket.

It has long been recognised by English surgeons that treatment of children suffering from tubercular bone lesions in the out-patient department of our hospitals is terribly unsatisfactory. The beds of most general hospitals are in so great demand that usually they are not available for the necessarily prolonged treatment required to ensure a cure, and consequently are, as a rule, only open to the admission of these children when urgent symptoms render radical treatment imperative. The Cripples' Home and Hospital has been designed to remedy this defect. It is essentially an institution for active treatment and not simply an asylum. Children admitted to the Home are detained as long as they can be benefited by treatment, which means in the great majority of cases until they are apparently cured. It is particularly gratifying to record that not only has the need of such an institution been recognised, but its existence is fully appreciated by the medical profession. No patient is admitted unless his application form for admission has been signed by a surgeon of a hospital and approved by the Alton medical board. This medical board, the members of which were nominated by the Presidents of the Royal College of Physicians of London and the Royal College of Surgeons of England, is under the chairmanship of Mr. John H. Morgan, C.V.O., and is composed of physicians and surgeons selected from the visiting staffs of leading London hospitals. One or more of the members of this board visit the institution periodically to inspect the Home and to advise the medical superintendent in the treatment of cases, and the board meets monthly in London to consider his report and to assist in every way in its power.

All patients on admission are kept in quarantine for a fortnight in a separate glass cubicle in one of the observation wards. The clothes in which the patients come to the Home are at once sterilised, and every possible precaution is taken to prevent the introduction or spread of infectious disease. During the time the child is in quarantine his case is carefully investigated, notes are written, his tastes studied, his diet regulated, and such splints and appliances as are requisite are made. During this period he is also gradually acclimatised and taught to withstand the rigors of an open-air life. Very great stress is laid upon adequate mechanical treatment. Everything possible is done to prevent deformity, and

where that already exists to prevent its increase. of efficient mechanical treatment is especially shown in many of the spinal cases under treatment at Alton. The splints are made at a trifling cost by the carpenter under the supervision of the medical superintendent who adapts them to each case individually. Great attention is paid to diet. The appetites of tuberculous children are notoriously capricious, and every endeavour is made to improve their powers of digestion and assimilation. This trouble is amply repaid by the obvious improvement effected in their general health by good food combined with open air. Drugs are employed where indicated, but occupy only a subsidiary part in the treatment. Vaccine therapy has not been neglected. There exists at this Home an excellent field for careful research in the use of tuberculin and vaccines generally, and it is much to be hoped that funds will be forthcoming to equip a laboratory and provide an efficient clinical pathologist.

Bier's hyperæmic treatment is also employed in suitable cases, but in the medical superintendent's experience the most valuable curative agent is proper mechanical treatment under the best hygienic conditions. Mr. Gauvain treats nearly all tuberculous abscesses by aspiration under strict aseptic precautions and finds the results much better than those of operation, which so often ends in sinus formation and septic infection. No operation, except in cases of emergency, is performed at the Home without the surgeon who sent the case being notified and being given the opportunity of having the patient returned to him or coming to the Home to operate himself if he prefers. We are not surprised to learn that the surgeon almost invariably prefers the operation to be performed in the Home.

Every endeavour is made to reproduce the conditions of home life rather than the atmosphere of a formal institution. Whilst no rudeness or lack of reasonable discipline is tolerated, yet every child is made to consider that he or she is a member of a very happy family. During the summer those who are capable of being benefited attend the forest open-air school, which is designed on the lines of the forest school at Charlottenburg. Here they work under ideal conditions. But work is a secondary desideratum, the cure of the child being the first aim, and there are no rigid rules for compulsory attendance. In the winter the children are taught in the winter schoolroom or in the wards. Under these carefully thought out conditions it is not surprising that the progress of the children has been good. In some 300 children who have been under treatment two deaths only have occurred, and both have been due to tuberculous meningitis.

The College is designed for a different purpose altogether. Here boys, whose ages range from 14 to 18 years, crippled from any condition whatever, but nevertheless capable of being taught a trade, are admitted for treatment and training. They include lads who have lost one or both legs as a result of accident or disease, sufferers from club-foot, scoliosis, infantile paralysis, old but quiescent tuberculous disease, &c. The primary object here is the training of the youth under medical supervision in healthy surroundings where also a good moral tone can be ensured. The trade which the boy shall adopt is decided in consultation with the college master. Boys who would be especially benefited by an open-air life learn poultry-farming or horticulture. Other lads are taught leather-working, cobbling, or tailoring under skilled instructors. The majority work in the leather shop, as this trade has been found best adapted for their condition, and it is anticipated that on leaving the college little difficulty will be experienced by them in earning their A possible extension of this work will be the establishment of a self-supporting labour colony later. During his period of training the general health of the cripple is improved by every possible means, and where feasible endeavours are made to correct or reduce existing deformity by operative or other measures. All lads capable of benefiting by it are drilled, and their drills are performed with extraordinary zest and smartness. Lads suffering from scoliosis and other conditions are instructed in special exercises designed to lessen their deformity, and the supervision maintained enables the exercises to be systematically performed with obviously beneficial results. The boys are encouraged in games but have plenty of other occupations, as they do their own domestic work, mend their own clothes and boots, and keep their quarters thoroughly clean.

SCARLET FEVER AND MILK IN THE THAMES VALLEY.

THE public health committee of the London County Council has issued a further report with reference to an outbreak of scarlet fever which occurred last June amongst over 400 people in London and Surrey who had consumed milk from a particular company. The matter was referred to in our columns at the time.

A joint inquiry into the circumstances of the outbreak was undertaken by Dr. W. H. Hamer and Dr. T. Henry Jones, who had the help of Dr. Mervyn H. Gordon as bacteriologist. Assistance was also rendered by the medical officers of the affected districts and by the officers of the milk company. Sir Shirley Murphy, medical officer to the London County Council, commenting on this investigation, states that no reasonable doubt can be entertained that the milk of a particular farm was responsible for the occurrences of the scarlet fever in the two counties, and interest centres in the question how this particular milk acquired the ability to infect those who consumed it. In the past two hypotheses of milk infection have been discussed, the one that the milk acquired its infective property from a human source, that it was, in fact, infected by the milker or by some other person suffering from scarlet fever; the other, that milk was infected by some condition of a cow or cows. It has been observed on former occasions that inquiry has failed to demonstrate that human agency has been responsible for the infective condition of the milk; such inquiry has often shown that even when one or more persons engaged on the farm have suffered from scarlet fever the dates of their infection have been subsequent to the dates of infection of the consumers of the milk—in fact, that the milkers suffered, as other persons, from consumption of the milk. So in the outbreak investigated by Dr. Hamer and Dr. Jones it was found that scarlet fever did occur in the family of a milker, but that the evidence in connexion with this occurrence could not be regarded as affording explanation of the infection of the milk by human agency, while it distinctly suggested that the milk was infective before leaving the farm. Careful inquiry in the neighbourhood of the farm failed to yield any evidence of the existence of a human source of infection of the milk.

Sir Shirley Murphy points out that in similar circumstances Sir William Power, when investigating in 1882 an outbreak of scarlet fever in certain London districts, made the suggestion that inasmuch as "there is one sort of relation between scarlatina and accidents of the puerperal state another sort of relation becomes comparatively easy of belief," in fact, that "if scarlatina in man have other animal source than human source, it may be that one such source is the cow that has recently calved, a cow either not at all ill (except for her parturition) or not so obviously ill as to prevent her milk being used for human consumption." suggestion thus tentatively made in 1882 assumed large importance upon the demonstration by Sir William Power in 1885 of the bovine origin of scarlet fever occurring in persons consuming milk from a Hendon farm, the cows at which were affected with an eruption of the teats and udder. A similar development of scarlet fever in man, associated with the consumption of the milk of similarly affected newly calved oows, or cows infected from such newly calved cows, has been observed in a number of instances since that date. In London in 1892 and again in 1894 and 1902, considerable prevalences of scarlet fever due to infected milk were strongly suspected to have been of bovine origin. In the present instance a like possibility was naturally entertained, and it has been found possible by study of the farm operations in minute detail to show that just at the time when the milk first began to show infectious property, there was added to it the milk of three recently calved cows, the calf of one of which had died after being suckled by the cow for four or five days. These circumstances, together with the fact that the three cows mentioned and other cows at the farm showed at the time of the inquiry appearances upon their teats and udders suggestive of "Hendon disease," render it probable that a morbid condition of the cow was responsible for the subsequent human illness.

Sir Shirley Murphy remarks, in conclusion, that from the administrative side it deserves to be noted how, with the cordial assistance of the manager and secretary of the company, whose action deserves recognition, early localisation of the source of the mischief was possible. This was due to the system of record of distribution of milk maintained by the company, a system which had proved in this case to be of value alike to the public and the company.

At the meeting of the council it was decided to place the

At the meeting of the council it was decided to place the detailed account of the investigations on sale, but not before Mr. Easton had objected to the responsibility for the outbreak being fixed on the cow. He said it had been decided by the highest bacteriological authorities that scarlet fever was incapable of transmission from a cow to an infant, and inquired if the possibility of infection having been derived from railway trucks had been looked into. In his view it would create needless alarm if the report was published, and he moved the reference back.

The proposal found no seconder, and therefore fell through.

MEDICINE AND THE LAW.

Unqualified Dentistry and the Public.

THE recent trial in which Mr. G. H. Hawthorne, a baker at Cricklewood, sued the London Hygienic Institute, Oxfordstreet, for personal injuries caused by the negligent extraction of 22 of his teeth illustrates most of the evils arising out of that unqualified practice of medicine and dentistry which the law permits, and it might serve as a warning to all foolish and credulous persons if they were capable of assimilating and applying its lessons. This class of persons, however, appears to be inexhaustible alike in numbers and in credulity, and the example of Mr. Hawthorne and his teeth will probably pass unnoticed or will soon be forgotten. The victim in this case did not consult the defendants upon his own initiative, but was called upon by one of their canvassers, from which it will be easy to observe the business advantages enjoyed by the unqualified person over those whom the ethics of an honourable profession do not permit to employ agents and canvassers. The arrangement was made with the canvasser that Mr. Hawthorne should have his teeth attended to for £3 15s., paid in weekly instalments of 7s. 6d., and one payment was made before he went for the first time to the institute. Once there his business was quickly disposed of by an operator, who afterwards admitted in the witness-box that he had no medical or dental qualifications. This gentleman began by pulling out four or five teeth, when he was remonstrated with by the patient, but he proceeded with his task and ended by extracting 22 teeth at a single sitting. Apparently an anæsthetic containing 1 per cent. of hydrochloride of cocaine was used, but the plaintiff denied that it effectively prevented him from feeling what was being done to him, and he declared that he screamed with pain. There was some denial of this on the part of the defence, but there was no doubt that after washing his mouth out with whisky at a public-house, on the advice of the operator, he went home, and that there, owing to faintness and hæmorrhage, he had to call in a medical man, while afterwards a qualified dentist attended him and removed 14 stumps which had been left behind in his jaws. Those who are inclined to visit such places as the Hygienic Institute will observe that not only did Mr. Hawthorne suffer considerable physical pain and inconvenience, but that he had to pay medical and dental fees necessitated by the treatment he had received amounting to nearly £10, and that he estimated his further loss in wages at £8 10s. They may also reflect that the medical witness who attended Mr. Hawthorne when he returned from the institute deposed that his condition was such that, without medical attention, death might well have been expected to supervene. We need not discuss the evidence in detail, and we can leave such testimony as was laid before the jury on behalf of the defendants for the consideration of those who care to study it. They are not likely, whoever they may be, to blame the jury for disregarding it, and for finding a verdict for the plaintiff. Hawthorne, therefore, was nominally successful, and for the time being the London Hygienic Institute will suffer, but the damages were assessed at no more than £50. Mr. Hawthorne seems, therefore, to have endured pain, to have

suffered anxiety and pecuniary loss, even to have had his suffered anxiety and pecuniary loss, even to have had his life endangered, only to be laughed at in court and to be consoled with a sum of money which cannot have left any appreciable surplus after the payment of his necessary expenses in the action. With regard to the law Mr. Justice Bray, who certainly did not err on the side of sympathy with the plaintiff, ruled that the agreement to extract the teeth did not imply any contract to employ for the purpose a gualified person in the contract to employ for the purpose a qualified person in the sense that he should have a legal qualification for the practice of dentistry. In summing up he defined the contract entered into as one to use due care and skill in selecting what teeth were to be extracted and in extracting them, and to decide how many were to be extracted at a time; not to put the patient to unnecessary suffering, and to do properly what had to be done. The obligation was not to provide a registered dentist, but one of sufficient skill. In all this Mr. Justice Bray may be, and probably is, from a legal point of view, perfectly right. The patient in such a case is at the mercy of those who need only select to operate upon him a person of "sufficient skill." What constitutes "sufficient skill" in such a connexion is to be decided by a jury afterwards in those cases in which patients complain of ill-usage. In those in which patients do not complain we are asked to assume that there has been 'sufficient skill," although it may be merely the brute force of a man who is strong enough to pull out as many teeth as his patient is willing to part with, and who manages to do so without any immediate result of an obviously serious character. Medical practitioners and dentists are popularly supposed to advocate the suppression of unqualified practice from a desire to protect their own profits from the intrusion of dangerous rivals. The case under discussion, however, hardly points that way. It is an instance, among many, of the unqualified person providing lucrative work for the qualified in repairing the damage done by ignorance. It was the Cricklewood baker alone who suffered physically and pecuniarily, and it is for members of the public such as he and not for medical men or dentists that greater protection than the law now affords is urgently needed upon public grounds and not in the interest of any profession.

Public Bealth.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

City of Bristol.—The population of this city is now estimated at 372,785, no insignificant portion of the recent increase having been brought about by means of borough extensions. Dr. D. S. Davies furnishes in his current report some figures showing the differences in the fatality-rate of scarlet fever to-day as compared with 40 years ago. In 1863 and 1864 no fewer than 1100 deaths from scarlet fever occurred. In 1869 and 1870 there were over 900 deaths; in 1875 and 1876 over 700, and in 1880 and 1881 nearly 400, while in 1886 and 1887 there were 300 deaths. The next epidemic was in 1896, with 59 deaths, and in 1900 there was a larger epidemic, with 39 deaths, followed in 1901 with was a larger epidemic, with 39 deaths, followed in 1901 with a still larger epidemic, yielding only 36 deaths. In 1902 the deaths rose to 66. Dr. Davies points out that if in 1908 there had been a similar loss in regard to population as there was in the year 1863 there would have been 2000 deaths instead of only 10. It is very difficult, as he observes, to explain satisfactorily this change of type which has characterised scarlet fever within recent years. In all probability part of it may within recent years. In all probability part of it may be due to the removal to the isolation hospitals of cases which, by being overcrowded at home, might have added to them a septic element which would increase the fatality-rate of the disease. But there is also the consideration that there is evidence pointing to the fact that the mild type of scarlet fever which now prevails is a common feature in all countries, whether or not they are provided with isolation hospitals. Dr. Davies, in discussing the behaviour of enteric fever in Bristol, makes some very instructive observations upon "carrier" cases of this disease and, inter alia, he furnishes the later history of the wellknown Brentry woman who had apparently been the cause of numerous cases of enteric fever since her own attack in 1901,

and who, in the spring of 1908, seems to have infected herself. Subsequent to this she was regarded as having infected three other persons. In a second instance of an enteric fever "carrier" the woman, who contracted a slight attack of enteric fever in the autumn of 1907, apparently gave the disease to four of her five children in June, 1908, although she was at that time in excellent health. These although she was at that time in excellent health. cases led to an investigation into the whole subject of 'carrier' cases by Dr. Davies and Professor I. Walker Hall, who have presented an interim report to the town council on the subject, which, to a large extent, was summarised in our columns on Nov. 28th, 1908. Dr. Davies also embodies in the report before us the history of the Devizes "carrier" case, in which a woman who suffered from a severe attack of enteric fever in July, 1905, caused cases of the disease in September and December, 1905, in July, 1907, and in July, September, and December, 1908. The Winsley Sanatorium for pulmonary tuberculosis is largely supported by the town council of Bristol, which contributes £1400 annually for the maintenance of 20 beds, and which has a capital interest in the institution to the extent of £6000. The following figures show the after-history of the patients discharged from the sanatorium. Of 45 discharged in 1905 there were, on Dec. 31st, 1908, 21 dead and 5 whose whereabouts were unknown, while of 67 discharged in 1906, 29 were dead on that date.

City of Nottingham. - Dr. Philip Boobbyer, in presenting his twentieth annual report, estimates the population of the city at 260,449 for 1908, while the birth-rate per 1000 for the same year was 26.6, and the death-rate 15.2. The infantile mortality was 145 per 1000 births. He deplores the decline of vaccination in Nottingham, and he points out that the present vaccination law has swelled the ranks of abstainers from vaccination, and as this was not the end which it was intended to serve, it is difficult tojustify its continued existence. Diphtheria antitoxin is now not only given to the patients admitted to the isolation hospital, but it is distributed gratuitously to medical men in attendance upon poor patients on application. But, notwithstanding this liberal arrangement, a considerable number of patients are yearly brought to notice to whom, although the disease was early recognised, antitoxin has either not been administered, or, if administered, this has been done too late to obtain any real benefit. This is a very serious condition of affairs, and one which cannot be allowed to continue indefinitely. It will therefore be well for the medical practitioners who are thus tardy in administering antitoxin to consider their position. The death-rate from enteric fever in Nottingham is still unduly high, and Dr. Boobbyer ascribes its maintenance to the practically undiminished continuance of the conservancy system of excrement disposal, and in this connexion he makes an instructive comparison with certain other towns. He states that in the "seventies" the enteric fever death-rate in Nottingham was rather below the mean rate of the other large cities taken together-i.e., the Nottingham death-rate was then about 45 per 100,000, as compared with 48 per 100,000 in the other great towns. But although from the "seventies" onwards the enteric fever death-rates of the great towns had fallen to 20 per 100,000 at the end of the last century, the death-rate of Nottingham had only fallen to 29—i.e., the mortality was 45 per cent. more in Nottingham than in the large towns as a whole. During the decade ended 1907 the average enteric fever death-rate in Nottingham was 24 per 100,000, as compared with 10 in the great towns, and during 1908 the Nottingham death-rate (11 per 100,000) was still 36 per cent. above that in the great towns. Dr. Boobbyer then contrasts Nottingham with Leicester, where the water-earriage system has been substituted for the conservancy system, and he shows that pari passu with this conversion in Leicester the enteric fever death-rate has steadily declined as well as the death-rate from diarrhoea, and he contends that this decline cannot be due to reglulation of the shell-fish trade, since the supply of Nottingham and Leicester is identical. In passing, it is of interest to take note of the fact that in 1908 no less than 78 per cent. of the recognised cases of enteric fever were sent to hospital, and in connexion with the practice adopted at the Nottingham Isolation Hospital it may be pointed out that open-air treatment is still employed as far as possible for all cases of acute specific diseases. Dr. Boobbyer addsthat although this practice is undoubtedly advantageous in practically all such cases, its advantage is most apparent in a disease such as scarlet fever in which septic complications are liable to prevail; and as regards these cases the open corridors between the ward blocks are used in rough weather, but whenever weather permits the patients are nursed in the open, the beds being placed on the paths or grass immediately outside the ward blocks. But the labour involved in thus moving beds is considerable, and Dr. Boobbyer suggests that as the open-air treatment for the diseases dealt with in the isolation hospital has passed beyond the experimental stage it would be well if verandahs were built along one side of each ward block, such verandahs communicating with the interior of the wards by doors formed by prolonging the existing windows to the floor level.

City of Cork. - Mr. Denis D. Donovan tells us in his current annual report that at one time typhus fever was rife in Cork, there having in 1881 been 1406 cases with 88 deaths. In the decade 1879-1888 there were 4863 cases, in 1889-1898 547 cases, and in 1899 to 1908 122 cases. This gratifying decline the medical officer of health attributes in great measure to the provision by the corporation of about 550 working-class dwellings, as well as to the reduction of overcrowding, the removal of the families of the patients to the reception house, and the isolation of the patients themselves. It would be helpful if Mr. Donovan would in a subsequent report furnish the date of the first use of the subsequent report turns the date of the first use of the reception house and of the isolation hospital, as well as of the number of persons removed annually to each, as such a statement might be of considerable value. There were 88 cases of enteric fever with 16 deaths in Cork during 1908, and it does not seem at all clear as to what they were to be attributed. But in addition to these 88 cases of enteric fever there were, we discovered little later in the report as many as 55 cases. we discover a little later in the report, as many as 55 cases of "simple continued fever" which the medical officer of health regards as somewhat akin to typhus fever and as dependent upon the same conditions. The two conditions, typhus fever and continued fever, are, he adds, frequently met with in the same house. It is not clear from the report how far these cases of continued fever are isolated. The city of Cork has, the report states, the highest death-rate from pulmonary tuberculosis of any town in Great Britain and Ireland, the death-rate for 1908 being 3.22 per 1000. Cork still takes its water-supply from the river Lee, which is a polluted river, and although the degree of pollution has been reduced of late the medical officer of health is obviously far from satisfied with the filtration which the river water receives. As he rightly observes, a river supply such as that in question should be filtered by means of "properly constructed filter beds."

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 7852 births and 3845 deaths were registered during the week ending Oct. 16th. The annual rate of mortality in these towns, which had been equal to 12.3, and 12.9 per 1000 in the two preceding weeks, declined again to 12.2 in the week under notice and was lower than in any week since the end of August; in London the rate last week did not exceed 12.0 per 1000. The lowest annual rates of mortality recorded in the 76 towns last week were $6\cdot0$ in Hornsey, $6\cdot7$ in Handsworth, 6.8 in Willesden, and 7.1 in Croydon; the rates in the other towns ranged upwards, to 17.5 in Liverpool, 17.8 in Grimsby, 18.6 in Merthyr Tydfil, and 18.9 in Oldham. The 3845 deaths in the 76 towns last week showed a decline of 221 from the number returned in the previous week, and included 387 which were referred to the principal epidemic diseases, against numbers declining steadily from 849 to 402 in the seven preceding weeks; of these 387 deaths, 208 resulted preceding weeks; of these 387 deaths, 208 resulted from diarrhosa, 51 from diphtheria, 40 from measles, 34 from scarlet fever, 27 from whooping-cough, and 27 from (principally enteric), but not one from small-pox. The 387 deaths from these epidemic diseases last week were equal to an annual rate of $1\cdot 2$ per 1000, against rates declining in the seven preceding weeks from $2\cdot 7$ to $1\cdot 3$. No death from any of these epidemic diseases was registered last week in Leyton, Norwich, Halifax, Hornsey, or in five other smaller towns; the annual death-rates therefrom

ranged upwards, however, to 4 · 3 in Grimsby, 4 · 6 in Rhondda, 5.9 in Great Yarmouth, and 6.1 in Hanley. The deaths attributed to diarrhosa in the 76 towns, which had declined in the seven preceding weeks from 676 to 230, further fell last week to 208, but caused annual death-rates ranging upwards in the several towns to 2.0 in Middlesbrough, 2.1 in Grimsby, 2.2 in South Shields, and 3.9 in Great Yarmouth. The fatal cases of diphtheria, which had been 43 and 28 in the two preceding weeks, rose last week to 51, and exceeded the number returned in any week since the middle of August; they included 14 in London and its suburban districts, 5 in Liverpool, 5 in Manchester and Salford, 4 in Hanley, and 3 in Hull. The deaths from measles, which had been 17 and 30 in the two previous weeks, further rose last week to 40, including 4 in Manweeks, further rose last week to 40, including 4 in Manchester and Salford, 4 in Rhondda, 4 in Newcastle-on-Tyne, and 3 in Bristol. The 34 deaths from scarlet fever were fewer by 6 than the number in the previous week; 13 occurred in London and West Ham, 5 in Liverpool, 4 in Manchester and Salford, and 3 in Birmingham and King's Norton. The 27 fatal cases of whooping-cough showed a marked decline, and were fewer than in any previous week of the year, but showed a proportional excess in Great Yarmouth. The deaths referred to "fever," which had been 17, 21, and 24 in the three preceding weeks, further rose last week to 27; they included 8 in London and West Ham, and 2 both in Portsmouth and in Grimsby. The number of scarlet fever patients under treatment in the Metropolitan Asylums and London Fever Hospitals, which had steadily increased in the seven preceding weeks from 2347 to 2745, had further risen to 2810 on Saturday last; 371 new cases of this disease were admitted to these hospitals during last week, against 438, 373, and 324 in the three preceding weeks. Two cases of small-pox were admitted to the Metropolitan Asylums of small-pox were admitted to the Metropolitan Asylums Hospitals during last week. Of the 1114 deaths registered in London last week, 167 were referred to pneumonia and other diseases of the respiratory system, against 132 and 186 in the two preceding weeks, and were 16 below the corrected average number in the corresponding week of the five years 1904-08. The causes of 27, or 0.7 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death registered during last week were duly certified in London, Bristol, West Ham, Sheffield, Newcastle-on-Tyne, Hull, Nottingham, Leicester, and in 52 other smaller towns; the 27 uncertified causes of death in the 76 towns last week included 6 in Birmingham, 3 in Liverpool and in Manchester, and 2 in St. Helens and in Gateshead.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 838 births and 456 deaths were registered during the week ending Oct. 16th. The annual rate of mortality in these towns, which had been equal to 13.8, 13.1, and 12.0 per 1000 in the three preceding weeks, rose again to 12.8 in the week under notice. During the 13 weeks of last quarter the annual death-rate in these Scotch towns averaged 12.8 per 1000, and exceeded by 0.7 the mean rate during the same period in the 76 large English towns. The annual death-rates last week in these Scotch towns ranged from 6.7 and 9.6 in Leith and Paisley to 13.7 in Glasgow and 15.6 in Perth. The 456 deaths from all causes in the eight towns last week showed an increase of 28 upon the number returned in the previous week, and included 45 which were referred to the principal epidemic diseases, corresponding with the number in the previous week. These 45 deaths were equal to an annual rate of 1.3 per 1000, and slightly exceeded the mean rate (1.2) from the same diseases last week in the 76 English towns. The 45 deaths from these diseases in the Scotch towns last week included 15 from diarrhosa, 12 from diphtheria, 8 from measles, 5 from scarlet fever, 4 from "fever," and 1 from whooping-cough, but not one from small-pox. The 15 deaths attributed to diarrhoea in the eight towns showed a further decline from the numbers returned in the two preceding weeks; 6 occurred in Glasgow, 3 in Dundee, and 2 both in Edinburgh and in Paisley. The 12 fatal cases of diphtheria corresponded with the number in the previous week, and included 8 in Glasgow (as in the previous week) and 2 in Edinburgh. The 8 deaths from measles, of which 7 were returned in Glasgow, showed a considerable increase

upon recent weekly numbers. The 5 fatal cases of scarlet fever included 3 in Glasgow, and all the 4 deaths referred to "fever" were returned in the same town; of the latter, 3 were certified as enteric and 1 as cerebro-spinal meningitis. The deaths referred to diseases of the respiratory system in the eight towns, which had been 66 and 59 in the two preceding weeks, further declined last week to 58, and corresponded with the number in the corresponding week of last year. The causes of 14, or 3.1 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0.7 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of rather more than a million, 597 births and 334 deaths were registered during the week ending Oct. 16th. The annual rate of mortality in these towns, which had been equal to 16.9, 16.2, and 15.1 per 1000 in the three preceding weeks, rose slightly to 15.2 in the week under notice. During the 13 weeks of last quarter the annual death-rate in these Irish towns averaged 15.8 per 1000, whereas during the same period the mean death-rate did not exceed 11.9 in the 76 largest English towns and 12.6 in the eight principal Scotch towns. The annual death-rate during last week was equal to 16.0 in Dublin (against 17.5 and 16.8 in the two preceding weeks), 14.0 in Belfast, 21.2 in Cork, and 23.2 in Limerick; while the mean rate in the 16 smallest Irish towns did not exceed 12 3 per 1000. The 334 deaths from all causes in the 22 town districts last week showed an increase of but 4 upon the declining numbers in recent weeks, and included 29 which were referred to the principal epidemic diseases, 29 which were referred to the principal epidemic diseases, against 42 and 37 in the two preceding weeks; these 29 deaths were equal to an annual rate of 1.3 per 1000, corresponding with the rate from the same diseases last week in the Scotch towns, and slightly exceeding that in the 76 English towns. The 29 deaths from these epidemic diseases in the 22 Irish towns last included 10 from diseases. week included 14 from diarrhoa, 6 from "fever' (enteric), 6 from whooping-cough, 2 from diphtheria, and 1 from scarlet fever, but not one either from measles or small-pox. The 14 fatal cases of diarrhea showed a further decline of 8 from the numbers in recent weeks, and included 4 in Dublin, 5 in Belfast, and 4 in Cork. Of the 6 deaths from enteric fever, 3 occurred in Belfast, and 1 each in Dublin, Drogheda, and Newry. The 6 dai cases of whooping-cough included 3 in Limerick and 2 in Belfast. The 2 deaths from diphtheria occurred in Dublin and Lurgan. The 50 deaths referred to pneumonia and other diseases of the respiratory system last week in the 22 towns corresponded with the number in the previous week. The causes of 13, or 3.9 per cent., of the deaths in the 22 towns last week were not certified by a registered medical practitioner or by a coroner; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0.7 per cent., but was equal to 3.1 per cent. in the eight Scotch towns.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

In accordance with the provisions of His Majesty's Order in Council of August 11th, 1903:-Surgeon Fernand Louis Joseph Marie de Verteuil has been allowed to withdraw from the Royal Navy with a gratuity.

The following appointments are notified: - Fleet-Surgeons: G. Ley to the *Niobe*, for voyage out, and to the *Kent*, on recommissioning; F. A. Brice to the *Ariadne*; W. Bett to the Swile, on recommissioning; and E. Sutton to the Niobe, for voyage home. Surgeons: J. Glaister to the Niobe, for voyage out, and to the Kent, on recommissioning; and C. J. O'Connell to the Sutlej, on recommissioning.

ROYAL ARMY MEDICAL CORPS.

Captain M. F. Foulds, from Chatham, has been appointed Specialist in Operative Surgery in the Belfast District, vice Captain G. J. S. Archer. Major F. W. Hardy, Sanitary Officer, Southern Command, has been transferred to the Eastern Command for duty, vice Captain R. T. Brown. Captain F. P. Lauder has been appointed to the medical

charge of the officers and their families, and the women and children, Marlborough Lines, Aldershot, vice Major J. Poe. Captain C. H. Straton has been appointed Specialist Sanitary Officer, Eastern Command, vice Lieutenant-Colonel J. V. Salvage.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Supplementary List: Lieutenant R. Magill is confirmed in that rank.

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st Highland Field Ambulance: Lieutenant Peter Howie

to be Captain (dated Sept. 14th, 1909).
2nd Scottish General Hospital: Captain John Dixon Comrie, from 3rd Lowland Field Ambulance, Royal Army Medical Corps, to be Major (dated July 22nd, 1909). Attached to Units other than Medical Units.—Captain

William Roxburgh to be Major (dated Jan. 18th, 1909).

THE WEST AFRICAN MEDICAL STAFF.

In accordance with the recommendations of the recent Departmental Committee on the West African Medical Staff, the Secretary of State for the Colonies has appointed the following gentlemen to be an Advisory Committee on medical and sanitary questions connected with the British colonies and protectorates in Tropical Africa:-Mr. H. J. Read, of the Colonial Office (chairman); Sir Patrick Manson, senior lecturer, London School of Tropical Medicine; Sir Rubert Boyce, Dean of the Liverpool School of Tropical Medicine; Mr. C. Strachey, of the Colonial Office; Dr. W. T. Pront, late Principal Medical Officer, Sierra Leone; Dr. Theodore Thomson, of the Local Government Board; Dr. W. J. Simpson, Professor of Hygiene, King's College, London; and Dr. J. K. Fowler, late Dean of the Faculty of Medicine, University of London. Mr. A. Fiddian, of the Colonial Office, will act as secretary to the Committee.

Correspondence.

"Audi alteram partem."

THE TREATMENT OF ADDER BITES. To the Editor of THE LANCET.

SIR, -A note in THE LANCET of August 21st on this subject tempts me to send you a short account of a case which I recently attended. About 4.30 P.M. on Sept. 11th a boy, aged 14 years, was brought to my surgery by his mother, who said that he had been bitten on both hands by a viper which was produced for inspection. This must have happened as far as I can judge rather less than half an hour before I saw him. He was suffering from considerable shock, with faintness, pale moist skin, and a tendency to vomit. There were the marks of a bite on the ulnar side of the right little finger and of another on the dorsum of the first phalanx of the left middle finger. Both hands were greatly swollen, the cedema and ecchymosis extending well up into the forearms. The condition on the left side was decidedly the more severe, that hand having almost the appearance of a small boxing glove. Nothing in the way of first-aid treatment had been done. I at once applied a Bier's elastic bandage with moderate tightness to each arm at the elbow and made free incisions in the long axis of the fingers over the bites. Free hæmorrhage followed, after which gauze dressings were applied and the patient sent home to bed, where he vomited freely three or four times. I then applied hot fomentations of Gamgee tissue soaked in permanganate of potash solution, after having soaked the limbs in baths of the same solution for half an hour. No anti-venom serum being obtainable locally I wired to Burroughs and Wellcome and obtained it by 3 A.M. next morning, and injected 25 cubic centimetres into his flank. After doing so I removed the Bier's bandages; these had been in position from the first, about 11 hours in all, but I relaxed the tension in them somewhat on settling the boy in bed the previous evening, so that he might wear them without danger or too much discomfort until the anti-venom serum arrived. The hands and forearms were much swollen, the hands boggy, and the forearms brawny and very hard up to the lower edges of the bandages, and the skin was almost uniformly

discoloured by ecchymosis. The condition of the arms above the bandages was normal. When seen at 11 A.M. When seen at 11 A.M. the same morning the cedema of the hands was slightly less, but the brawny swelling had extended to the level of the axillary folds and the axillary glands were enlarged and extremely tender. There had been no more vomiting since the previous evening and the general condition was decidedly improved. At 5.30 P.M. he was much more comfortable, the cedema was about the same in extent but less tense, and he was taking light food well. Hot lysol fomentations were ordered for both hands. Next day his condition was good, the arms were less painful, and the swelling was perceptibly less. Antiphlogistine dressings were applied to both limbs at intervals for the next few days, the axillary glands gradually subsided, and by Sept. 21st the patient was getting about and enjoying the prospect of an extension of his schoolboy's holiday.

As to how far the injection of anti-venom serum was of use, I must leave to your readers. The serum which I used is stated to be an antidote to the poisons of cobra, daboia, rattlesnake, and krait; the poisons of the rattlesnake and the English adder are both classed as "viperine," that beside the chance of doing good by using a serum which may protect against the venoms of snakes in general I hoped that the antidote to the rattlesnake might also protect against our English adder. At the worst it did no harm.

It seems to me that in cases of snake-bite the use of Bier's elastic bandage is clearly indicated. It is of little use to incise the area of the bite if consequent hæmorrhage is prevented by a rigid ligature or tourniquet. Further, the latter can be applied only for a very limited time without injury to the limb, and on its removal there is nothing to impede absorption of the venom into the general system. the other hand, an elastic bandage can be so adjusted as to be applied for a period of many hours; the congestion produced by it encourages hemorrhage after incision; and when this has stopped, the extrusion of the venom into the bath or fomentation or dressing which is applied to the wound is facilitated by the vis a tergo of the arterial stream and by the obstruction to the venous and lymphatic return.

I am, Sir, yours faithfully, B. B. SAPWELL, M.B., B.C. Cantab.

Aylsham, Oct. 5th, 1909.

RECEIVING HOUSES FOR LUNATICS.

To the Editor of THE LANCET.

SIR,—The London County Council at its last meeting by a majority of one vote decided to apply for Parliamentary powers to establish one receiving house for lunatics, the original resolution being to provide for four such institutions. The existing practice is for all poor lunatics in the county of London to be taken to the infirmary or workhouse of the union to which they belong. In some districts the mental wards are situated in the workhouse, whilst in others they form part of the infirmary. Undoubtedly they should con-stitute a portion of the latter institution, which is devoted entirely to the treatment of the sick under the direct superintendence of a medical man, and except in very few instances this is the case, the exceptions being due to the fact that Poor-law affairs have for many years been in a very unsettled condition. Threats of transference of authority and of abolition have been made over and over again, and the feeling of uncertainty as to the future which these prognostications have caused has resulted in an unwillingness on the part of boards of guardians to spend any money on bricks and mortar with a possibility of the buildings being rendered unnecessary in a few years' time.

The line of practice adopted by the medical officers has been to send as few cases as possible away to the asylums. It has been found that a short detention will cure more than a half of the cases admitted. In 1902, 8076 cases of lunacy were admitted to metropolitan infirmaries and workhouses and 3920 were subsequently sent to lunatic asylums. In 1903, out of 8004 admissions, 3792 were sent away. In 1904 the figures were 7654 admissions and 3716 transfers. In 1905—and there is no later return—there were 7322 admissions and 3583 relegations to asylums. The more modern infirmaries are enabled to keep their cases longer because their fully equipped mental blocks give them more room. These naturally show a better rate of recovery. At Lewisham, for instance, which has a specially designed pavilion, our percentage of transfers to asylums has been for years about 33 per cent. The present system ensures that only confirmed cases are sent to asylums; it thus obviates the stigmatising as lunatics of from 50 to 66 per cent. of the patients, whose relatives are thus spared the pain caused by the infliction of an unnecessary blot upon the escutcheon of the family history. The infirmaries, being within reasonable distance of the friends, are easy of access for the purposes of visiting and for the necessary interviews with doctors and

Printed statements published by the asylums committee assert the necessity for the patients being placed under treatment as early as possible, implying that the County Council has something better to offer than the system which is in existence. So far as actual experience in the treatment of incipient lunacy is concerned, they can advance no claim for special knowledge, as for the past 15 years they have had no such cases sent them, all having been retained for the statutory period in the infirmaries and workhouses. The crowning act of audacity on the part of this committee has been to quote a paragraph from the recent report of the Royal Commission on the Care and Control of the Feeble-Minded, written in praise of the present system as practised in London, and by judicious omission and pruning to make it appear as though the words had reference to its suggested reception houses. The paragraph in point is No. 712. its desire for aggrandisement the asylums committee naturally has to make as good a case as possible, but this is scarcely playing the game. To my mind it is not desirable that the body responsible for the detention of lunatics should also be entrusted with their certification. Under the present system if a mistake should occur the asylum authorities would be quick enough to rectify it, but would there be an equal inducement for keenness if they were responsible for the initial stages?

I trust that Parliament will not allow the London County Council to force its hand. The whole of the Poor-law system is in the melting-pot, and it is quite possible that the County Council may not be the body chosen to remould it. Under any circumstances it should not be allowed to steal a march and to plunge the ratepayers into expense for a scheme which, after all, may not be even an intelligent anticipation.—I am, Sir, yours faithfully, F. S. Toogood, M.D. Lond.,

Medical Superintendent, Lewisham Infirmary; Lecturer upon Lunacy Law to the School of Sociology.

Lewisham, Oct. 18th, 1909.

THE BENHAM TOP.

To the Editor of THE LANCET.

SIR, -Dr. F. W. Edridge-Green's explanation in THE LANCET of Oct. 16th does not quite answer my question in the previous issue. As the black lines correspond to a portion of the retina which has not been stimulated, so also must the black half of the disc of which, as he says, they are a continuation. The question therefore remains why one should give an after-image of green and the other of red. It seems curious to speak of the "after-image" of an object that has not stimulated the retina at all, but apart from that difficulty the problem unsolved is, Why should the black mass produce an effect of green and its continuation one of red?

I am, Sir, yours faithfully, th, 1909. CHARLES E. BENHAM. Colchester, Oct. 18th, 1909.

IS SNOW-WATER UNWHOLESOME?

To the Editor of THE LANCET.

SIR,—A peculiar interest is attached to Dr. G. A. Atkinson's statement that he and "dozens of men" can drink large quantities of snow-water without harm, for not only does it enter into conflict with the admitted testimony of experienced guides but it would also appear to be a direct negation of well-established theoretical principles.

In looking into the question as to whether a particular water is fit to drink it is useless to rely upon an ordinary chemical analysis which merely expresses the percentage of salts, because it disregards the fundamental fact that in consequence of solution in water these salts break up into a larger number of molecules than is indicated by their chemical formulæ—i.e., undergo ionisation; and it is upon the number of ions per unit volume that the physiological action of water depends. Now, the presence of electrically charged ions in a solution is the cause of electrical conductivity in that solution. Without the liberation of ions no current passes, and the two phenomena-ionisation and electrolytic

conductivity—run on parallel lines. The conductivity of a solution is, in fact, proportional to the number of dissociated molecules of matter contained therein, so that the coefficient of electrical conductivity will give us an accurate record of the extent of ionisation. Ordinary drinking water has a fairly high coefficient of conductivity, and this implies that it must contain ions in more or less quantity. On the other hand, the purest natural water, obtained from natural ice or snow, has only a conductivity of 2.13, and this figure represents the relative number of ions present.

Now, what effect can this low ionisation have upon the harmlessness or otherwise of the water as a drink? According to the kinetic theory, the molecules of all substances above the temperature of absolute zero are in a state of incessant motion. When a solution is brought into contact with a semi-permeable membrane, such as is to be found in animal tissue, the water can freely percolate through, but the molecules of the dissolved substances find the barrier impermeable. Yet, though they cannot penetrate the septum, they can, and do, exert a continual pressure upon it by virtue of their perpetual movement; this osmotic pressure is regulated by the number of molecules held in solution, but is independent of their nature. Since an ion in solution ranks as a molecule, whether it represents an atom or a group of atoms, it follows that the osmotic pressure exerted by snow-water is extremely low. But the blood service has a very considerable osmotic pressure, due chiefly to its NaCl content, and this is maintained at a nearly constant level. When, then, two fluids of such different osmotic pressure are lying on either side of the stomach wall (which is permeable to water from blood to stomach, but not from stomach wall to blood) there must be a relative increase in the velocity of the osmotic stream from the blood, since there is only a diminutive counterstream opposed to it. The tendency would then be for the epithelial cells of the stomach wall to become swollen, and perhaps loosened, by the fluid that is drawn from the higher to the lower pressure level. In fact, the drinking of snow-water is apt to produce an urticaria of the stomach mucous membrane, with all its attendant symptoms of gastric distress: it acts as a protoplasmic poison on the gastric cells simply by virtue of its want of approximation to the normal osmotic relations of the body fluids. It is not the low temperature of the water (though that certainly assists by depressing the warning sense of taste) but its extreme purity that carries danger with it.

The same considerations, of course, apply to the not un-common experience of finding that, after a time, patients object to being given ice to suck, complaining that it nauseates them. Under such circumstances artificial ice is often much better tolerated than the natural product, not because it is purer but for the very opposite reason. Its coefficient of conductivity is as high as 137, and therefore it approaches more nearly in characteristics to ordinary tapwater. Since, then, both reason and practical experience seem to support your contention that "melted snow has a tendency to produce very harmful symptoms," I think we may legitimately indulge in a paradox, and assert that the toxicity of uncontaminated water is only commensurate with

its purity.

But when we come to question the relationship between snow-water and simple goitre we are on much more un-certain ground, and I would be inclined to reverse Dr. Guthrie's suggestion and say that the old doctrine that snowwater is generally unwholesome has led to the belief that it causes so terrible a condition as goitrous cretinism. Certain it is that when a disease is ascribed in one district (e.g., the Alpine) to the purity of the water, and in another (e.g., Staffordshire) to the Ca and Mg constituents of the water we are far from arriving at its true etiology. That the latter supposition is untenable seems clear when we remember the number of patients who drink the earthy alkaline and calcareous waters of such spas as Contrexéville or Wildungen. These resorts would soon lose their popularity if the unhappy visitor was to be penalised for the cure of his urinary disorders by the unwelcome acquisition of a bronchocele. And if snow-water is responsible for the condition the recommendation to distil the water of goitrous regions is at least a little curious.

The truth seems to be that any influence the condition of the water has on the endemic factor is only a slight one. Martin 1 has clearly shown this in an inquiry into the causes

of goitre as met with in Staffordshire, and McCarrison,2 in a very convincing paper, goes further and adduces strong arguments in favour of the disease being due to an intestinal parasite which has its external habitat in calcareous soil. He points out, too, that filtration of the water does not prevent or cure the disease as long as people live in the infected area, although an organically impure water may further its spread.—I am, Sir, yours faithfully,
Blackpool, Oct. 20th, 1909. RALPH S. OLDHAM, M.D. Dub.

THE ETIOLOGY OF LEPROSY. To the Editor of THE LANCET.

SIR,-With reference to your annotation in THE LANCET of Oct. 16th on "The Utility of the Examination of the Nose and Nasal Secretions for the Detection of Leprosy," the idea that leprosy started in the nose is an old one. In a general review of leprosy which I contributed to the Quarterly Review (No. 394, April) in 1903, I mentioned the view of Pliny on the point, viz.: "Diximus elephantiasim ante Pompei Magni estatem non accidisse in Italia, et ipsam a facie sæpius incipientem, in nare prima veluti lenticula, mox increscente per totum corpus, maculosa variis coloribus et inæquali cute, alibi crassa, alibi tenui, dura, alibi ceu scabie aspera, ad postremum vero nigrescente et ad ossa carnes adprimente, intumescentibus digitis in pedibus manibusque" (Pliny, Book XXVI., I., 5 (Ed. Teubner, Leipzig, 1897, p. 176). This opinion of Pliny is also referred to by Fracastor in his chapter on "De Elephantia" (Caput XIII., Liber ii., de Contagionibus, et contagiosis morbis, et eorum curatione).

A few years ago Sticker, a German observer, expressed the opinion that leprosy practically always began in the nose. This is too sweeping a statement. But the possibility of such a mode of infection should always be borne in mind, especially from the point of view of early treatment, which should be energetic. As to "acid-fast" bacilli generally, it has been shown that they may normally inhabit the nose,

quite apart from leprosy-a point to bear in mind.

I am, Sir, yours faithfully, GEORGE PERNET, M.D., Harley-street, W., Oct. 18th, 1909. English Editor of Lepra.

"SUITABLE FEES."

To the Editor of THE LANCET.

-At a meeting of the South-West London Medical Society held in Bolingbroke Hospital the enclosed correspondence was brought before the members, and they, feeling that it was a matter which should be brought before the profession at large, asked me to forward it you for early publication.

I am. Sir. vours faithfully

LEONARD S. MCMANUS.

President, South-West London Medical Society. Spencer-park, S.W.

President, South-West London Medical Society.

Spencer-park, S.W.

[COPY.]

Metropolitan Borough of Wandsworth, Council House,
Wandsworth, S.W., 4th October, 1909.

Dear Sir.—A committee of this council have under consideration the
desirability of retaining the services of a medical practitioner in each of
the five districts into which the borough is divided to examine the
council's employees who claim sick allowances in cases of accident or
illness, and to certify whether or not they are capable of discharging
their duties. Before making a recommendation on the subject to the
council the committee are desirous of ascertaining the approximate cost
of the proposed scheme, and from inquiries which have been made the
following appear to be suitable fees for the work. (a) If the employee
attends at the medical practitioner's surgery 1s. per case for each
examination and report: (b) If the employee is unable to attend at the
surgery and the medical practitioner visits him at his home 2s. 6d. per
case for each examination and report.

Wherever possible the men would be required to attend at the
medical practitioner's surgery for the examination, but in some cases it
would be necessary for it to take place at the men's homes or elsewhere. With the view of assisting the committee in coming to a
decision on the subject I shall be obliged if you will inform me whether
you would be willing to undertake the work referred to in the district
No. 1 shown on the enclosed map on the terms above mentioned.
Kindly return the map when you reply.

I am, dear Sir. yours faithfully,

HEN. GEO. HILLS, Town Clerk.

Dr. B. Duke.

[DR. DUKE'S REPLY.] Windmill House, Clapham Common, Oct. 11th, 1909.

Windmill House, Clapnam Common, Cev. 1101, 1200.

DEAR SIR.—While thanking you for so kindly submitting to me the list of fees offered by the council for examining and certifying their employees I must respectfully decline such a tempting offer. I can only regret the council has such a contemptible opinion of the value of a medical man's time.

I am, dear Sir, yours faithfully,

B. Duee.

Henry Gee. Hills, Esq.

THE THIRD INTERNATIONAL CONGRESS OF THE MEDICAL PRESS.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

As I have briefly reported to your readers, the Third International Congress of the Medical Press was held in Budapest on August 27th of this year, just before the meetings of the International Medical Congress. The importance of the occasion will justify me in now giving a full account. The Congress was held in the Academy, a palatial edifice of Renaissance style built some 40 years ago in the most beautiful part of Pest, overlooking the Danube, close to the great suspension bridge and with the old and picturesque town of Buda just opposite. It contains a large library, a lofty reception-room, a historical picture gallery, and many commodious rooms for the meetings of learned societies. One of the largest of these rooms was placed at the disposal of the International Association of the Medical Press for its Congress and other meetings.

The Formalities of the Congress.

On Friday, August 27th, there was held the International Congress proper, at which any medical journal could be represented. On Saturday morning the General Assembly of the International Association of the Medical Press held its meeting, while the first part of Saturday afternoon was given up to a meeting of the international committee of that association. Thus on the Saturday only representatives of journals that are affiliated to the Association of the International Medical Press had a right to be present.

Early in the morning of Friday a large number of Press representatives were already assembled, when in the absence through illness of Professor Posner of Berlin, President of the Association, Dr. L. DÉJACE, editor of the Scalpel (Belgium), as Vice-President of the Association, took the chair. Professor M. DE LENHOSSÉK rose first on behalf of the Hungarian Association of the Medical Press to wish a hearty welcome to the members of the Congress. He expressed the desire felt by all his colleagues that the aspirations which had brought the congress together might be fully realised. In Hungary the medical press was young but progressive. The first Hungarian medical journal was issued in 1831 and it was not till 1857 that a second paper made its appearance. That second paper, after weathering many a storm, still exists and several other papers have sprung up since. If we include journals devoted to hygiene there are some 30 medical papers in Hungary. Better still, they were now united together in a press association and modestly claimed to take their stand by the side of the greatest publications of the world as fellow members of greatest publications of the world as fellow memoers of the International Association of the Medical Press. The Hungarian papers strove to make known the latest pro-gress achieved. They were at one with the moral principles proclaimed by the International Association of the Medical Press and would willingly participate in any endeavour to preserve the tone of the medical press as a whole. "The Hungarians are grateful to the association for having included their papers among those which have this aim," said Professor M. de Lenhossék, who concluded by again cordially welcoming the Congress to Budapest. After a courteous letter from Count Albert Apponyi, Minister of Public Worship and of Public Education, had been read, in which that energetic Minister regretted that he could not be present in person to welcome the Congress and this in the name of the Hungarian Government.

Professor Dr. CALMAN MULLER, President of the Sixteenth International Congress of Medicine, rose and said that he was pleased to have an opportunity of expressing his thanks to the medical press. But for the support of the press the International Medical Congress could never have attained its present magnificent developments. The press did not only record what occurred, but it prepared the road for the future. The true journalist was the precursor of his time. He was not content to relate what had happened but must go forward, hold up the light, and prepare the way for what was going to happen.

As acting President of the Congress Dr. L. DÉJACE responded to these welcomes in the name of the meeting,

had lent every assistance to assure the success of the present gathering. He then went on to point out that the medical press had become the instructor of the medical profession and was inspiring the medical practitioner with the desire to continue to learn after the obligatory portion of his education was terminated. Medicine could not stand still, while changes came not only from within but from without. New laws were made by countries to meet new necessities, which in their turn altered the position of medical practitioners. "We are now," said Professor Déjace, "as a profession beginning to treat society as a whole, where formerly we only treated its individual members. In such collective treatment governments and municipalities have to take part, and here comes in the most useful function of the medical press. It is for the medical journals to teach how we can best prepare for collective defence against the spread of disease. Fatal thrombus will result if the circulation of ideas is not well maintained."

Dr. R. BLONDEL, General Secretary of the Association, spoke next, and said that the meeting being open to representatives of all medical papers the agenda would treat questions of general interest where it was needed to find effective remedies for acknowledged evils. "The journals which are already grouped together," he said, "will resent any interference, but must make some sacrifice for the sake of union. On the other hand, we have to exclude those whose purport is to promote some trade or business interest. We must not let the commercial element trespass on the scientific and literary sides of our work, otherwise the medical press will sink to the level of the political press or fall into the hands of mere financiers. In this great struggle we must be unanimous and not fear if an individual paper here and there drops out of our ranks. We must remember that we are the servants of truth; that truth cannot be served unless we are free; that we must have strength to defend our freedom, and to secure that strength we must be united."

The History and Object of the Movement.

Dr. DÉJACE then vacated temporarily the chair so that he might present his report on the History and Object of the Association. He recalled how unmanageable the medical congresses had become and that, so far back as the congress held at Rome in 1894, Professor Posner of Berlin, Dr. Baudouin of Paris, and others had discussed the difficulties facing the medical press when it attempted to describe such vast and disorderly assemblies. In 1897 members of the French medical press, having debated these matters, decided to hold an international congress of the medical press in Paris during the Universal Exhibition of 1900. This congress took place on July 26th of that year, immediately after the Congress of Medical Deontology (medical ethics and economics) and just before the Thirteenth International Congress of Medicine. All who were present, he said, would remember the interest manifested on that occasion. for honorary president Professor Virchow and for acting president Professor Cornil, and we appointed a committee to decide whether it was advisable to form an international association of the medical press and to prepare for a second meeting. We met again at Brussels in 1901 and at Monaco in 1902, when, thanks to the gracious hospitality of Prince Albert of Monaco, the representatives of various nationalities were entertained for three days and drew up the rules and constitution of the association. In 1903, when the Fourteenth International Congress of Medicine met at Madrid, a Second International Congress of the Medical Press was held which definitely accepted the rules prepared at Monaco and thus the international association was definitely constituted. Since then the international committee of the association has met every year, while a general assembly was held at Lisbon in 1906, as now at Budapest, just before the International Medical Congress. Dr. Déjace then passed in review the various topics discussed at the annual committee meetings and larger triennial gatherings. The most diffi-cult question was to draw the line between legitimate and illegitimate publicity. Some thought that the ideal medical journal would be without any advertisements, but he admitted that as the medical press appealed to only one class of the public it might not be able to live on its circulation alone, while the advertisements were most useful to the profession by keeping before them a record of the resources that were at their disposal. But saying that he understood that the Hungarian Government the association would not recognise concealed advertisements

and refused to admit to affiliation journals that were distributed gratuitously. The Association of the Medical Press had endeavoured to prevent the publication of articles in the lay press that professed to be signed by medical men but which were not written by medical men, and in other ways had attempted to protect the public against paid "puffs," and he was sure that as time went on the efforts of the International Association of the Medical Press would be gratefully acknowledged by the public.

Dr. BLONDEL said that the paper just read did not need discussion, and he only rose to add some information to that already given. Two new associations had joined, the Polish Association and the Hungarian Association. On the other hand, the Portuguese Association had fallen out of the ranks, and the Americans, in spite of continued negotiations, had not yet come in. But if the United States of America could not as yet participate in our work we were actively supported from other parts of the New World, and he was glad to welcome, in the present assembly, representatives of the Brazilian and of the Mexican medical press. Russia was now coming back to the fold. It is true that this was unofficial, for anything like an international association was not tolerated in Russia. But the medical press in Russia had a very strong national organisation which was animated with the most friendly feelings towards the national associations of the medical press in all other countries.

The British Report and Proposals.

The PRESIDENT now called for the report of the British delegation. This had been translated and printed in French and was in the hands of all present, and was as follows:-

DRAFT REPORT FOR THE MEETING OF THE INTERNATIONAL

DRAFT REPORT FOR THE MEFTING OF THE INTERNATIONAL ASSOCIATION OF THE MEDICAL PRESS.

At the meeting of the International Committee of the Medical Press held in London in 1907 three resolutions dealing (1) with articles written by medical men in favour of medicinal products; (2) with medical advertisements generally; and (3) with the assigning of rights of republication of articles in medical journals to commercial firms by medical authors were agreed to. Inasmuch as the practical value of these resolutions must depend on the recognition of the principles involved by the general body of the medical profession in each country, they were submitted to the British Medical Association and were approved by it at its annual meeting last year (1908). As, however, the third resolution contained no provision with regard to the reproduction of articles by the medical authors themselves for the purposes of advertising medicinal products the following additional resolution was adopted at the annual meeting of the British Medical Association at Beliast in July this year (1909):—

of articles by the medical authors themselves for the purposes of advertising medicinal products the following additional resolution was adopted at the annual meeting of the British Medical Association at Beliast in July this year (1909):—

That it is the professional duty of medical authors of articles in medical journals to cooperate with the proprietors and editors of those journals in preventing any improper use of such articles for the purposes of advertisement.

This extension of the original resolution of the International Association of the Medical Press to provide that articles dealing with medicinal products written by medical men and published in medical journals shall not be reproduced by the manufacturers or by the authors for the purposes of advertisement without the specific consent of the editors, proprietors, or publishers, offers a safeguard against puffing. If manufacturers alone were required to obtain permission from the editors or publishers before reproducing articles dealing with drugs, preparations, or other chemical products, it might be possible that manufacturers might attempt to induce medical authors to undertake the reproduction of the articles for them, so that the provision contained in Resolution 3 would become nugatory. To prevent such evasion of the principle involved in Resolution 3 by a legal agreement between the author and the editor or publishers of the medical journal in which the article appeared would under English law at least be costly and troublesome, and such a legal document would be wholly unnecessary in the case of the majority of articles on therapeutics or pharmacology which are written in a disinterested manner by men who would not lend themselves to a dishonourable agreement. Since it appears that it would be difficult and inadvisable to deal with the matter by a legal document, it was recognised that a sufficient safeguard would be obtained if the medical profession declared that the republication of articles referred to without the consent of editors or p

What is Advertisement?

The British report gave rise to a great deal of discussion. Dr. NEUSTATTER, for Germany, agreed in principle with the British report, and then described his German experiences. The great difficulty was the limitations of the copyright law. Even when authors and their publishers were agreed, a business firm could reproduce for advertisement purposes what had been said and there was no redress, and he proceeded to mention several such cases.

Mr. W. H. ARMIT, for the British contingent, answered that the point at issue was not properly understood. There was a tendency to mix up the question of articles written expressly to serve for advertisement purposes and those referred to in the British report, which were written in good faith and were not meant to be used as advertisements, but which were so utilised by commercial houses in spite of the protests of the authors and the publishers. What the British section desired was to appeal to the entire medical profession to deal with the matter as a question of honour.

Dr. NEUSTATTER again rose, saying that the illegitimate use of such articles could not be prevented. Even if no one consented to their reproduction they would be reproduced all the same.

Dr. BLONDEL appealed to the Congress to keep to the question of improper advertisement or "réclames."

Dr. GRUN (Vienna) endeavoured to define what was meant by the word réclame. The grievance had reached such a point that the medical press tended to suppress therapeutic investigations. Men of science were afraid to test the action of a drug for fear of being accused of "puffing" some com-mercial product. He thought the International Association of the Medical Press should define what was justifiable and what was not.

Dr. R. JAFFÉ (Hamburg) agreed with Dr. Grün, and Mr. ARMIT informed Dr. Jaffé that advertisements offered to the English medical journals, THE LANCET and the British Medical Journal, were controlled by the editors.

Dr. FOVEAU DE COURMELLES (Paris) pointed out that customs differed in the different countries. In England there were very few medical journals and they were strong enough to do as they liked. It was difficult to define where legitimate publicity ended and "puffery" commenced. It seemed to him that the only positive distinction was the question of payment. If the parties interested paid to have the article written and published, then it was a "puff" or réclame. If they did not pay, then, however favourable the article might be, it was to be accepted as legitimate praise. But no one had the right to reproduce such an article for advertisement purposes. There were such things as copyright

Dr. Lucas-Championnière (France) remarked that there were in Germany poor persons who, under a scientific guise, made it a business to write "puffs." In France there were pseudo-medical journals, owned and published by druggists, which were "puffs" from beginning to end. What was needed was a scheme of measures to meet the different practices of the various nations. In France the copyright law could be used in certain circumstances, but not so in others, especially in regard to names. Thus the speaker had once written a paper on the benefits derived from the use of oxygenated water in medicine. Thereupon a manufacturer of absinthe introduced some oxygen in his absinthe and then quoted what the speaker had said on the benefits of oxygen and made it appear as if his absinthe was approved by the Dr. Lucas-Championnière wanted to prosecute speaker. the absinthe manufacturer, but his lawyer strongly advised him not to embark on so expensive and hazardous a course. "We must more clearly define what we mean and what is our position," said Dr. Lucas-Championnière, "but even then we should not be able to prevent our names from being used in vain."

Professor Ascoli (Italy) remarked that much depended on the ability of the editors to discriminate between legitimate and illegitimate publicity.

Mr. ADOLPHE SMITH (London) agreed that a clear definition of the terms used was needed. Dr. Blondel had said that a réclame was "a paid article." Surely this was only half the sentence. A réclame was an article paid for by a commercial firm to promote the sale of its products. journalist living as a journalist must be paid for the work he is commissioned or engaged to do. He could not live on thin air. The scientific journalist's position should be sufficiently independent to allow him to devote himself exclusively to the pursuit of truth.

Dr. FOVEAU DE COURMELLES doubted if there were any medical journalists, medical men who lived exclusively by journalism, in France, a view with which Dr. Lucas-CHAMPIONNIÈRE was not wholly in accord.

Dr. BLONDEL, in reply to Mr. Adolphe Smith, said that payment in return for the writing of puffs was illegitimate; he did not refer to legitimate payment for the writing of articles by professional journalists. "A réclame," he said, "is an article for which the writer is paid either by a commercial firm or by the owners of a paper and in which the writer has to express a favourable opinion concerning a drug, an appliance, or perhaps a method of treatment. The writer is not free to say what he conceives to be the truth: he turns out a venal article. We of this association are opposed to such articles because they obscure the truth and demoralise letters." This sort of article, he went on to say, had become a form for obtaining publicity; it was driving out the old and legitimate form of advertisement where the reader knew what was editorial and what was not. Many medical journals had a column which was usually denominated "Therapeutic Notes," and in France it was open to abuse. A certain sort of advertiser will, for instance, sign a contract for three years. At the end of the second year he will write a letter pointing out that he is a good advertiser and asking that a very serious and scientific note, which he encloses, may be published in the body of The very serious and scientific note proves to the journal. be a puff, but if it is not inserted the probabilities are that at the expiration of the three years the advertisement will not be renewed. Dr. Blondel insisted that it was necessary for medical journals to unite so as to stop this sort of thing, or in a few years the medical press of France and some other countries will be quite helpless. In Germany certain manufacturers have helped the medical press to get rid of a class of writers who offer to turn out "puffs." A list of those who approach commercial firms with such offers has been drawn up and communicated both to editors and manufacturers, with the result that this abuse is in a fair way to total extinction in Germany. Dr. Blondel thought that it might be a resolution of the Third International Congress of the Medical Press that all journals in the association should declare to their advertisers that the sale of space implied no other obligation on the vendors, and that such papers as would not assent to the proposal might be excluded from the association.

At this stage the discussion was brought to a close, and the Congress adjourned for lunch.

A Permanent Commission for the Organisation of International Congresses of Medicine and of the Allied Sciences.

At the afternoon sitting of the Congress the report submitted by Dr. DAWSON WILLIAMS concerning the formation of a Permanent Commission for the organisation of International Congresses of Medicine and of the Allied Sciences was discussed. This report having been translated into French was printed and distributed among the members present. Mr. ADOLPHE SMITH explained that the report had been fully discussed by the British Section of the International Association of the Medical Press, Dr. Squire Sprigge presiding. Several points had been altered and modified, and it might now be taken as representing the opinions of the British It might also be considered, if not as an amendment, then as an attempt to elaborate certain proposals that had been issued from Budapest and forwarded to the various national committees of the International Medical Congress. These latter proposals gave but few details and did not touch at all on the question of ways and means, but while providing for the constitution of a Permanent Commission also proposed to exercise discretion over the sectional resolutions and select those to be submitted to the plenary sessions. The British project in a preamble set forth the necessity of continuity and proposed the creation of a Permanent Commission consisting of delegates of national committees, secretaries of the sections of the previous congress, the president and general secretary of the forthcoming congress and of the congress just over. This would mean a sort of international parliament of about 70 members, quite a small congress in itself. Consequently it could not meet often but should meet immediately after each international congress and could be convoked between the congresses if some exceptional difficulty arose. The most important function of this Commission would be the election of a small executive committee called the bureau, consisting of not more than 20 members, which would meet at least once a year, and really do the work. So that this work should be continuous the bureau would appoint a permanent paid general secretary, possessing knowledge of three European languages, experience of congress management, and ready to take up his residence in the city where the next congress was to meet at least four months in advance.

Dr. Blondel opened the discussion by saying that at Budapest he had found the preliminary organisation very complete and systematic. The International Commission would meet in a few days and the representatives of all the nations would then discuss a proposal for the creation of a permanent commission consisting of only one member per nationality, and no representative whatsoever of the Press. It was the same idea as that put forward by the British Section, but with fewer persons, for the British proposed two representatives per nation and three representatives of the International Association of the Medical Press.

Mr. H. W. Armit said the object was to send the British proposal to the international meeting when it was held, in the hope that some at least of the suggestions it contained would be adopted.

Dr. DÉJACE, who was presiding, gave further explanations,

Mr. ADOLPHE SMITH pointed out that the British proposal differed in two important respects from the proposals emanating from Budapest. The first article of the Budapest scheme said in its first clause that the Permanent Commission would have "to examine resolutions adopted by the sections and select those which shall be submitted to the Plenary Assembly." This was so delicate a matter, bordering on the establishment of a censorship, that the British section had left it out altogether, thinking the whole subject needed very careful study before attempting to legislate upon it. Then also the draft regulations from Budapest said nothing whatsoever about the other congresses. Yet one of the very first objects in creating a permanent commission was to prevent clashing with other congresses. It was not generally realised how many members of the medical congress were also members of these other congresses. There was, for instance, deontology; this was not exclusively medical, but the ethics, the dignity and economics of the profession interested every medical man without exception. Only one international deontological congress as yet had been held, but it was to be hoped others would follow. Then the congresses, such as those on tuberculosis, hygiene, demography, alcoholism, food adulteration, housing of the poor, school hygiene, and the long list of special diseases, otology, dermatology, &c., all these had their periodical international meetings, and yearly the confusion was becoming worse confounded. What was needed was some permanent and international authority that would marshal all these various efforts, systematise them and establish order.

Dr. DÉJACE agreed that an authority capable of acting as a uniting link was very desirable, but he did not think the meeting could ask the International Medical Congress to form such a link.

Dr. Lucas-Championnière argued that as the International Medical Congress could not do it the medical press should undertake the task. "We," he said, "are separated, but our mission is to gather together and to unite dis-associated interests." He would support the arguments brought forward by Mr. Adolphe Smith. The press would be crippled if, for want of international organisation, two important congresses met at the same time. It was difficult enough to describe and to report one congress, let alone two. The organisations of medical and allied congresses should consult the international committee of the International Association of the Medical Press. The members of the committee had to attend these various congresses and knew all about them and were therefore the natural arbitrators in such matters. The press had to serve all the congresses, and the congresses dealing with sociology interested medical men nearly as much as those only concerned with purely and solely scientific subjects.

Mr. ARMIT said that the British section did not show the audacity of Dr. Lucas-Championnière and feared that as an organisation the medical press were not yet strong enough to carry out so ambitious a programme.

Dr. BLONDEL remarked that the International Congress on Tuberculosis, as also that on hygiene, had already permanent international commissions; what was needed was a link between these commissions.

Dr. LUCAS-CHAMPIONNIERE, speaking again, urged that the permanent commission of the International Medical Congresses should negotiate with the international committee of the International Association of the Medical Press as to when the medical congresses should meet, and considered that the latter body should be asked to advise in regard to the organisation of such congresses. As an international

association the debates of the journalists demonstrated that they were not always agreed in matters of ethics; but in respect to the organisation of medical congresses they were quite unanimous and possessed the necessary experience.

Dr. K. Jaffé agreed in principle but doubted whether the

other bodies concerned would also agree.

Dr. DÉJACE then consulted the meeting as to whether it would support the formation of a permanent commission for the international congresses of medicine, and this was

unanimously approved.

Dr. LUCAS-CHAMPIONNIÈRE said that all parties or congresses were free to found any organisations they might fancy. The point was that where such organisations or permanent commissions were formed, they would, one and all, have to avail themselves of the services of the medical press. A medical congress would do as it pleased; but the press would act for all, and should become, by its widespread experience, the natural international adviser.

Dr. BLONDEL said that the International Medical Congress had the same idea, but, nevertheless, no member of the press congress had been invited to take part in the meeting that was to decide as to the formation of a permanent commission. It so happened that two or three members of the Press Congress, being also secretaries of their national committees, were entitled to participate at the meeting in question. This was his own case, and Dr. Blondel offered to submit any proposal the Press Congress might make.

Dr. LUCAS-CHAMPIONNIÈRE said that some confusion had arisen. The question was whether the organisation formed by the medical press could become the permanent connecting link between the various congresses. At present the press had no voice at the meeting to be held by the International Commission of the present Medical Congress. "We can act "We can act for ourselves," he said, "and call upon other bodies to

support us."

Mr. ADOLPHE SMITH thought that a permanent international commission would need paid assistants to do clerical and other work, and also men of great diplomatic skill to manage. The press organisation did not as yet possess the men or the money to undertake successfully such a task; but it wanted to be represented in an influential manner on the permanent commission which the Medical Congress was about to appoint. Further he urged that the permanent commission of the International Medical Congress should federate with the permanent commissions of the other international congresses representing the allied sciences.

Dr. LUCAS-CHAMPIONNIÈRE expressed his satisfaction that the position was now clearly defined. The press must be largely represented in the work of the organisation of congresses, otherwise grave defects are sure to arise. "We therefore claim a big place where at present we have no place

Dr. JAFFE now formally proposed that the British report on the formation of a permanent commission for the organisation of International Congresses of Medicine and of the Allied Sciences be presented to the Commission of the present Medical Congress, so that this document, together with the observations made during the course of this debate by Mr. Armit and Mr. Adolphe Smith, might serve as a basis of discussion.

After a few more observations and explanations this proposal was formally put to the Congress and carried unanimously. The discussion on this subject was thus terminated.

What the commission of the Medical Congress did with the proposal presented to it by the Congress of the Medical Press and how it dealt with the entire question is recorded in THE LANCET of Sept. 11th (p. 800, et eq.), the result of the deliberations being that the President of the International Association of the Medical Press was included in the Permanent Commission.

Summaries and Translations of Original Articles.

The next subject for discussion was a report presented by Dr. BLONDEL on the advisability of printing summaries of original articles in various languages. Some Swedish and Norwegian medical journals already do this, he said, and it greatly facilitates the spread of knowledge.

Dr. M. DE LENHOSSÉK, President of the Hungarian Section of the International Association of the Medical Press, explained that Hungarian papers were also in the habit of publishing summaries of their contents in French

Professor DURUY thought this was an excellent practice,

as in the course of time men would find that their only chance of success depended on their ability to write in at least one of the three international languages.

Dr. NEUSTATTER said the most essential was to have a French summary of the English and German articles. Every German was obliged to learn French, and not 5 per cent. of

them knew English.

Mr. ADOLPHE SMITH said they had not the power to force the owners of journals to incur the expense of these translations; and the British representatives at the Congress had been instructed not to promise what they were not sure of being able to carry out.

The Italian delegates, Dr. CECHERELLI and Professor ASCOLI, suggested that Italian should be one of the international languages, but a proposal that summaries should be

in all four languages was rejected.

Finally, a resolution was carried recommending all journals affiliated to the International Association of the Medical Press to place at the conclusion of original articles a summary of the article "in one of the languages habitually employed for international relations."

Meeting of the General Assembly of the International Association of the Medical Press.

On the following day, Saturday, August 28th, was held the general assembly of the International Association of the Medical Press. The difference between this meeting and the Congress was that, instead of being open to all comers, only representatives of journals affiliated to the International Association of the Medical Press were admitted. Nevertheless, there were present delegates of the medical press assotions of Austria, Belgium, Brazil, Canada, Egypt, France, Germany, Great Britain, Hungary, Italy, Poland, Spain, and a Russian doctor, who, however, had to explain that, while sympathising in every way, it was illegal for Russians to belong to an international organisation.

At the commencement of the morning sitting Dr. LE CAVALIER of Montreal informed the meeting that in Canada there were three medical journals published in French and three in English. They desired to enter into regular com-munication with the medical press of Europe, so that the efforts made in Canada should not be ignored by the rest of

the world.

Dr. QUEVADO of Brazil found that in Brazil there was no one journal sufficiently distinguished to be unanimously chosen as leader; therefore, they were divided by jealousies. Consequently, he thought that great good might be achieved if some central body, acting from without, could call upon the various Brazilian journals and journalists to join the Brazilian Association of the Medical Press.

Dr. JAFFÉ explained how the black list of the authors of puffs had worked satisfactorily in Germany and urged that the editorial staffs of newspapers should control the adver-

tisement columns.

Mr. Armit again explained that the two leading medical journals in England-THE LANCET and the British Medical Journal—controlled their advertisements editorially. He stated that the British Medical Association and the British Section of the International Association of the Medical Press were both now investigating what sort of fees might be legiti-mately given to medical men who undertook to write impartial reports on clinical and pharmacological subjects. This question was very complex and much study was needed before practical proposals could be made.

Favourable reports were received as to the organisation of

the sections in Belgium, France, and Spain.

Dr. LUCAS-CHAMPIONNIÈRE suggested that to establish a system of insurance, or indeed any scheme of social work, might be of great service in strengthening the bond of union.

Dr. R. BLONDEL said that already proposals had been brought forward to, for instance, centralise all the subscriptions raised from time to time in various journals (1) to relieve distress; and (2) to erect monuments to deceased famous men. Passing to the general business, he said that though there were no representatives from Holland on the present occasion they had received a written report from Holland describing the efforts made to keep quack advertisements out of the Dutch papers.

Professor Andrea Cecherelli explained that the long faction fights in Italy were coming to an end, and that before the conclusion of the current year the medical press of Italy would be united in one single organisation, and able to take

its due share in the international movement.

Dr. CORMANOS PACHA said that that the Association of the Egyptian Medical Press was the youngest branch of the International Association, but it was none the less vigorous and anxious to play its part in the general movement.

Dr. BLONDEL announced that *l'Annuaire* of the asso-

ciation would appear as soon as the Italians had settled their differences.

The question of publishing summaries of original articles in various languages was again discussed, and Dr. Otto NEUSTATTER of the Dresden Gesundheitschrer urged that we were not called upon to select an official language, though he thought that, practically speaking, the French language would be generally employed. The point was to render the practice of translations more popular.

Professor Dr. Julius Donath (Budapest) explained that his paper, the Internetesseler Zeitschrift Epilepsia, was now published in three languages and they hoped shortly to add a fourth, the Italian language. Professor RECASENS of Madrid said a few words for Spanish, which was the language of South and Central America. After this the assembly adjourned for lunch, having contented itself with a general recommendation that translations should be made as often as possible.

Meeting of the International Committee of the Association.

During the midday interval the International Committee of the International Association of the Medical Press held The balance-sheet presented by the its annual meeting. treasurer was submitted and adopted. From this statement it appears that Norway heads the list for regularity of payments. The next point was the election of the officers or bureau of the association, it being understood that they would remain in office for four years if the next medical congress did not meet sooner. Professor Lucas-Championnière (France) was elected President, and Dr. Déjace (Belgium) and Professor Dr. M. de Lenhossék (Hungary) Vice-Presidents. Dr. Raoul Blondel as general secretary and Dr. Dawson Williams as treasurer were re-elected by acclamation. The committee, it was decided, would meet next year at Brussels, probably at the same time as the International Conference on Tuberculosis.

In the afternoon, when the general assembly of the International Association met again, it was decided that the ensuing International Congresses of the Medical Press should be held at the same time as the great International Medical Congresses. Therefore the next International Congress of the Medical Press will meet in England in 1913.

The Question of Puffery.

The assembly then proceeded to discuss once more the question of "puffs," still further insisting on the need of a definition, and it was proposed that the International Committee should prepare a report on the subject to be submitted to the next general assembly.

Dr. LUCAS-CHAMPIONNIÈRE was anxious to applaud the

stand made by the British medical journalists on the subject.

Dr. BLONDEL pointed out that the British proposal was to struggle against both forms of "puffs," the article written as a "puff" and the legitimate article which was subsequently and illegitimately used for purposes of advertisement. There were laws to protect copyright and these should be invoked.

A motion was then carried to the effect that in each country every effort should be made to apply such copyright laws as bore on the question.

The assembly, which had been well attended throughout, had now exhausted its programme, and after a few words of congratulations from the chair the members took cordial leave of each other.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

University of Bristol.

THE number of students entering the Bristol Medical School this first University session is 20, a definite increase on past years. There were 13 competitors for the entrance scholarship, the largest previous number having been 4. The returns for the faculties of science and engineering are also gratifying, the department of chemistry having received over 100 new students.

The Bristol Medico-Chirurgical Society.

The annual meeting of this society was held on Oct. 13th in the Medical Library of the University. The retiring President, Dr. J. Michell Clarke, having introduced his successor, Mr. James Swain, to the chair, the latter delivered his inaugural address. This was a most interesting résumé of the evolution of the art of surgery traced from the earliest times down to the end of the sixteenth century. It was illustrated by a series of lantern slides, judiciously chosen and excellently produced, representing surgical operations and instruments of all periods, beginning with an ancient Egyptian illustration of the operation of circumcision. The fact which Mr. Swain particularly emphasised was that in many respects there was little difference between the principles of surgery as practised by Hippocrates from those on which the operative procedures of the present day are based, a reflection which should engender humility in twentieth century surgeons. The report of the honorary secretary, Dr. J. A. Nixon, showed that the society is full of vigour. During the past year 30 new members is full of vigour. During the past year 30 new members had joined, while 22 had left the society, the total membership on Oct. 1st, 1909, being 166. The average attendance last year at the meetings (which are held monthly from October to May) was 41. The financial statement was also satisfactory, showing a balance in hand of £81 14s. 8d. The honorary librarian's report showed that the new borrowing scheme, initiated during the year 1908-09, had met with favour, 90 members having availed themselves of the opportunity of borrowing books. The library, which consists of books belonging to the society, to the medical faculty of the University, and to the two large hospitals, now contains 21,235 volumes and takes in 251 periodicals. By means of an arrangement with a metropolitan lending library the privileges of members are further extended.

The South-Western Poor-law Conference.

The annual Poor-law Conference for the South-Western district was held at Salisbury on Oct. 12th, under the presidency of Sir T. D. Acland. Mr. F. W. Oripps (vice-chairman of the Cirencester union) read a paper on the Proposed Abolition of the Workhouse. He urged that that institution need not be abolished, but that guardians should be relieved of the care of two classes, the epileptics and feeble-minded, who should be cared for under a similar system to the lunatic asylums, and that vagrants should be treated upon the lines of the recommendation of the vagrancy committee. Dr. Arthur H. Downes (senior medical inspector of the Local Government Board for Poor-law purposes), who was the invited speaker present, expressed his hearty agreement with the general principles of Mr. Cripps's paper. After a considerable discussion a resolution was unanimously passed expressing agreement with the scheme advocated by Mr. Cripps.

A Russian Tribute to Jenner.

On Oct. 4th, at Berkeley, Gloucestershire, Dr. Simon Shiwopiszew, director of the Russian Lymph Institution at Orel, and lecturer on vaccination, in company with M. Edward Hoffmann of Finland, a representative of a Finnish newspaper, placed a wreath on the tomb of the "immortal Jenner," whose remains lie interred in the chancel of Berkeley parish church. Dr. W. R. Awdry of Berkeley showed the visitors (who had journeyed expressly from Russia to place the wreath) his collection of Jenner relics. The vicar of Berkeley also received them at the Chantry, where Jenner lived.

The Midwives Act in Cornwall.

At a meeting of the Cornwall midwives committee held at Truro last week it was decided severely to reprimand a certificated midwife. It was reported that an inquest was held in April last at Crowlas upon the bodies of two children, aged two and seven days respectively. The certified midwife who attended the mother in her confinement told the parent that there was no need to call a medical man for the children, although they appear to have been in a weak condition, and the midwife eventually gave a certificate stating that the infants were of premature birth. The children were buried as a consequence of this certificate. The jury returned a verdict to the effect that death was caused by congenital inanition and want of attention, and they desired the coroner to report the case to the midwives committee.

Bristol General Hospital.

The late Mr. R. Bligh has bequeathed £656 to the funds of the Bristol General Hospital.

Dawlish (Devon) Cottage Hospital.

A house-to-house collection was recently made at Dawlish in aid of the funds of the local cottage hospital, and as a result over £100 were raised for the charity.

Cornish Centenarians.

Mr. R. Peter, J.P., solicitor, of Launceston, celebrated his 100th birthday on Oct. 9th. He received congratulations from the King and the Prince of Wales.—The death occurred on Oct. 7th of Mr. James Carne, of St. Columb Minor, the oldest parish clerk in England, who celebrated his 103rd birthday in May last.

Oct. 19th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Neglect of Children.

THREE cases of child neglect came before the city magistrates the other day. A single woman who had given her eight weeks old child opium, presumably to keep it quiet, was sent to gaol for six months. Every facility seems to be afforded for obtaining opium, and it is a favourite remedy for fractiousness or the pitiful wailing of a baby in pain. The other cases were of men, one of whom was sentenced to six months' imprisonment on a charge of neglect. He was, it may be hoped, an unusually marked example of the human brute, for in addition to neglect the man had "brutally kicked his little boy because he had attempted to stop defendant striking his wife." Such men seem uninfluenced by ordinary punishment, and after trying and failing with the good counsel and the ministrations of the chaplain it may be found that one touch of primitive nature in the shape of the "cat" may influence their moral nature. The other case was considered deserving only of three months' imprisonment. These are only samples of what takes place every day, and show that all the efforts of our educational system, all our so-called civilisation does not encessarily suffice to get rid of the savagery of the free-born Englishman.

Cheshire School Children.

An interesting report on the medical inspection of school children at Stockport, from Jan. 7th to the end of July, has been issued by Dr. H. E. Corbin, medical officer, and Dr. A. G. Caldwell, medical inspector. 3920 children were A. G. Caldwell, medical inspector. 3920 children were inspected, of whom 1934 were males and 1986 females. Of the 3920 examined, 2340, or 59 per cent., were notified for various defects. Dirty heads, 596; mouth breathing, 812; eye diseases and defective vision, 1165; ear diseases and deafness, 187; heart diseases and anæmia, 301. A considerable number were excluded from school—125 in all—for various ailments; 18 for discharging ears, 65 for ringworm and skin diseases, 10 for chest troubles, 5 for glands in neck (presumably discharging), 14 for eye diseases, 12 for infectious diseases, and 1 for tubercle. The excluded children would not be readmitted until medically certified as fit, by their own medical attendant or by the medical inspector at the town hall. One of the most interesting and important facts brought out was the bad condition of the teeth in the majority of the children. Nearly 80 per cent. had bad teeth, the girls being worse than the boys. It is obvious that bad teeth give rise in many cases to gastric disorder, to eating insufficent or improper food, and to anæmia, due in part to the septic condition of the mouth from caries of the teeth. In most cases there had evidently been no attempt, by even the simplest means, to keep the teeth clean. No doubt improper feeding, especially, as the report says, the eating of too much fresh white bread, had something to do with the bad condition of the teeth. Possibly the attention supposed now to be given in the elementary schools as to simple hygienic measures may lead to instruction being given in the care of the teeth, and the use of the tooth-brush after meals and at With regard to the use of the tooth-brush, even boards of guardians sometimes need instruction. Some years ago a proposal to provide the workhouse children of a Welsh

union with tooth-brushes was, as reported, received by the guardians with loud and derisive laughter and remarks which led to the conclusion that these gentlemen themselves had very little personal knowledge of the uses of the tooth-brush and did not see why workhouse children should be provided at the expense of the rates with what they themselves did not require. Dr. Meredith Young, the chief medical officer under the Cheshire county council, has also just presented an important report on the present system of medical inspection of school children in the county. He shows how important this systematic work is, as there are about 350 schools and 70,000 scholars concerned. In giving an outline of the scheme of medical inspection he says that when developed it will provide for the medical examination of every child attending a public elementary school at least three times during its school life. He points out that among other objects the question as to whether a child is capable of benefiting to the full by the education provided, can be answered, and in the event of physical or mental defect being discovered endeavours can be made to apply preventive or remedial measures. If such means as these are carried out efficiently throughout the kingdom, there should, in the course of some years, be a distinct improvement in the mental and physical condition of the coming generations. More important than anything else almost is the possibility of weeding out the unfortunate class of feeble mental degenerates, and of protecting them during their lives from being injured and being an injury to the community.

Medical Officer's Salary at Hyde.

For months past the question of the borough medical officer's fees has been discussed at the Hyde town council and in committee, with at times a good deal of heat. Two or three months ago it was stated in the council that though his nominal salary was only £80 a year the total amount received from all sources in his public capacity last year was over £400, a large portion of it coming from fees for outside cases admitted to the borough hospital. It has now been decided by the council, on the recommendation of the general purposes committee, that he should be paid a fixed salary of £65 per annum as medical superintendent of the borough hospital, which amount was to cover all cases with the exception of those of small-pox. It was stated by Councillor (Dr.) J. A. Watts, as reported, that under the new arrangement the medical officer would receive a total of £285 per annum "for services which certainly occupied a very inconsiderable portion of his time." Councillor Watts replied to a number of critics, inside and outside the council, who had, he said, complained of his attitude on the question. He denied that there was any personal element in the matter. Without expressing any opinion on the merits or otherwise of the question, or of the ethics of docking a fellow practitioner's stipend, it may be allowable to ask if the councillor considered a large portion of the fees previously received as unearned increment? Such a reason for cutting down the salary of a borough medical officer must be of very rare occurrence. It is said that the discussion on the question was "somewhat heated," so that the medical officer must have had some supporters.

Hope Hospital Dispute.

The deadlock at the Hope Hospital still continues. At the meeting of the Salford guardians held on Oct. 15th it was said that nothing had been done in reference to the vacancies on the medical staff at the hospital, where, "owing to the action of the British Medical Association, who object to the conditions of service there and to the scale of remuneration, it has been found impossible to obtain applicants." Perhaps some result may follow the meeting arranged by the Local Government Board between Mr. A. Fuller, the medical officer of the Board in charge of Poorlaw matters, with Mr. A. B. Lowry, Local Government Board inspector, and a committee of four of the Salford guardians, to confer on the difficulty. In addition to the medical dilemma it is said that the hospital is under-staffed as to nurses, while as a necessary sequence the patients do not receive the attention they require.

Oct. 19th.

BRIDGWATER (SOMERSET) INFIRMARY.—The late Captain J. Chappell has bequeathed £500 to the funds of this institution.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

University of Glasgow: Installation of Professor 1. H. Bryce. THIS week Professor T. H. Bryce was formally installed in the chair of Anatomy by the Principal, Sir Donald MacAlister, K.C.B. Professor Bryce took for the subject of his inaugural lecture "The Teaching of Anatomy in Glasgow." In a short and interesting résumé of the history of the Glasgow chair of anatomy he first noted the remarkable length of tenure of the occupants of the chair. From 1790 to 1909 it had been held by only three professors—James Jeffrey, appointed in 1790; Allen Thomson in 1848; and Emeritus Professor Cleland in 1877. The chair was founded in 1718, and for a hundred years included the professorship of botany. Notwithstanding its specialisation the chair of botany. Notwithstanding its specialisation the chair had always remained one of comparative anatomy, and the ideal of 1720—that university teaching of anatomy involved the teaching of everything that elucidated the structure of the human body—remained. After alluding to the professors who had previously held the chair, Professor Bryce said it would not be appropriate on this occasion to refer in detail to the many publications with which Professor Cleland had enriched anatomical literature. Suffice it that he had occupied the foremost place among the anatomists of his day in respect of the breadth of his scientific horizon. In his gift to the University and to his successors in the chair of his admirable and interesting collection Professor Cleland has left a rich inheritance for which they could not be too grateful. As a teaching museum it was invaluable to the department, and it contained numerous specimens of much scientific value. It contained, amongst other things, a large collection of skulls of the different races of mankind. Professor Bryce then shortly indicated the lines on which he hoped to see the study of anatomy develop. He claimed that the teaching of histology that is, of normal as opposed to pathological histo-logy—would more properly be taught in the anatomical department. He next referred to the paramount importance for the comprehension of anatomical fact, of a study of development, and pointed out that the enormous advances in recent years in the knowledge of the details of human development placed the teacher in an increasingly advantageous position for the demonstration of embryological facts. He concluded by outlining the courses in the different branches of the subject which he proposed to continue or to institute, and explained that his aim would be to combine in his instruction the scientific with the practical ideals of anatomical teaching.

Viotoria Infirmary, Glasgow.

The fourth biennial dinner of the past and present resident assistants of this institution was held in Glasgow on Oct. 12th. Dr. R. Scott Frew, who presided, in proposing the toast of "The Victoria Infirmary," referred to the development of that institution during the 20 years of its existence, and continued: "We are watching with interest the development of a scheme of extended clinical teaching in Glasgow, whereby the vast clinical material of the Royal Infirmary, after lying almost untouched for a matter of 40 years, will at last become available to the students of the Glasgow Medical School. We hope and trust it is only a matter of time till the Victoria Infirmary will be brought into line with the Royal Infirmary and with the Western Infirmary, and we will then feel that our hospital is fulfilling its highest function as a teaching medical school. That time may be delayed, we may not all see it; but whether or not there is one thing we must never forget, and that is that the Victoria Infirmary taught us, and so is entitled to our life-long gratitude." Dr. A. Freeland Fergus, one of the medical directors to the infirmary, suitably replied. The toast of the "Resident Assistants, Past and Present" was proposed by Dr. D. O. MacGregor in a very happy and humorous speech. Dr. Ernest Watt of Hamilton and Dr. Thomas Archibald replied. The secretary, Mr. Grant Andrew, read letters and telegrams from former residents expressing regret at their absence and wishing their fellows an enjoyable evening. These good wishes were reciprocated to all former residents, whether at home or beyond the seas, and finally, on the proposal of Dr. A. N. McLellan, the health of the chairman was drunk with

St. Andrew's Ambulance Association.

The Earl of Dalkeith presided last week at the twentysixth annual meeting of the St. Andrew's Ambulance Association held in Glasgow. From the annual report submitted it appeared that during the past year 7551 calls had been made on the wagons of the association, and the total number of patients conveyed since the formation of the association was now 100,123. In Glasgow alone the number of calls had been 4829 during the year. This represented an average of 13.23 turns out daily, or, leaving Sundays out of the calculation, 15.42. Out of the total 4829 turns out 2489 were to accidents and 2316 to cases of illness. In 174 cases the wagons were not required on arrival. Of the 2489 calls to accidents 778 were from police offices, houses, and stairs; 978 were street accidents; 236 from public works; 178 from docks and wharves; and 94 from railways and stations. Of these cases 2163 were taken to the Royal Infirmary, 953 to the Western Infirmary, 376 to the Victoria Infirmary, and 187 to the Maternity Hospital, the remainder being taken to their homes or other institutions. The wagons covered 21,269 miles during the year. During the past year also the number of certificates of proficiency issued was 5541, making a grand total since the formation of the association of 87,922. The number of medallions issued was 1882, a grand total of 26.109.

Northern Infirmary, Inverness: New Wards for Treatment of Phthisis.

A large gathering was present at the Northern Infirmary, Inverness, on Oct. 13th, on the occasion of the formal opening of new wards for the treatment of phthisical patients. Provost Gossip, chairman of directors, presided, and said that through the philanthropy of a gentleman now deceased-he meant the late Robert Lawrence—the directors had been enabled to complete the new wards. Last year they had made a change in the manner of collecting money for the upkeep of the infirmary. The change agreed upon the upkeep of the infirmary. The change agreed upon was that they should have a house-to-house collection in Inverness instead of, as formerly, giving the public an opportunity of contributing in the different churches on a particular day. The change so far as it had gone had not been entirely disappointing. Dr. A. W. Mackay said that he thought he was safe in saying that they were amongst the first in the United Kingdom of general hospitals to provide separate phthisis wards for the treatment of that disease alone. Mrs. Gossip in a few words formally opened the door of the wards.

University of Aberdeen: Opening of the Winter Session.

The winter session at Aberdeen University commenced on Oct. 14th. The surgical class did not meet until the 15th, when the new professor, Dr. J. Marnoch, was formally introduced to the professoriate and the students. Professor W. Stephenson, as the senior professor, presided, and there was a large attendance of the University staff and of the students. Professor Stephenson said that unfortunately he had again to take the place of a principal. With regard to that, not the Government, perhaps, but undoubtedly the Secretary for Scotland, was taxing their patience very much in not appointing someone to the principal-As to their new professor he had been appointed by His Majesty the King, and under special conditions which had not been previously imposed. That was to say, greater power had been transferred to the University Court to see that the instruction in surgery was not simply in systematic surgery, but that it is combined with clinical instruction. Professor Marnoch, who had a great reception, said that no higher honour could be bestowed on a graduate than to be elected to a chair in his own university. He succeeded a great master of the art of surgery. a master not merely of local but of world-wide reputation. The example set by him was a great stimulus, and it would be his endeavour to aim at the same high ideals and to carry on the work of the surgery department with efficiency. The amount of clinical material had largely increased of recent years, but something had to be done to enable the student to avail himself of those opportunities to a fuller extent. At present the time at his disposal for the purpose was too broken up, but some arrangement whereby more continuous time would be available for clinical study would be to the advantage of the school. Professor Marnoch then proceeded to deliver an address on Cancer of the Breast. Oct. 20th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal College of Surgeons in Ireland: Presidential Address.

THE winter session of the College was opened on Friday, Oct. 15th, when the President, Mr. J. Lentaigne, presented the prizes of the previous session. Before distributing the prizes he delivered, however, an address in which he referred in weighty terms to the grave difficulties in which the school of the College was now involved, pointing out that these difficulties were not the results of fair competition—that is, of greater industry and more successful work on the part of rival institutions—but arose from a political situation which had induced the Government to complete an endowment by State of every other medical school in Ireland except the School of the College, "which had been carefully excluded from Government favours and left absolutely out in the cold." The scandalous injustice and unfairness of this, he said, were so patent that when the Bill for the formation and endowment of the new universities which were to take over and absorb the four existing medical schools in Ireland, outside Trinity College, Dublin, was being introduced, the then President of the College approached the Government with the fullest confidence that the grievances had only to be stated to be remedied, but all the trouble, loss of time, and expense had resulted in nothing for the College save a few highflown and complimentary phrases for the good work done.

The National University and the Students of the Catholio University Medical School.

A meeting of the past and present students of the Catholic University Medical School was held last week in the Gresham Hotel. The chair was occupied by Surgeon-Colonel F. G. Adye-Curran, whose varied experiences as an army medical officer (now retired), an assistant surgeon at St. Vincent's Hospital, and a former governor of the Apothecaries' Hall of Ireland (the oldest, by the way, of all our Irish medical corporations), give him all the qualifications which opportunity can well furnish towards the making of a reliable adviser to the medical student who has through no fault of his own become involved in a difficulty in the progress of his curriculum. The special object of the meeting in question was a discussion of the position of the medical students of the Catholic University Medical School with regard to the establishment of the new National University, in which it has necessarily been merged. After a certain amount of preliminary debate the following resolution was proposed and passed unanimously:—

We, the past and present students of the Catholic University Medical School, with non-University qualifications, respectfully approach the governing body of the National University and request that they will be good enough to take into consideration the position occupied by us at present, and kindly say what concessions they would feel disposed to grant in the event of our taking a medical or dental degree.

It is certain that the authorities of the new University will lend a kindly ear to this request, as some of them, at any rate, are sure to be in personal sympathy with the petitioners, but whether any practical step will follow I should be loth to prophesy. Those interested in the question are cordially invited to communicate with the secretary, "Conjoint Cecilians," Apothecaries' Hall, Dublin.

The Magdalen Asylum.

There is no institution in our Irish metropolis more deserving of public sympathy and support than the Magdalen Asylum, which is to have its special annual "collection made up" on Sunday next. That institution has now for nearly a quarter of a century been engaged in rescuing the fallen victims of sensuality or deceit, often aided, of course, by the incapacitating persuasions of want and drink. A special peculiarity of the victims of the "social evil" in Dublin is that in a country in which sexual morality in the female ranks so high, their fall from chastity is more calamitous and irreparable. The sisters in charge of the Magdalen Asylum exercise every endeavour to restore the self-respect and self-guiding powers to those fallen ones, and the result offers an interesting field of study for the medical observer. In few institutions can the influence of mind on body be more instructively studied. The morbid irritability, the alcoholic cravings, and the gloomy hopelessness of outlook, which had rendered these women absolutely unfit for the occupation of any

responsible position, gradually disappear in presence of sane advice, kindly tendered, and firm control. The arrest of tuberculous invasion is another conspicuous result of these ministrations, so that there is sound medical reason for hoping that the rather heavy debt of the asylum will be wiped out by Sunday's collection.

Coöperation of Government and People in the Hygiene of National Schools.

Evidence of the general diffusion of hygienic education among the people of Ireland and of the combination of creeds and classes in the determination to utilise the same in the interests of future generations has just been offered by the published correspondence between the representatives of the Women's National Health Association and the representatives of the Irish hierarchy. A resolution was passed by the executive of the former body expressing their gratification at the fact that the school managers in connexion with the Roman Catholics, the Church of Ireland, the Presbyterian Church in Ireland, and the Methodist Church had expressed their readiness to make themselves responsible for one-half of the cost for heating and cleaning of national schools, in accordance with a scheme to be worked out in consultation with the Chief Secretary and in response to his suggestion made to the deputation of the Women's National Health Association of Ireland in May last. The executive, while pointing out that no promise of a Treasury grant could be obtained for the commissioners until the opening of the financial year next spring, pledged themselves, "through their branches, to cooperate with any local efforts that may be made to raise the required sum." They expressed the hope, accordingly, that the school managers throughout the country would be. that the school managers throughout the country would show their earnestness "by themselves inaugurating the proposed scheme this winter by spending their proportion of the proposed funds during the winter months, and keep an account of the same, which can be hereafter presented to the Irish Government as an additional argument for obtaining from the Treasury the hoped-for grant of the half of the total amount." The immediate result was the receipt by Lady Aberdeen of a letter from the two (episcopal) secretaries of the general meeting of the Catholic archbishops and bishops of Ireland, thanking her for the resolution which had been passed, and stating that the bishops had already requested the Catholic managers of schools to take steps to find the necessary funds for that purpose. Many regard this incident as one of the most hopeful signs of the present times.

Trinity College, Dublin, and the Royal University of Ireland. It is announced that the board of Trinity College, Dublin, is willing to consider applications from students of the Royal University of Ireland who may wish to receive allowance for their studies in that University, with the object of taking their degrees in the University of Dublin. Many applications of this character, it is stated, are now before the board.

Poor-law Reform.

Since the publication of the Report of the Royal Commission on the Poor-law, as well as the Report of the Irish Vice-Regal Commission on the same subject, a great deal of discussion has been taking place in Ireland. A conference of Irish women guardians discussed in Dublin last week (1) the public assistance committees v. boards of guardians; (2) the position of women on the public assistance committees; (3) the children; and (4) unmarried mothers. The conference was unanimous in proposing direct election to cooption. Strong exception was taken to the fact that if the public assistance authority was established the services of the majority of the 103 women now serving as guardians in Ireland would be dispensed with, as women are not eligible for seats on the county councils, and a resolution was passed urging that, in view of important changes likely to occur in Poor-law reform in Ireland, it is absolutely necessary that women should be eligible for seats on the borough and county councils. There was a feeling expressed that a more comprehensive scheme than any yet suggested should be devised before legislation took place in reference to children, and that to board out all children who came on the rates was impracticable. reference to unmarried mothers, while all agreed that the workhouse was a most undesirable place for such cases, there were differences of opinion how otherwise they were to be dealt with. Opinion was unanimous that the recommendations of the Royal Commission in regard to the Feeble-Minded in this connexion should be carried into effect.

The Medical Session at Belfast.

Work began at the Royal Victoria Hospital, Belfast, for the present winter session (1909-10) on Oct. 14th, when the introductory address was given by Dr. Henry Hanna, assistant ophthalmic surgeon, to the students. In a racy lecture, Dr. Hanna dwelt upon the duty of students taking a practical interest in hospital work. He suggested that a ward should be opened for children and hoped that in the new University of Belfast there would be clinical examinations in ophthalmology. Lectures began at Queen's College on the same day. The lectures in the Arts Faculty of the University will not start until nexth menth. Oct. 19th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Naval Boards of Health.

THE Journal Official has recently published a circular issued by the Under-Secretary of State for the Navy relative to the establishment of boards of health in the naval ports. The chief board of health will be located in Paris at the Ministry of Marine and will comprise four civilian members, selected by the Under-Secretary of State, and four naval members, including the inspector-general of the Service de Santé and the pharmaceutical chemist in charge of the analytical laboratory of the central store department of the navy. The chief board of health is acting as a commission of naval hygiene and epidemiology or as a superintending water board. The local boards of health in each port are composed of eight members, including the medical director-general of the health department of the garrison and the medical man or medical men in charge of the bacteriological laboratory of the port. The Journal Officiel has also published directions relative to the examination and surveillance of drinking water supplies.

Sanitary Regulations for Canal Boats.

The Prefect of Police has recently issued a circular regulating traffic on the waterways in respect to sanitation. All boats entering the Department of the Seine and appearing to have come from an infected district will be visited by sanitary officials at places of which the masters will be informed—namely, at the last lock through which they pass before entering the department. The masters will have to present to the sanitary official their permit for the journey, and also the permit handed to them at the first sanitary visit after their arrival in France. There will also be delivered to them a permit to proceed, for which they must obtain an endorsement at certain places mentioned and which they must show to the officials when required. Moreover, no master may bring his boat to a wharf or discharge cargo in the Department of the Seine without supplying proof that he has undergone the requisite visits. In the event of one of the crew presenting doubtful symptoms of illness, the boats are to be provisionally isolated and all communication between them and the shore is to be prohibited until the arrival of the official medical officer.

Relations of Alcoholism to Crime.

At a meeting of the Academy of Medicine held on Oct. 5th M. Vallon, medical expert attached to the Law Courts, reported that he has had to examine 151 individuals charged with homicide or attempted homicide. In this number there were 7 malingerers and 9 persons who were wrongly supposed to be the subject of mental defects. Of the remaining 135 culprits, 120 were males and only 15 were females. With regard to their condition of health, the following conditions were noted: 1 case of pregnancy with mental derangement, 1 case of morphinomania, 2 cases of neurasthenia, 10 cases of delusions of persecution, 7 cases of various states of mental disorder, 11 cases of hysteria or epilepsy, 18 cases of various diseases either supposed or known to have an effect on the brain, 36 cases of mental defect, and 49 cases of alcoholism. M. Vallon said that the cases of alcoholism were more than one-third of the total number of persons charged with homicide. He added that the influence of alcohol as a contributory cause of homicide would be seen to be even greater

if instead of a mere enumeration of accused individuals personally addicted to alcohol an examination were made of the antecedents of culprits classed under other headings. This would show that many epileptics and mental defectives were the children of alcoholic parents. M. Vallon went on to say that acts of extreme violence might be committed not only by habitual inebriates but also by persons in a state of occasional intoxication due to alcohol, in illustration of which he quoted two cases.

The French Congress of Surgery.

The Twenty-second French Congress of Surgery was held in Paris from Oct. 4th to 9th. The introductory meeting took place in the large amphitheatre of the Faculty of Medicine, under the presidency of M. Richelot, the subject of whose inaugural discourse was entitled "Simple Surgery." commenced with a definition of the term, saying that simple surgery was not that which presented itself first to the mind, but that to which one was brought by experience. He considered that a display of instruments ought to be avoided and that the most successful surgeon was the one who made the best use of his fingers and of his good sense. Avoiding useless expenditure on elaborate appliances for securing asepsis, M. Richelot boiled his compresses in an ordinary domestic laundry boiler and immersed his instruments in hot water containing bicarbonate of sodium. respect to the technique of operations, he thought that all the new forms of apparatus for the precisely regulated administration of chloroform presented no real advantage over the old method of administration on a compress in the hands of an assistant who understood how chloroform acted and knew what points ought to be attended to. In fact, he considered that surgical technique was very often overloaded with useless complications having their origin in an excessive desire on the part of surgeons for methods peculiar to themselves. M. Richelot then made a touching reference to the members of the association who had passed away in the course of the year. The principal question on the official programme was the surgery of the arteries. A discussion was introduced by M. Monod and M. Vauverts, and communications were made on this subject by M. Villar, M. Tuffier, M. Psaltoff, M. Doyen, M. Bégouin, M. Brunswic-le-Bihan, M. Amray, M. Reynès, M. Savariaud, M. Princeteau, M. Vidal, M. Tailhefer, M. de Fourmestrame, M. Delagenière, M. Jordan, M. Giordano, and M. Lardennois. Oct. 18th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Proposed General Strike of Resident Medical Officers of Hospitals.

A RATHER unusual threat has been pronounced by the union of hospital medical officers in Vienna as a last resort for the removal of long-standing grievances. The union has notified the managing boards of all the State hospitals in the city that unless certain reforms are actually begun before Nov. 1st the hospital staffs will tender their resignation on this date, with the prospect that four weeks later the hospital wards would be left with only the professors and their two chief assistants to attend many hundreds of patients. This uncompromising attitude has been adopted in consequence of the evident uselessness of petitions of a more conventional nature. As a rule, in the hospitals there are 30 beds assigned to each "Secundararzt," or house physician, who is responsible for the proper care of the patients. He has not only to write down personally the history and the course of the disease, but also to make all examinations, to keep observation on the food, and to do all the administrative writing required in the wards to which he is attached. This, of course, necessitates a good deal of work of a non-medical nature, which is very much resented by the young medical man, as it takes up so much of his time and interferes with attention to the more scientific side of the daily duties. remuneration also is not satisfactory, being only £55 for the "Secundararzt" and from £75 to £90 for the assistant, with lodging, but only with partial board. A few years ago the conditions of medical service in hospitals were worse still, but the salaries had to be raised to their present level on

account of the dearth of applicants for such posts. Several recent occurrences amongst the staff of one of our largest hospitals showed the necessity of insurance against accident and claims for malpractice, but the payment of the insurance fees was refused by the hospital boards. Finally, on the occasion of some disputes between medical and administrative officers the authorities decided in favour of the latter, which brought about such a feeling of irritation amongst the medical men that a sort of ultimatum was The medical officers ask for (1) a clear decision as to the rights and duties of the medical and the administrative staffs; (2) permission for a medical officer to change his ward in the same hospital after three months; (3) the appointment of clinical clerks to do some of the writing; (4) full board for the whole medical staff; and (5) obligatory insurance by the board of the medical officers against claims arising out of their hospital work and against accidents whilst in employment therein. As all these demands involve a considerable expenditure of public money, the position of the boards is a rather difficult one, and they are trying to come to terms by negotiation. Full preparations have, however, been made for the strike, and hardly any medical men would be found ready to replace those who refuse to continue at work under the present conditions.

The Difficulties at the Ophthalmological Clinic.

Since the death of the celebrated Professor Schnabel the clinic which was under his control has been conducted temporarily by the last of his assistants, and the appointment of his successor has given much more trouble than was expected. The senate of the Medical Faculty in Vienna having recommended Professor Hess of Würzburg, Professor Dimmer of Graz, and another gentleman as three suitable persons from whom a final selection might be made great pressure was exerted upon the Ministry of Education to prevent the appointment of the professor from Germany (i.e., Professor Hess) on so-called patriotic grounds. Academic influence was strong enough to overcome these obstacles, and Professor Hess was asked to take over the duties. He came to Vienna, inspected the clinic, and declined the offered position. He has in Würzburg a palace of a clinic, with the very latest equipments required for modern research, whereas he found in Vienna an antiquated ward, without sufficient space for out-patients. Professor Dimmer in Graz then received an invitation, and he also required increased accommodation for the treatment of patients and for research work, but the lack of funds prevented his modest requests from being complied with. In a few years there will be a new clinic which will be a model institution, but this long period of waiting and suspense would be intolerable to an ophthalmologist of high standing, so Professor Dimmer also refused. As the present situation cannot continue, either the Ministry will have to find the necessary money or it will have to accept a man of secondary scientific importance, an alternative which would be more detrimental to the University than the bureaucracy seems to imagine.

Diagnosis of Cerebral Tumours by Means of X Rays.

At a recent meeting of the Neurological Society Dr. Schüller read a paper on the Diagnostic Value of X Rays in Tumours of the Brain. He said that if a tumour of the brain contained salts of lime its shadow might be visible on the screen or plate, but this was comparatively infrequent. More assistance in this respect might be obtained from certain secondary changes produced by the neoplasm—namely, (1) the destruction of the osseous wall of the skull, either local or general; (2) the dilatation of the venous channels of the diploe, which became so marked that they possessed a diagnostic value;
(3) the increased distinctness of the sutures; and (4) the very characteristic increase of the thickness of skull. This thickening was due either to concentric hyperostosis of the walls, or to long excrescences on the inside of the skull. Sometimes the shape of the skull was changed by the new growth. Dr. Schüller said that he had examined 240 cases and has succeeded in making a positive diagnosis in 150 of them; it was remarkable that amongst the 150 positive cases there were 54 with involvement of the hypophysis. He therefore considered that X ray examination of cases of intracranial mischief was indispensable.

Oct. 18th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

The Prevalence of Plague.

THE plague returns for the week ending Sept. 11th show 2096 deaths compared with 1952 in the week preceding. Bombay Presidency reported 617, Madras 140, Bengal 37, the United Provinces 429, the Punjab 47, Burma 49, the Central Provinces 434, Mysore State 176, Central India 114, and Rajputana 3. After a visitation lasting for more than a decade it has to be confessed that human effort has had little tangible effect on the plague epidemic. In the Punjab last year the death-rate from plague was only slightly higher than that from small-pox, and as this year the returns have been even more favourable there is good ground for hope that the disease is gradually dying out. The plague staff is still as zealous as ever, and the people are generally about as indifferent as they have always been. In a recent report dealing with Northern India, Sir Louis Dane, Lieutenant-Governor of the Punjab, is of opinion that the decrease in mortality can neither be attributed to inoculation, nor to the destruction of rats, nor to the absence of rainfall last autumn. In fact, human agency has had very little to do with it, and all that can be removed from the land. But although no very positive results can be attributed to preventive measures, those measures have been amply justified. It may not be possible to prove by statistics that preventive work has sensibly reduced mortality, but it is quite certain that many cases have occurred in which the efforts of the plague staff have limited the area infected and brought help and encouragement to the suffering people. Moreover, though among an ignorant and prejudiced peasantry it was impossible to carry out scientific preventive measures effectively, a start has been made in the sanitary education of the masses that may be of incalculable value as time goes on.

The Health of Bombay.

A warm fine break in the weather at this time of year, which drives the poorer classes out of their unwholesome dwellings at night to sleep in the open air, always leads to a diminution in prevalence of plague. Consequently the feature of the health returns in Bombay (city) this week is a lower rate of plague deaths, and the drop in the mortality from that cause amounts to no less than two-thirds of last week's total. Only 9 deaths were registered—a figure which is phenomenal for the time of year. Last year in the corresponding week plague accounted for 25 deaths, the mean for five years is 36, and the figure returned a week ago was 27. So decided an improvement makes the prospect of plague dying out altogether at least a hopeful one. Small-pox deaths last week were nil, but cholera is still about, the deaths last week, including several imported cases, being 22. The total mortality from all causes for the week was 591, as against 602 in the previous week, 581 in the corresponding week of 1908, and a quinquennial mean of 671.

Malarial Fevers in the Punjab.

During the last four months of 1908 460,000 deaths from fever were reported in the Punjab, and it is estimated that a quarter of the total population of the province suffered from malaria. Strenuous efforts were made to distribute quinine among the people, and where a regular system of weekly or bi-weekly dosage was possible the results were most satisfactory, almost complete immunity from fever being secured. The epidemic disorganised the whole province, and the Lieutenant-Governor in a recent note urges the cardinal importance of being well prepared to meet a similar calamity in future. Plans prepared with forethought and the organisation of an effective quinine-distributing agency may be the means of saving thousands of lives.

The Malarial Conference.

The following officers from the Central Provinces will attend the Malaria Conference at Simla next month: Mr. Fox-Strangeways, C.S.; Major W. H. Kenrick, I.M.S., Civil Surgeon, Raipur; and Roa Bahadur Madholkar.

An Indian Regiment for Daoca.

Lord Morley has sanctioned the location of half a battalion of an Indian regiment at Dacca and the strengthening of the

military police. The construction of cantonments begins forthwith.

The Indian Medical Service.

In a recent leading article the Pioneer thinks that the popularity of the Indian Medical Service is steadily on the wane, and that candidates are not forthcoming in anything like the numbers that were formerly recorded. At the last examination for commissions there were 48 competitors for 21 vacancies, a proportion of something over 2 to 1; whereas not so many years ago the figures were 7 or 8 to 1. At the same time there is far more desire shown to enter the Royal Army Medical Corps, for at the same examination 54 candidates competed for 20 commissions, the old proportion being at the rate of about 3 competitors for every 2 vacancies. The proposal of the Secretary of State to introduce independent practitioners into India and to allot to them some of the professional appointments and civil surgeoncies has been adversely criticised in the service papers at home, and this suggested introduction has doubtless had its the students in the various colleges. effect upon They see that a career in India no longer offers the chance of lucrative practice apart from professional distinction, and that there will be few compensations in the future for continuous service in a tropical climate. the other hand, the Royal Army Medical Corps is in high favour. At a recent prize distribution of the Royal Army Medical College Sir Frederick Treves remarked that the probationers were entering the service at a very auspicious moment. Addressing them he said: "You know, perhaps, that the Army Medical Department has passed through a period of low water; you enter it on the crest of the flood tide, and on that tide you will be carried to what, I hope, will be fortune. I do not hesitate to say that there is no branch of the service better paid than the Army Medical Service." Sir Frederick Treves linked the two services together when dwelling upon the opportunities offered for advancing and elaborating sanitary science, and for investigations into tropical diseases. The Government of India have yet to make a final pronouncement in respect of independent practitioners, and they should note the change that has taken place in the matter of competition for the Indian Medical Service in this country.

Service Notes.

Major F. L. Blenkinsop, I.M.S., has been appointed staff surgeon, Secunderabad. Captain W. H. Cazaly, I.M.S., on reverting to military duty, has been appointed to the permanent medical charge of the 125th Napier's Rifles. Captain H. C. Buckley, I.M.S., has been appointed to the substantive medical charge of the 17th Infantry. Captain E. A. Roberts, I.M.S., has been appointed to the 67th Punjabis.

Sept. 15th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Race Suicide: Infanticide in Sydney.

THE city coroner for Sydney has lately expressed himself strongly on the prevalence of infanticide in Sydney, and has made a number of recommendations to mitigate the evil. He advocates an amendment of the law to enable officials to trace all births and the cause of death. A tax on bachelors is proposed and a bonus to parents of large families. The limitation of families is almost confined to parents in easy circumstances. He continues: "As a rule the avoidance of the cares of maternity, the excessive desire for social gaiety, and the mode of life generally (including the diet of parents) are, I believe, the chief causes of small families. On the other hand, the poorer classes, living on plainer diet and leading a more natural life in all respects, continue to have large families. It would seem that the humbler the walk in life the more prolific are the parents. If the present practices continue the whole political control of the State must fall into the hands of the working classes. In my opinion, no State can be prosperous in the widest acceptance of the term if ruled by one class."

Talbot Milk Institute.

The first annual meeting of the Talbot Milk Institute of the Women's Medical Association, Dr. W. P. Norris, Dr. was held in the Melbourne town hall on August 18th, Lady Burnett Ham, and Dr. J. W. Barrett, to assist the Director of

Gibson Carmichael presiding. Dr. A. Jeffreys Wood described the plan of the work, which was modelled on that of the Gouttes de Lait in France. The milk was produced by tuberculin-tested cows, and was at once cooled to 40° F. and despatched to the Willsmere milk depôt for pasteurisation. Owing to the difficulty of keeping any milk sound in the hottest weather the institute had supplied small ice-chests at a cost of 7d. per week to those houses in which the milk was Two nurses were employed in house visitation, being used. and sick children were attended twice a day. The price paid by the institute for pasteurised milk, bottled and sealed with paraffin-wax and delivered, was 4d. per pint, while it was sold at 2d. per pint. About 300 infants had been supplied during the summer, and of these only eight had died. The Lord Mayor moved the adoption of the balance-sheet and said that the city council would fully realise its responsibility in affording financial assistance.

Federal Quarantine.

Some dissatisfaction has been expressed with the inspection of oversea mail steamers under the new Quarantine Act. The matter was mentioned in the Federal Senate in connexion with an alleged delay at Freemantle. Dr. Wollaston (Comptroller of Federal Customs) says that as there is only to be one inspection it is necessary to make it absolutely thorough. The fear that mail liners arriving at night would be compelled to wait till next morning for clearance was unfounded. Arrangements could be made to clear them at once.

Opium Smoking.

The Comptroller of Federal Customs recently suggested an increased tax on opium and the devotion of the proceeds to deporting confirmed Chinese smokers back to their native land. The Chinese Empire Reform Association has addressed a temperate letter to the Minister for Customs pointing out that such a procedure would be futile and that an increase of tax means merely an encouragement to smugglers and the extortion of an increased price from the miserable consumer whose plight is only intensified.

Alfred Hospital, Melbourne.

The annual meeting of subscribers to this hospital was held in Melbourne on July 30th. The report showed that 2421 inpatients and 6261 out-patients were treated during the year, besides 949 casualties. These figures are much larger than in any previous year. The death-rate was 8.84 per cent., which was much lower than that for many years. Financially, the position was unsatisfactory. The loss of revenue from "paying" in-patients (now abolished) was £345. A fourth resident medical officer had been necessary to meet the increased work. The chairman said a rebuilding scheme was under consideration and would necessitate an expenditure of £20,000.

Vital Statistics.

The Victorian Government statist in the last year-book estimates the population of Victoria at 1,273,353, made up of 640,180 males and 633,173 females. The increase for the year was 15,173. The feature of the figures is the great increase relatively of females, it being estimated that there are 99 females to every 100 males—a much greater proportion than in any other State. Melbourne is increasing her population at the expense of country districts. The total number of Chinese is only 6815, and of coloured persons other than Chinese, 1273.

New Sanatorium.

On July 1st Sir P. Sydney Jones opened the R. T. Hall Sanatorium for Consumptives at Hazelbrook, N.S.W. The present building accommodates only 16 patients, but provision will eventually be made for 60 beds. The sanatorium has been constructed under the will of the late Mr. R. T. Hall, himself a sufferer from the disease, who obtained such benefit from open-air treatment that he desired to afford others the opportunity to experience similar treatment.

Medical Inspection of School Children.

The Victorian Department of Education has provided under a new Education Act for the introduction of medical inspection of school children. Three medical inspectors are to be appointed at salaries of £550, £450, and £400. An advisory committee has been nominated, consisting of the President of the British Medical Association, the President of the Women's Medical Association, Dr. W. P. Norris, Dr. Burnett Ham, and Dr. J. W. Barrett, to assist the Director of

Education in formulating a scheme for selecting applicants and drawing up a schedule of duties. It is probable that one at least of the appointments will be given to a medical woman.

Medical Temperance Association.

The Victorian branch of the British Medical Temperance Association, though a very small body numerically, has become very active in propaganda work. A series of public lectures has been arranged on alcohol. The lecturers include Professor W. A. Osborne, professor of physiology in the University of Melbourne; Mr. W. Moore and Mr. T. R. Stirling, indoor surgeons to the Melbourne Hospital; and Dr. J. F. Wilkinson, demonstrator of physiological chemistry in the University of Melbourne.

Momorial to Dr. J. Jamieson.

Dr. J. Jamieson, who recently resigned the lectureship in medicine in the University of Melbourne, has been made the recipient of a presentation at the instance of a number of past and present students. Sir John Madden, chief justice of Victoria and Chancellor of the University, handed to Dr. Jamieson a cheque for £135, the gift taking this form at the request of the recipient. Dr. Jamieson suitably and feelingly acknowledged the gift and said he proposed that the money should be handed to the University to be devoted to the foundation of an annual prize in clinical medicine to be known as the Jamieson prize.

Sept. 14th.

Gbituary.

SIR ARTHUR MITCHELL, K.C.B., M.D., LL.D. ABERD.

Sir Arthur Mitchell, who died at his residence in Drummond-place, Edinburgh, on Oct. 12th, was in many respects a man of unusual attainments, and had for more than 50 years occupied a prominent position among the medical profession of the Scottish capital. He was born in January, 1826, his father being Mr. George Mitchell, C.E. His school education was received in Elgin and he afterwards attended the classes in arts and medicine in the University of Aberdeen, where he graduated as M.A. in 1845 and M.D. in 1848. At the outset of his career he gained additional experience by visits to the medical schools of Paris, Berlin, and Vienna, after which he engaged for a time in private practice. Lunacy was the branch of medicine to which he specially devoted himself, after which it might be said that antiquarian research was his favourite pursuit. In 1857 he received the appointment of Deputy Commissioner in Lunacy for Scotland, and during his tenure of this office he became Morison lecturer on mental diseases to the Royal College of Physicians of Edinburgh. He also in 1864 published a treatise on the Insane in Private Dwellings. His predecessor as Morison lecturer was Dr. William Seller, who died in April, 1869. Sir Arthur Mitchell was appointed to the vacancy in the following month, as mentioned in our columns at the time. The subjects of his final discourses, delivered in March, 1872, were the curability of insanity, the medico-legal relations of insanity to will-making, and the effect of consanguineous marriages on the offspring. As Deputy Commissioner in Lunacy he had for his official superior Dr. W. A. F. Browne, whom he succeeded as Commissioner in May, 1870, retaining the appointment until 1895. From 1880 to 1881 he was a member of the Commission on Criminal Lunacy in England, and from 1888 to 1891 he was chairman of the Commission on Lunacy Administration in Ireland. His historical and antiquarian work involved a great amount of original research and special knowledge. A prominent member of the Society of Antiquarians of Scotland, he was Rhind lecturer on archæology from 1876 to 1878, professor of ancient history to the Royal Scottish Academy, president of the Early Scottish Text Society, vice-president of the Scottish Historical Society, vice-president of the Scottish Meteorological Society, and a member of the Universities (Scotland) Commission. In addition to the treatise already mentioned his published works included two on antiquarian or historical subjects, entitled "The Past in the Present; What is Civilisation?" and "List of Travels in Scotland, 1296 to 1900." In 1875 he received the distinction of LL.D. from the

University of Aberdeen, and in 1887 he was created K.C.B. Sir Arthur Mitchell was a man of charming personality, who readily commanded the affection as well as the admiration and esteem of those with whom he was brought into personal relations. In 1855 he married Miss Margaret Houston of Tullochgriban, Strathspey, who died in 1904, leaving a son.

JOHN HERBERT WELLS, M.B., B.S. LOND., M.R.C.S. Eng., L.R.C.P. Lond.

On Oct. 16th, at Ditchling, a village of the Sussex downlands, John Herbert Wells was released from a long and painful illness which he had borne with consummate bravery for nearly 18 months, the day of his death being the eve of his thirtieth birthday. He is not the first man by many to lose his life through taking the hazard of his calling and before the years had been granted him to fulfil his capacities for the service of science, and he would have been the last to have desired undue praise for his uncomplaining sacrifice, but his career is worthy of record, for it was that of a man who brought real advancement to more than one branch of English medicine by his thorough efficiency of hand and mind and by the enthusiasm of his eager spirit.

John Wells was born at Leicester in 1879, his father being Mr. William Wells, of that town, who survives him, and he was educated at the Wyggeston Hospital High School. His one ambition was always to "be a doctor," and before leaving school in his eighteenth year he had passed his London Matriculation and Pre-liminary Scientific Examinations. Coming up to London he gained simultaneously the Huxley scholarship at Charing Cross Hospital and a natural science scholarship at St. Mary's. He chose the latter, chiefly because there were old schoolfellows amongst the St. Mary's students, and was soon appointed in due succession demonstrator of physiology, practical histology, and pathology. Whilst occupying the first of these posts he attracted the attention of Dr. A. D. Waller, the lecturer in physiology, by his powers of steady work and qualities of mind, and the two became associated in studying the action of anæsthetics upon nerve in the microscopic gas chamber and the visible effects of ether and chloroform upon nerve fibres—work which was subsequently published in the reports of the British Association. Of their further joint labours Dr. Waller has written to us: "In 1902-3 we worked continuously together on the action of anæsthetics. He carried out successfully a series of laborious estimations of the amount of chloroform present in the blood of anæsthetised animals, the results of which have been confirmed by those of subsequent observers. I have now before me his report to the British Medical Association giving 18 mgs. per 100 grammes as the anæsthetic amount of chloroform in the blood and 34 mgs. as the lethal amount. The latest experiments of Buckmaster and Gardner give on the same kind of animals values of 20 and 40 mgs. respec-Dr. Waller adds, after paying a warm tribute to Wells's character, "He was a good and faithful worker who would certainly have taken high rank as a pathologist if he had been spared." But after qualifying M.R.C.S. Eng., L.R.C.P. Lond. in 1903, and gaining the clinical medicine prize at his hospital he turned his attention to the wards, and in the next year, having served as house physician to Dr. Sidney P. Phillips, he graduated M.B., B.S., at the University of London with honours in medicine and pathology. He also gained a silver medal in clinical medicine at St. Mary's, having been adjudged proxime accessit for the Cheadle gold medal.

The next two years of his medical life he spent as assistant to Dr. G. N. Caley at Ealing, and of his work there Dr. Caley has sent us a note which we print below. He was extremely successful with his patients, but a man of Wells's fibre could not remain long detached from the laboratory, and in 1906 he joined the department of therapeutic inoculation at St. Mary's Hospital, and speedily showed such a mastery of the principles and of the technique which Sir Almroth Wright was then elaborating that he became one of the most trusted members of a very hard-working band. Like all of them, he never spared himself at his work, which he was accustomed to extend far into the night, performing the prolonged and patient investigations that were necessary for the establishment of sound methods of vaccine therapy, and there

can be no question that this invaluable branch of treatment was advanced materially by his labour. He used humorously to pride himself on not being a genius, but he was always thorough and always level-headed, and there was no more popular man in the labora-Whilst establishing a private practice which grew rapidly, he took special delight in welcoming his friends to the home circle which he had established by his marriage in August, 1906, with Olive Berenice, daughter of the late Mr. Joseph H. Old of St. Merryn, Cornwall. A son was born to them in the following year and a daughter in 1908, soon after he contracted his fatal illness in the laboratory. This occurred about Whitsuntide, when he suddenly developed symptoms of a general bacterial infection whilst away on a holiday. He was able to return to work, but looked poorly, and the diagnosis of his condition was obscure. The bacteria with which he had been working were those of Malta fever, tubercle, streptococcus, typhoid, and glanders, and it was only too plain that he had received an accidental infection with one of these organisms. Chiefly from observations of his opsonic index it became almost certain that it was the latter, although he had no localising symptoms for some little time. By the end of July a deep swelling could be felt in the calf of his leg and he began to suffer from paroxysmal abdominal pain which suggested a focus of infection in the spleen. He was sent into a nursing home to be treated with inoculations of a vaccine prepared from bacillus mallei controlled by daily observations of his opsonic index. Under this treatment his symptoms nearly cleared up; he was very hopeful of recovery and he was able to go down to the country in the autumn. But the extra amount of walking that he then did brought back pain and swelling in his leg, and he had to return home to lie up again before Christmas, since when he has kept his bed except for a few occasional hours. The swelling in the leg was opened in February, and from some grumous material that was emptied the glanders bacillus was grown in pure culture. The wound soon closed, but was followed by great constitutional disturbance, with severe neuralgia in the groin and shoulder and renewed splenic pain, and these symptoms were not markedly affected by continued vaccine treatment. Last May he showed a great desire to be taken into the country, and with the sanction of his advisers he was moved to Ditchling, near Brighton, where he has since remained. For the last two months at least it has been apparent to his friends that he was a dying man, and as the end drew near he prepared for it with the calm courage that has never failed him. A fortnight ago the infection became generalised, foci appearing in the limbs and face, and though he suffered much less pain the final scene could only be regarded as a merciful release. He was buried on Oct. 18th in the presence of a considerable gathering of his hospital colleagues, including the chief for whom his devotion remained unshaken, and who had done everything that man could do to alleviate his distress. Dr. W. H. Willcox, Dr. H. A. Des Vœux, and Mr. H. S. Collier, who had also attended him during his illness, were all present, and a large number of beautiful wreaths were sent from the members of St. Mary's Hospital staff and many of his other friends who were unable to leave London to follow him to his rest.

We have spoken of the capacity for work which John Wells displayed. There remains a word to say about his deeper qualities, and here we fall back upon the words of a great personal friend. "There never lived," he writes, "a kinder or sweeter-minded man, nor ever passed away a braver spirit. His natural nobility underwent a wonderful development beneath a discipline that would have broken many men. Those who were able to spend with him some hours of his long vigil, even when he must have known the shades to be gathering round him, could hardly realise that he was in the grip of a mortal disease. On the days when he was free from pain he was the old bright companion who had never quite lost his boyhood, and he might have been cheerfully nursing a sprained ankle. His patience never failed, and he showed not only a charming courtesy down to the hour of his death to all who had dealings with him, but he took always a shrewd and kindly interest in the happiness of his friends. None who watched his illness can ever forget its example. He never looked back once nor regretted that he had undertaken the work which had hurt him. Had he recovered he would certainly have returned to it, for at first he often discussed plans for future research." For the first

12 months of his illness he read very widely, philosophical works having a special attraction for a mind of considerable general culture. Towards the end he turned less to books, but he never wearied of his friends, to whose visits he used to look forward eagerly. His greatest happiness lay in the devoted attention of his wife who could rarely be persuaded to leave his bedside, and to that mourning lady, as to his parents, such sympathy has gone out as can hardly be clothed in words. In the time to come they will surely find some comfort in the remembrance that though the loss of John Wells has brought them the full measure of the sorrow of man yet in the dignity of his death there was vigorous evidence of human splendour.

Dr. Guthrie N. Caley writes: "During the time that he was engaged in medical practice in this neighbourhood Dr. Wells, by his genial and cheerful disposition and by his ever-ready sympathy, made many friends who deeply deplore his early death. His professional ability soon gained him a good reputation, and his high integrity and upright manly character assured him the confidence of those entrusted to his professional care. His friends will remember him with affection, and his profession will hold him in honour as one who at a time when his life was rich with promise laid it down with manly fortitude as the penalty of his scientific zeal."

ROBERT CREWDSON BENINGTON, M.D., B.S. DURH., M.R.C.S. Eng., L.R.C.P. Lond., L.S.A.

Dr. Robert Orewdson Benington died suddenly from heart failure on August 26th while acting as substitute for a medical practitioner at Gillingham, Kent. His sudden death, which appears to have escaped the notice of his many friends, probably owing to the season at which it occurred, ends a chequered and remarkable career.

Dr. Benington was a student of St. Thomas's Hospital and acted as house physician after becoming a Member of the Royal College of Surgeons of England in 1879. In the earlier years of his professional life he intended to devote himself to gynæcology, and held the post of clinical assistant to the Hospital for Women, Soho-square, and afterwards proceeded to study at the College of Medicine, Newcastle-on-Tyne, and took the M.D. Durh. in 1892, in which year he was a vice-president of the British Gynæcological Society and contributed several papers to the Transactions. He acted as tutor and demonstrator of anatomy in the Medical College of Durham University. After leaving Durham he settled down to practice, but either because of the uncongeniality of his surroundings or a restlessness in his blood he never remained for long in one place. At one time, so we have been informed, he inherited a considerable fortune and abandoned practice. In more recent years he had held medical appointments in South Africa, ascended the Amazon as a ship surgeon, and travelled in a medical capacity in many parts of the world. In his later years he aged very rapidly, but a small competency which remained to him and the intervention of some devoted friends allowed him to devote almost the whole of his time to anthropological researches which have been so abruptly terminated by his sudden death.

Some 12 months ago he was most industriously carrying out, under the direction of Professor Karl Pearson, an elaborate and accurate series of measurements of skulls in the Museum of the Royal College of Surgeons of England and in the Natural History Museum, South Kensington. At a period of life—he died in his fiftyseventh year-when most men shrink from undertaking fresh enterprises, he became an ardent disciple of the modern biometrical school, and sought to apply the new methods to the problems of anthropology in general and craniology in particular. At the moment of his death he had accumulated a vast store of measurements and tracings, which were to form the subject-matter of important papers he intended to prepare, in conjunction with Professor Pearson, during the present winter. He was not only a very modest worker and gentleman, but also a very accurate and orderly one, so that there is little fear of his work being lost, although he has not lived to see the results of his labour published and appreciated.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The death of the following eminent foreign medical man is announced:—Dr. Kornel Chyzer, head of the medical department of the Ministry of the Interior, Budapest, at the age of 73 years.

Medical Rews.

Foreign University Intelligence .-Baltimore (University of Maryland): Dr. Joseph W. Holland has been appointed Assistant Professor of Anatomy.-Berlin: Dr. Ernst Salkowski, who has been for many years at the head of the chemical department of the University Pathological Institute, has been appointed to an Honorary Professorship.—Bologna: Dr. Ulisse Gardini has been recognised as privat-docent of Urology.—Cornell: Dr. J. A. Hartwell has been promoted to the chair of Surgery. Dr. John R. Murlin has been appointed Assistant Professor of Physiology, and Dr. Silas P. Beebe, Assistant Professor of Experimental Therapeutics.—Cracew: Dr. Stefan Horoszkiewicz, privat-docent of forensic medicine, has been appointed Extraordinary Professor. Dr. Leo Glinski has been appointed Extraordinary Professor of Pathological Anatomy and Dr. Wenzel Chlumsky Extraordinary Professor of Surgery. -Florence: Dr. Guido Marchetti has been recognised as privat-docent of Internal Pathology, and Dr. Guglielmo Foa as privat-docent of Hygiene. - Genoa: Dr. Mario Vittorio Maragliano has been recognised as privat-docent of Internal Pathology and Dr. Umberto Parodi as privat-docent of Pathological Anatomy.—Königsberg: Dr. Adolf Stein has been recognised as privat-docent of Odontology.—Lemberg: Dr. Johann Masurkiewicz has been recognised as privat-docent of Psychiatry. Dr. Bednarsky and Dr. A. Szuleslawski, privat-docenten of Ophthalmology, have been granted the title of Extraordinary Professor.—Naples: Dr. Pasquale Castiglione-Morelli has been recognised as privat-docent of Topographical Anatomy and Operative Medicine and Dr. Vincenzo-Patricelli, as privat-docent of Internal Pathology. Dr. Reinhard Dohrn has been appointed to succeed his father as Director of the Zoological Station.—Padua: Dr. Ettore Greggio has been recognised as privat-docent of External Pathology and Dr. Alberto Graziani as privat-docent of Hygiene.— Palermo: Dr. Tebaldo Cimino has been recognised as privat-docent of Urology and Dr. Eduard Carapelle as privat-docent of Hygiene.—Pisa: Dr. Guido Sotti has been recognised as privat-docent of Pathological Anatomy.—Prague (German University): Dr. Eduard Pietrzikowski, privat-docent of Surgery, has been appointed to an Extraordinary Professorship.—Rome: Dr. Andrea Conti has been recognised as privatdocent of Internal Pathology.—Strasburg: Dr. Hans Dietlen has been recognised as privat-docent of Medicine. - Turin: Dr. Giuseppe Serafini has been recognised as privat-docent of External Pathology and Dr. Adriano Ceradini as privatdocent of Bacteriology. - Utrecht: Dr. A. J. P. Van den Brock of Amsterdam has been appointed to the chair of Anatomy.

THE GUILD OF ST. LUKE.—The annual medical service, under the auspices of the Guild of St. Luke, was held at St. Paul's Cathedral on Wednesday evening. The cathedral was well filled, a number of medical men in academic costume after entering in procession being grouped in the centre of the nave. The music was well rendered by a voluntary choir, under the direction of Mr. W. G. Ross, F.R.C.O., who was at the organ, and Mr. S. Herbert Smith. The processional hymns were "Blessed City, Heavenly Salem," and "The God of Abraham Praise." The anthem was Mendelssohn's "Lord, Thou Above art God," and the hymns before and after the sermon were, "O Strength and Stay Upholding all Creation" and a special Guild hymn, "Thou, Whom High in Heavenly Places." The preacher was the Rev. Fr. Waggett, S.S.J.E., who delivered a vigorous sermon from the text of St. Luke v. 12, 13. The offertory, after paying the expenses of the service, was devoted to the College of St. Luke.

A COMPENSATION CLAIM FOR A FATAL LIGHTNING STROKE.—A somewhat singular application under the Workmen's Compensation Act, 1906, was made at the Brighton county court on Oct. 14th. The widow of a farm labourer who was killed by lightning on July 7th applied for compensation from the tenant of the farm. At the time of the thunderstorm the man was engaged cabbage-planting on an exposed part of the Southdowns, near Brighton, and for the applicant it was held that such planting had to be done when the ground was wet or the plants would die, that the soil was naturally damp and heavy, affording an attraction to

lightning, and that while crouching down seeking what little shelter there was the man would be a great attraction to the electric fluid. His honour Judge Scully held that it had not been shown that the man was subject to any special risk more than anybody else who might have happened to be out in the storm; and to say that he was running exceptional risk seemed to be going beyond the bounds of common-sense and reason. His honour found for the respondent with costs.

MEDICAL SERVICE AT BRIGHTON.—The annual service for the medical men and nurses of Brighton and Hove took place on Sunday evening last at the parish church, Brighton. The church was crowded. The special preacher was the Bishop of Lewes and Vicar of Hove, Dr. Hedley Burrows, and he based his sermon on healing on St. Luke xiii., 17. A portion of the offertory goes to the medical charities of the towns.

THE SPREAD OF ANTHRAX.—At an inquest held last week at Warrington upon a workman who had died from anthrax it was given in evidence that the usual washing appliances for the prevention of hide infection were provided at the tannery where the deceased man worked, but that the workmen generally failed to use them. The coroner said that it was desirable for legislation to be passed making the use of such appliances compulsory upon such workers.

A MEDIAL FOR A MEDICAL MAN.—At a meeting of the Camberwell borough council held on Wednesday the Mayor (Councillor W. S. T. Martin), in reviewing the past municipal year in the borough, remarked that during his time in office he had had the great pleasure of conferring the Royal Humane Society's medal for saving life from drowning on Mr. C. A. Sampson of Camberwell and Frederick Devlin, the latter being a boy who had learnt to swim in the municipal baths.

LITERARY INTELLIGENCE.—Messrs. Simpkin, Marshall, Hamilton, Kent, and Co., Limited, will shortly publish the first number of a new review, to be known as "The Local Government Review," which will deal with all the topics affecting county, municipal, district, and parish government and the administration of the Poor-law.—A new edition of "Manual of Military Ophthalmology," by Colonel M. T. Yarr, R.A.M.C., has been published by Messrs. Cassell and Company, Limited.

THE ASSOCIATION OF CERTIFICATED DISPENSERS.—A special general meeting of this association will be held on Monday, Nov. 1st, at 8 P.M., in the Apothecaries' Hall, Blackfriars, London, E.C., for the purpose of considering the following resolution:—

That this meeting desires to express its regret that the Pharmaceutical Society has not yet taken any effective step to make by-laws under the powers conferred by S. 4 of the Pharmacy Act, 1908, relative to the registration of those holding the assistants certificate and others as pharmaceutical chemists, and respectfully begs the Society of Apothecaries to use its best endeavours to see that the intention of the legislature in this respect is carried out without further delay.

All members and others holding the Hall certificate are invited to attend and support the resolution. The clerk to the society, Mr. A. Mowbray Upton, and Dr. F. S. Toogood will address the meeting.

MONMOUTHSHIRE WATER-SUPPLY. — The difficulties which are connected with the water-supply of colliery districts are dependent mainly upon two factors. The increasing number of inhabitants on the one hand necessitates a larger supply, and, on the other hand, the local supply available is decreased owing to the mining operations. Sooner or later, therefore, it is found necessary to go quite outside the area of the coal-field to obtain a sufficient and suitable supply. These factors are prominently in evidence in the western valleys of Monmouthshire, so that a scheme is in contemplation to construct a reservoir capable of holding over 300,000,000 gallons in Brecknockshire and to convey the water to the Monmouthshire valleys. Already a joint outfall sewer is in course of construction for the colliery towns in the western valleys, so that there ought not to be much difficulty in providing a joint water-supply for the same district. The sparse population of Brecknockshire renders the mountainous parts of the county admirable gathering-grounds for water-supplies, and although large tracts are already reserved for the Cardiff and Merthyr corporations

and by the Aberdare district council, there are still left many excellent catchment areas for the supply of other districts.

THE medical officer of health of Barnstaple (Devon) in a report states that about 90 per cent. of the school children in that town require treatment for their

MEDICAL MAGISTRATES.—Dr. W. F. Crosskey, of Lewes, has been placed on the commission of the peace for the county of Sussex.—Mr. Jamieson Boyd Hurry, M.D. Cantab., D.P.H., has been appointed to the commission of the peace for the borough of Reading.

"CHURCH AND MEDICINE" AT GOLF.—An interesting golf match took place recently at Long Ashton, near Bristol, between teams representing "Church and Medicine." It resulted in an easy win for the medical men, who scored 10 points against 21 by the clergy.

THE OGSTON TESTIMONIAL.—The committee in charge of the testimonial to Professor Ogston desires to intimate that members of the medical profession wishing to contribute should send their subscriptions to the honorary secretary, Dr. Mackenzie Booth, 1, Carden-place, Aberdeen, at an early date, as the subscription list must soon close.

PRESENTATION TO A MEDICAL PRACTITIONER. On Oct. 8th, at Kingswood, near Bristol, Mr. C R. Vevai, L.R.C.P. & S. Edin., L.F.P.S. Glasg., was presented with a case of surgical instruments and an address as a mark of respect and esteem on the occasion of his departure for Bombay.

SOUTH-WEST LONDON MEDICAL SOCIETY.—The first meeting of the session was held on Oct. 13th at the Bolingbroke Hospital. Dr. M. Mackintosh read an interesting and amusing paper on "Errors in Diagnosis." The President, Dr. L. S. McManus, and several members joined in the discussion which followed.

THE SEWERAGE OF YEOVIL (SOMERSET).-Yeovil town council has already spent about £40,000 upon sewerage and sewage works for the town, but the results have been very unsatisfactory. The Local Government Board has now sanctioned the borrowing of £27,500 for the purpose of reconstructing the sewerage works.

MEDICO-LEGAL SOCIETY.—The next meeting of this society will be held in the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W., on Oct. 26th, at 8.15 P.M., when the presidential address will be given by Sir John Tweedy, and Dr. F. Graham Crookshank will read notes on the post-mortem examination of bodies found in the river.

In response to a request by the Secretary of Public Health and Charities of the Republic of Cuba the Asylums Committee of the London County Council has granted Mr. T. S. Logan, assistant medical officer of the Epileptic Colony, 12 months' leave of absence without pay in order that he may assist in the remodelling and reorganisation of the State Asylum for the Insane in Mazorra, Cuba.

THE ROYAL INSTITUTE OF PUBLIC HEALTH. Last Tuesday a course of 13 lectures was started at this institute. The course deals with elementary anatomy, physiology, home nursing, the care of children, school sanitation, infectious disease, and domestic and public hygiene, and has been arranged with a view of assisting candidates wishing to qualify for the positions of health visitors, school nurses, and the like. The lectures are also open to women students not intending to enter for the examination. The lectures will be continued on Tuesdays and Fridays at 7 P.M. at 37, Russell-square, W.C. The fee for the course is 1 guinea.

MALAGA AS A WINTER RESORT.—In his annual report, just received at the Foreign Office, Mr. Staniforth, the British Consul, writes: "The excellence of the climate of Malaga is becoming better appreciated, and a larger number of British visitors winter here every season. It is unfortunate that Malaga is not better known for its climatic conditions, which are unsurpassed at any winter resort. There is a demand in Malaga for a really good hotel. The British visitor at present is obliged to put up at Spanish boarding-houses, the only good English family pension being usually full. A British company might find it to its interest to study the matter."

Parliamentary Intelligence.

HOUSE OF LORDS.

WEDNESDAY, OCT. 13TH.

Asylum Officers' Superannuation Bill.

Asylum Officers' Superannuation Bill.

Lord Monk-Bretton moved the second reading of the Asylum Officers' Superannuation Bill, which is designed to provide for superannuation allowances to officers and servants employed in public asylums for the insane in Great Britain and Ireland. He stated that asylum officers and servants would be under an obligation to contribute towards the pensions. He also announced that in committee he would propose an amendment that pensions might be made at the discretion of the local authority, even although the worker had not completed the necessary ten years' service nor had reached the required age of 60 years. He said, further, that the county councils had been circularised in order to obtain their views on the Bill, but very few objections had been forthcoming.

Lord Bellefer said that many of the county councils were anxious that the Bill should be adoptive. The objections to it were wider spread than the noble lord, who proposed the second reading, seemed to realise. It would likely create a considerable charge on the rates, and the rate-payers' position should be fully considered. In his opinion the further consideration of the Bill should be postponed until next session, in order that it might be more fully discussed in the country by all those who

consideration of the Bill should be postponed until next session, in order that it might be more fully discussed in the country by all those who would be affected by it, and a better Bill ultimately brought forward. The Archbishop of CANTERBURY warmly supported the second reading. The principle of the Bill was indisputably right, and in his opinion those who undertook the care of the insane in asylums should be relieved from all anxiety as to their position when their health had been warm out. worn out.

worn out.

The LORD CHANCELLOR remarked that surely their lordships would give the Bill a second reading. It had not been discussed in the House of Commons because there was no opposition to it there. He meationed that the Commissioners in Lunacy were entirely favourable to the granting of superannuation allowances on a fixed scale to asylum officers. The service was a difficult one, and it was important to obtain for the care of the insane the best and most skilled attendants who would not be tempted to go away to some other occupation.

The Earl of HALSBURY argued that asylum officers and servants were entitled to receive pensions, and he warmly supported the Bill.

The Bill was read a second time.

HOUSE OF COMMONS.

MONDAY, OCT. 18rm. Assistant Surgeons in India.

Assistant Surgeons in India.

Mr. Hazleton asked the Under Secretary of State for India whether the senior assistant professor at the Medical College, Madras, and the senior assistant surgeon at the General Hospital, Madras, were Rurasian military assistant surgeons lent to the civil medical department; whether he could state their medical qualifications and salaries, with the salaries of the civil assistant surgeons under them; and whether it was proposed to open these posts to well-qualified Indians.—The MASTER OF BLIBANK civil List that the two officers mentioned are military assistant surgeons; the Secretary of State has no information as to whether they are Eurasians, or as to their medical qualifications; their total emoluments are respectively Rs. 575 and Rs. 255 a month; the civil assistant surgeons in the Medical College, who hold appointments of equal rank, draw either Rs. 250 or Rs. 200 a month. As was stated in reply ose that duly qualified Indian assistant surgeons will not be held eligible for these posts in the event of vacancies occurring.

TUESDAY, OCT. 19TH.

The Reported Case of Beri-beri in Ireland.

The Reported Case of Beri-bert in Ireland.

Mr. Conor O'Kelly asked the Vice-President of the Department of Agriculture (Ireland) whether his attention had been called to the fact that a Norwegian named Obsen, employed at the whaling station on Iniskea Island, in the county of Mayo, was recently admitted to the local hospital in Belmullet, and was certified by the hospital doctor to be suffering from beri-beri; and, if so, is he in a position to state the causes that led to the outbreak of this disease.—Mr. T. W. Russell replied: The department have ascertained that a Norwegian sailor employed in a steamer catching whales off the Mayo coast was admitted to Belmullet Infirmary on Sept. 11th, and on the 12th he was atmasferred to the Fever Hospital. He was discharged as cured on Sept. 21st. He was discharged as cured on Sept. 21st. He was afterwards admitted to the Leith Hospital in Scotland, where he died from inflammation of the heart. No traces of beri-beri were observable.

Tuberculosis in the Public Services.

Tuberculosis in the Public Services.

Tuberculosis in the Public Services.

Mr. SUMMERBELL asked the Prime Minister whether he was aware that during the past ten years 3286 men had been discharged from the Army, 2673 from the Navy, and 1057 men and women from the Post Office, in all 7016 persons, suffering from tuberculosis; that no provision had been made by the Government for the care of such invalids or the prevention of the spread of the disease; and whether, in view of the efforts made by the Government, in the shape of legislation and other measures, to check the ravages of this disease, he was prepared to take action with a view of making provision for the proper treatment of all such cases in the future.—Mr. Hobhouse (on behalf of Mr. Asquite) answered: I understand that the figures stated in the first part of the question are correct. In answer to the remainder of the question, I have nothing to add to the answer given by the Prime Minister on Nov. 11th, 1908.

WEDNESDAY, OCT. 20TH.

Medical Examinations of London University.

Sir William Collins saked the Prime Minister whether he had received any communications from or on behalf of the medical schools of London in regard to the standard of the medical examinations for degrees of London University; and whether he would state the nature of such communications, and what action, if any, he proposed to take

in regard to them.—Mr. Asquitt wrute in reply: I have received communications from the delegates of the London medical schools and other bodies of the character referred to by my honourable friend, and I have forwarded them to the President of the Royal Commission on the London University.

BOOKS, ETC., RECEIVED.

ADLARD AND SON, London.

A Guide to the Study of the Specimens in the Sections of Obstetrics and Gynæcology in the Museum of St. Bartholomew's Hospital. By Herbert Williamson, M.A., M.B., M.R.C.P., and Reginald Jamison, M.A., M.B., F.R.C.S. Price 5s. net.

ARNOLD, EDWARD, London.

A System of Clinical Medicine. By Thomas Dixon Savill, M.D. Lond. Second edition. Revised by the Author, assisted by Frederick S. Langmesat, M.D. Lond., and Agnes F. Savill, M.A. St. And., M.D. Glasg. Price 25s. net.

BAILLIERE, TINDALL, AND COX, London. (BRENTANO, Paris.)

The Morphia Habit and its Voluntary Renunciation. With Notes and Additional Cases. By Oscar Jennings, M.D. Paris. Price 7s. 6d. net.

BAILLIÈRE, TINDALL, AND COX, London.

Cows. Cow-Houses and Milk. By G Mayall, M.R.C.V.S. Price 2s. 6d. net.

BOHN, F. (De Erven), Haarlem. (FISCHER, GUSTAV, Jens.)

Die Asthenie und die Lage-Anomalien der Weiblichen Genitalien. Von Dr. P. C. T. van der Hoeven. Price M. 3.

CHATTO AND WINDUS, London.

Astronomical Curiosities, Facts, and Fallacies. By J. Ellard Gore, Member of the Royal Irish Academy, Fellow of the Royal Astronomical Society. Price 6s. net.

CHURCHILL, J. AND A., London.

Materia M. And A., London.
Materia M. And A., London.
Materia M. Medica, Pharmacy, Pharmacology, and Therapeutics. By W. Hale White, M.D. Lond., M.D. Dub. Hon. Eleventh edition. Price 6s. 6d. net.
A Text-book of Experimental Physiology. By N. H. Alcock, M.D., D.Sc., and F. O'B. Ellison, M.D. With a Preface by E. H. Starling, M.D. F.R.C.P., F.R.S. Price 5s. net.
Sight-testing Made Basy. By W. Wright Hardwicke, M.D. St. And., M.R.C.P. Edin. Price 2s. 6d. net.

CORNISH BROTHERS, LIMITED, Birmingham.

Contributions to the Study of Rectal Disease. By F. Victor Milward, B.A., M.B., B.C. Cantab., F.R.C.S. Eng. Price 2s. net.

DENTAL MANUFACTURING Co., LIMITED, London.

Notes on the Treatment and Filling of Teeth. By William Cass Grayston, L.D.S. Third edition. Price 7s. 6d, net,

FISCHER, GUSTAV, Jena.

Adlas der Menschlichen Blutzellen. Von Dr. Artur Pappenheim. Zweite (Schluss-) Lieferung. Price, M.30.

Lehrbuch der Protozoenkunde. II. Auflage der "Protozoen als Parasiten und Krankheitserreger." Von Dr. F. Dofieln. Price, paper, M.24; bound, M.26.50.

Praktische Anleitung zur Ausführung des biologischen Eiweissdifferenzierungsverfahrens, mit besonderer Berücksichtigung der forensischen Blut- und Fleischuntersuchung, sowie der Gewinnung präzipitulerender Sera. Von. Prof. Dr. P. Uhlenhuth und Dr. O. Weidanz. Price M.6.50.

Handbuch der Gesamten Therapie. In Sieben Bänden. Herausgegeben von Dr. F. Penzoldt und Dr. R. Stintzing. Vierte umgearbeitete Auflage. Sechste Lieferung. Price M. 4 50.

Vorlesungen über chirurgische Infektionskrankheiten. Von Dr. Tb. Kocher und Dr. E. Tavel. Erster Teil: Die Streptomykosen. Price M.6.

Price M.5.

Das Lymphgefasssystem. Von Dr. Paul Bartels. Price M.12

Kinführung in die Hydrotherapie und Thermotherapie. Von
Dr. Julius Strasburger. Price, paper, M.6; bound, M.7.

Die Normalen Asymmetrien des menschlichen Körpers. Von
Dr. E. Gaupp. Price M. 1.50. Von Prof.

FROWDE, HENRY, and HODDER AND STOUGHTON, London.

Owder, Henry, and Hodder and Stoughton, London.

Oxford Medical Publications. Infectious Diseases. By Claude Buchanan Ker, M.D.Ed., F.R.C.P. Ed. Price 20s. net.

Gall-stones, their Complications and Treatment. By A. W. Mayo Robson, D.Sc. Leeds, F.R.C.S. Eng., and P. J. Cammidge, M.D. Lond. Price 5s. net.

Oxford Medical Publications. Introduction to Practical Chemistry. By A. M. Kellas, B.Sc. Lond., Ph.D. Heidelberg. Price 3s. 6d.

GREVEL, H., AND Co., London.

Chemistry in Daily Life. Popular Lectures. By Dr. Lassar-Cohn.
Translated by M. M. Pattlson Muir, M.A. Fourth edition,
revised and augmented. Price 6s.

HEINEMANN, WILLIAM, London,

Why Worry? By George Lincoln Walton, M.D. Price 2s. 6d. net. Self Help for Nervous Women. Familiar Talks on Reconomy in Nervous Expenditure. By John K. Mitchell, M.D. Price 2s. 6d.

HEYWOOD, JOHN, LIMITED, Manchester and London.

A Handbook of Venereal Diseases. By A. C. Magiau, M.D., B.Ch. Vict. Price 3s. 6d. net.

HODGE, WILLIAM, AND Co., Edinburgh and Glasgow.

Construction, Equipment, and Management of a General Hospital. By Donald J. Mackintosh, M.B., M.V.O. Price 10s. 6d. net.

HUMPHREYS, ARTHUR L., London.

Masques and Phases. By Robert Ross. Price 5s. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Langer Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

Southwark.

Collier, James, M.D., F.R.C.P. Lond., has been appointed Honorary Physician to the Royal Rye Hospital, Southwark.

Collins, Sir W. J., M.P., M.D., M.S. Lond., F.R.C.S. Eng., has been appointed Honorary Surgeon to the Royal Rye Hospital, Southwark.

Dodden H. Bonar, M.D. Edin., has been appointed District Medical Officer at St. Vincent, British West Indies.

Franser, Forbes F.R.C.S. Eng., has been appointed Honorary Surgeon to the Royal United Hospital, Bath.

HENDRIES, C. M., M.B. Durh., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Bicester District of the country of Oxford.

JUDAH, D., M.B., B.S. Lond., has been appointed Cinical Assistant to the Chelsea Hospital for Women.

JUDE, F. J., M.B., Ch.M. Edin., has been appointed Government Medical Officer and Vaccinator at White Cliffs, New South Wales, Australia.

Medical Officer and Vaccinator at White Cliffs, New South Wales, Australia.

King-Kdwards, T. R., M.B., B.S. Dub., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Watlington District of the county of Oxford.

McHardy, M., F. R.C.S. Edin., has been appointed Honorary Consulting Surgeon to the Royal Rye Hospital, Southwark.

Pollard, Reginald, M.B. Durh., M.R.C.S. Eng., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

Rice, T. W., L.R.C.P. & S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Mountmellick District of Queen's County, Ireland.

Stark, A. Campbell, M.B., B.S. Lond., has been appointed Assistant Surgeon to the British Skin Hospital.

SWIFT, H., M.D. Cantab., M.R.C.S. Eng., has been appointed Honorary Physician to the Adelaide Hospital, South Australia.

TITTERTON, JOHN TARRATT, M.B., C.M. Edin., has been appointed Medical Officer for the Fifth District by the St. Germans (Cornwall) Board of Guardians.

Pacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ASTON UNION WORKHOUSE AND COTTAGE HOMES, Birmingham.—
Resident Assistant Medical Officer. Salary £140 per annum, with
apartments, rations, and washing.
BOURNEMOUTE, ROYAL NATIONAL SANATORIUM FOR CONSUMPTION AND
DISEASES OF THE CHEST.—Resident Medical Officer. Salary £10per month, with board, residence, and washing.
BRISTOL, COSSHAM MEMORIAL HOSPITAL, Kingswood.—House Surgeon.
BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Assistant,
House Surgeon. Salary £50 per annum, with board, rooms, and
attendance.

attendance.

STOL ROYAL INFIRMARY.—Resident Casualty Officer for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

CANCER HOSPITAL, Fulham-road, London, S.W.—Assistant Anæsthetist.

and washing.
CANCER HOSPITAL, Fulham-road, London, S.W.—Assistant Anæsthetist.
Salary 25 guineas per annum.
CARDIFF INFIRMARY (GENERAL HOSPITAL).—House Surgeon. Salary
£60, with board and residence.
CENTRAL LONDON SCHOOL DISTRICT SCHOOL, Hanwell.—Resident
Medical Officer. Salary £300 per annum, with unfurnished house,
lighting, firing, water, milk, and washing.
CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—House Surgeon,
unmarried. Salary £30 per annum.
CHICHESTER, WEST SUSSEX AND BAST HANTS GENERAL INFIRMARY
AND DISPENSARY.—HOUSE Surgeon. Salary £30 per annum, with
board, residence, and washing.
CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria
Park, E.—Physician to Out-patients.
DUDLEY, GUEST HOSPITAL.—Senior Resident Medical Officer. Salary
£100 per annum, with board, residence, attendance, and washing.
BAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN,
Shadwell, E.—House Surgeon. Salary at rate of £75 per annum,
with board and residence.
EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road,
London, S.E.—House Physician for six months. Salary at rate of
£60 per annum, with board, residence, and washing.
GEABGOW UNIVERSITY.—Additional Examiners in Zoology and
Anatomy.

GLASGOW UNIVERSITY.—Additional Examiners in Zoology and Anatomy.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Physician. Also Surgeon to the Ear and Throat Department.

HAMPSHIEE COUNTY COUNCIL.—Assistant County Medical Officer of Health. Salary £250 per annum, and allowances.

HAMLEY BDUCATION COMMITTEE.—School Medical Officer (female). Salary £200 per annum.

HOSPITAL FOR EPILIERY AND PARALYSIS AND OTHER DISEASES OF THE NERVOUS SYSTEM, Maida Vale.—Honorary Amesthetist, also Honorary Dentist.

HULL, ROYAL INFIRMARY.—Casualty House Surgeon. Salary at rate of £60 per annum, with board and lodging.

INGHAM INFIRMARY AND SOUTH SHIRLDS AND WESTOE DISPENSARY.—
Junior House Surgeon. Salary £90 per annum, with residence,

board, and washing.

LINCOLN.—Assistant Medical Officer of Health for six months. Salary at rate of £250 per annum.

LINCOLN COUNTY HOSPITAL.—Junior House Surgeon, unmarried, for six months. Salary at rate of £75 per annum, with board, residence, and washing.

LIVERPOOL ROYAL INFIRMARY.—Honorary Physician.
LIVERPOOL, STANLEY HOSPITAL.—Junior House Surgeon. Salary £60

per annum.

TEMPERANCE HOSPITAL, Hampetead-road, N.W.-Medical Registrar.

London Throat Hospital, 204, Great Portland-street, W.—Assistant

LONDON THROAT HOSPITAL, 204, Great Portand-street, w.—Amistant Surgeon and two Assistant Anasthetists.

LOWESTOFT HOSPITAL.—House Surgeon, unmarried. Salary at rate of £100 per annum, with board, lodiging, and washing.

Maidstone, Kent County Asylum.—Fourth Assistant Medical Officer, unmarried. Salary £175 per annum, with quarters, attend-

ance, &c.

MANCHESTER, NORTHERN HOSPITAL FOR WOMEN AND CHILDREN,
Park-place, Cheetham Hill-road.—Honorary Surgeon for Children.

MARGATE, ROYAL SEA-BATHING HOSPITAL.—Resident Surgeon, as
Junior for six months and as Senior for a like period. Salary at
rate of £80 and £120 per annum respectively, with board and residence.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.—Senior and Junior Resident Medical Officers. Salary £100 and £50 per annum respectively, with board and residence.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160, with apartments, attendance, light, and fuel

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Physician. Salary £60 per annum, with board, lodging, and washing. Also House Surgeon. Salary £100 per annum, with board, lodging, and

washing.

PARTICK, BURGH OF.—Medical Officer of Health. Salary £250 per

annum.
QUBEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—
Resident Medical Officer for four months. Salary at rate of £50 per
annum, with board, residence, and washing.
ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Third House
Surgeon. Salary at rate of £50 a year, with board and residence.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street,
Strand, W.C.—Pathologist and Curator. Salary £50 per annum.
Also Assistant House Surgeon for six months. Salary £20, with

Also Assistant House Surgeon for six months. Salary 220, with luncheon and tea.

St. Bartholomew's Hospital.—Surgeon.

St. Mark's Hospital for Fistula and other Diseases of the Rectum, City-road, E.C.—Three Clinical Assistants.

St. Mark's Hospital, Paddington, W.—Assistant Physician to Outputs.

patients.

STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House Surgeon. Salary £82 per annum, with board, residence, and launder.

Bundry

STAMFORD HILL AND STOKE NEWINGTON CHARITABLE DISPENSARY,

N.—Assistant Medical Officer. Salary £100 per annum, with board

N.—Assistant Medical Officer. Salary £100 per annum, with board and residence.

STROUD GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

TRIGRMOUTH HOSPITAL, S. Devon.—House Surgeon. Salary £30 per annum, with board, lodging, and washing.

THROAT HOSPITAL, Golden-square, W.—Resident House Surgeon. Salary £75 per annum, with board, residence, and laundry.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Surgeon for six months. Salary £30, with board, lodging, and laundry.

and laundry.

WAREFIELD, CLAYTON HOSPITAL.—Senior House Surgeon, unmarried.

Salary £120 per annum, with board, lodging, and washing.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Longford, in the county of Longford; at Airdrie, in the county of Lanark; and at Lauder, in the county of Berwick.

Births, Marriages, and Deaths.

BIRTHS.

WATKINS.—On 15th October, at Stone-Legh, Newton-le-Willows, Lancashire, the wife of Harold E. Watkins, M.R.C.S. Eng., of a

MARRIAGES.

MARRIAGES.

ODELL—MOORE.—On the 14th inst., at St. Mary Magdalene's, Torquay, by the Rev. Canon Ransford, M.A., Vicar of St. Paul's, Upper Norwood, assisted by the Rev. E. P. Gregg, M.A., Vicar of the parish, and the Rev. R. W. Odell, M.A., Vicar of St. Matthews, Brighton, cousin of the bridegroom, William Odell, M.D., F.R.C.S., of Ferndale, Torquay, to Ruth Annie, younger daughter of Joseph Moore, Esq., of "Culross," Torquay.

SWANN—CASSELS.—At the Grand Hotel, Glasgow, on the 18th October, by the Rev. Thos. Currie, M.A., Langside-hill U.F. Church, assisted by the Rev. David H. Tweeddale, M.A., New Leeds U.F. Church, Alexander James Thompson Swann, M.B., Ch. M. Glasg., West African Medical Staff, Northern Nigeria, to Effie Jenima Cassels, L.R.C.P.&S. Edin., L.F.P.S. Glasg., elder daughter of A. B. Cassels, 12, Camphill-avenue, Langside.

DEATHS.

CLIBBORN.—At Bolton-gardens, W., suddenly, William Clibborn, M.D. T.C.D., late of Dorset House, Bridport.

Rotes, Short Comments, and Answers to Correspondents.

EVERY MAN HIS OWN IMMUNISER.

A CORRESPONDENT has forwarded us a copy of The Autocar of Oct. 9th, in which there is an advertisement of an "influenza cure" opens up a new and dangerous field of unqualified practice. of Flux the 'Flu' Cure taken now will render you immune from influenza and its attendant ills during the whole of the It is a bacillus culture, prepared in one of the world's leading bacteriological laboratories. It causes no inconvenience to the user, but is death to any influenza bacillus which attempts the user, but is death to any influenza bacillus which attempts to enter the system. Supplied in two forms, A Preventive, and B Curative. Case £1 is. 0d. Extra tubes 8s. 6d. each. Proprietors-'Flux' Co., 100, Evering Road, N." In the middle of this text is a figure illustrating the "case" referred to, open and containing a glass phial labelled "skin anæsthetic," another labelled "vaccine," and beneath them a hypodormic syringe and needle. Such a flagrant abuse of a valuable method of treatment scarcely needs reprobation, for its danger is apparent. The proprietors of advise their patrons to inject into themselves, with no kind of scientific control, a substance which, if they describe it accurately as a vaccine, is a remedy requiring the greatest skill and technical knowledge in its employment; but we can hardly believe that even the habitual supporters of unqualified practice will be such fools as to inoculate themselves with an unknown stuff. We have not seen the alleged vaccine and have no knowledge of its composition, but if the claim is true that it is supplied by a "leading bacterio logical laboratory" the person supplying it should certainly be asked for an explanation by the responsible directors of that institution. We do not remember a similar exploitation of modern science, although we have been accustomed to some fairly strong claims from unqualified persons. The advertisement should serve as a warning to all laboratories preparing vaccines for responsible firms to take proper precautions as to the ultimate destination of their products.

PREVAILING DISEASES IN BRAZIL.

Mr. Cheetham, Secretary of the British Legation at Rio de Janeiro, in his annual report just received at the Foreign Office, states that the year 1908 was marked by a very serious epidemic of small-pox in Rio de Janeiro, about 6130 deaths occurring in the four months from June to October, and the total of deaths for the year from this cause alone amounting to 8800. The majority of victims were of negro extraction and to a marked degree persons who had neglected vaccination, though every convenience for it was offered by the authorities. Small-pox, it may be stated, is more or less endemic in the cities of Rio de Janeiro, Bahia, Pernambuco, and Pará, and this year there was an outbreak in Maranhão. Though the heat of Rio is often excessive, the climate is salubrious and the yellow fever of former years has, to all appearances, been practically stamped out. This success is due to the exertions of a department organised by Dr. Oswaldo Cruz, which for some time past has been engaged in scientific sanitary work, including the systematic destruction of mosquitoes of the yellow-fever transmitting variety. The "malaristransmitter" must continue to be plentiful in the marshy outlying districts for many years to come. Similar measures have been taken in Santos with beneficial results, the health of both cities having entirely changed during the last few years and sanitary conditions no longer inspiring the dread which they formerly did. In the case of Santos it was largely owing to the draining and reclaiming of pestilential land in connexion with the dock works that the health of the city was so greatly improved. Of the more important Brazilian ports, Bahia, Manãos, and Pará are the only ones now suffering from yellow fever, and in these places the native-born element is apparently immune. Malaria is common along the lowlying coast-belt and salt-pan district between Rio and the extreme south. It is also rife wherever there is marsh and along all the big slow-moving rivers. The Amazon basin is affected throughout and in the upper waters is undeniably bad, more noticeably perhaps in the Madeira-Mamoré and Acre districts, where the railroad workers and rubber collectors suffer intensely. Mosquitoes abound in these parts in myriads, and the mortality is sufficient to produce alarm in the traveller, though it is to be doubted whether the malaria of Brazil anywhere is of so virulent a type as is found in Africa and many other countries. Much of the mortality is due to bad food in sickness and improper care. Of other diseases tuberculosis is the most persistent in its ravages in the cities, being specially prominent in Rio and Pernambuco, where it shows a predilection for the black population. The official statistics of the mortality from this cause in Rio for the five years 1903-07 inclusive show an average of well over 3000 deaths per year, or exactly 4 per 1000 inhabitants. Though much is due to damp and predisposition, the majority of cases are the result of bad housing, bad food, want of air and care indoors, and dirty habits inseparable from the conditions of life prevailing among negroes, mulattos, and the lower classes generally. Dysentery shows

large in the returns from Pernambuco, and beri-beri in Bahia, the latter being, as ever, mysterious in its attacks in the north-east of Brazil. 10 per cent. of the deaths in St. Louis do Maranhão were from beri-beri in the year 1906. Bubonic plague may be regarded as endemic in most of the big cities, Rio, Bahia, Pernambuco, and Pará having each been infected in the course of 1908. There is, however, an unmistakeably steady decrease in this respect in the figures for Rio, which is able to show a decline of mortality from plague from 48.05 per 100,000 inhabitants (or a total of 360) in 1903 to 8.65 (or a total of 73) in 1907. Leprosy and goitre are still to be found in the State of Minas Geraes, the former sporadic and the latter confined to certain negro communities, due possibly to the water and the absence of lime, which is a feature in the geological formation of the greater part of Brazil. Diseases of the digestive organs figure largely throughout the country, these being due in a great measure to the consumption of raw or improperly cooked manice flour. The negro is susceptible to many diseases to which the white man is, comparatively speaking, immune, and it is he who swells the death returns, his numbers becoming gradually decimated in consequence. The following comparisons, taken from the mortality returns of Rio for 1907, will be interesting in this respect:—

						Deaths per 1000		
Africans				 	 	 	168.96	
Spanish Americans				 	 	 	26.25	
Brazilians				 	 	 	21.31	
British				 	 	 	9.08	

The death-rate of many cities, moreover, is also raised by outside patients coming in from the country to the hospitals for treatment and having the misfortune to die there. The highlands of Brazil are extremely healthy, and much of the sickness which at present prevails will doubtless be avoided as time goes on and the prophylactic measures of the capital are extended. Medicinal plants are to be found distributed in the greatest variety throughout the whole of Brazil.

THE USE OF OXYGEN IN WHOOPING-COUGH.

In very grave cases of whooping-cough, where danger is indicated by extraordinary violence and prolongation of the paroxysms with or without indications of commencing broncho-pneumonia, Dr. Weill, clinical professor of children's diseases in the University of Lyons, has been for some years in the habit of using inhalations of oxygen, and finds this treatment, though not invariably successful, far preferable to antipyrin or morphine. The violence of the paroxysms is lessened, though their frequency may not be diminished, the cyanosis disappears, and the child is far less exhausted during the intervals. He says that signs of broncho-pneumonia usually clear up under this treatment. Considerable quantities of oxygen, say 10 or 12 litres, should be given from the commencement of each paroxysm through a funnel-shaped mouthpiece, and if there is any pneumonia this dose should be repeated hourly even while the child is asleep. In one very alarming case where antipyrin and morphine had both failed the child's life was saved by the inhalation of from 400 to 500 litres of oxygen. These observations were published in La Semaine Médicale of Sept. 15th.

"DR. GUILLOTIN."

To the Editor of THE LANCET.

SIR,-A considerable quantity of documents and letters throwing fresh light on the French Revolution have been discovered in Paris in the course of recent years, material that was not known when Carlyle described the events of that social cataclysm. The instrument of death called with grim drollery the "National Razor" and the "Certain Cure for Headache" will be associated for all time with the name of a worthy and humane physician. In truth, Dr. Ignace Joseph Guillotin had nothing whatever to do with the machine which, in the words of Michélet, conferred on him "une gloire macabre et néfaste." Dr. Guillotin welcomed the Revolution and became a member of the Jacobin Club and of the Constituent Assembly. In the tribune of the latter body he proposed that in the new era that had dawned decapitation should always be the mode of inflicting the death penalty in France—meaning execution by the axe. Having made this proposal he quitted public life for ever and devoted himself to the exercise of his profession. The Assembly adopted Dr. Guillotin's proposal and gave it a sinister amplification. An ex-army surgeon, Dr. Antoine Louis, was asked to design an instrument which should cut off a man's head automatically and instantaneously. Dr. Louis, assisted by a German mechanician, promptly produced a decapitator fulfilling the prescribed conditions, and which was known for the first few months as "La Louisette," but so many French people bearing the prenomen or cognomen of Louis or Louise hastened to change their names that the Government decided that the new machine should be called "La Guillotine."

Dr. Guillotin lived in a small street leading out of the Rue St. Honoré and passed safely through the perils of the Terror, the Directory, and the Consulate, dying in 1814, aged 76. It is perhaps not without interest to state that some of the prescriptions written by Dr. Guillotin may be examined in Paris by the curious. For one patient he prescribed a mixture of "rhubarbe" and "sel de Glauber"—by no means a bad combination! According to the testimony of an intimate friend, he never ceased to deplore the hideous immortality thrust upon him.

Some of the records that have lately been disinterred from musty

archives and the lumber room are exceedingly curious. A dyspeptic young man had received the sound medical advice to eat toast instead of ordinary bread, and to spare himself the inconvenience of attending at the baker's shop every morning at 4 A.M. he arranged to receive a week's supply of toast at one time. Unfortunately for him an unexpected domiciliary visit by the police revealed the presence of a quantity of toast in a cupboard—to be precise, there were 13 pieces. The discoverers were aghast with horror. Here was evidently an aristocrat endeavouring by subtle and diabolical means to create a famine in Paris. He was haled before the Revolutionary Tribunal on this charge, tried, con victed, and executed on the same day.

I am, Sir, yours faithfully,

Worthing, Oct. 18th, 1909.

WATKIN W. JONES.

SOME SCIENTIFIC CATALOGUES.

THE Cambridge Scientific Instrument Company has recently published a revised edition of its catalogue dealing with the Cambridge Rocking Microtome, and anyone concerned in the equipment of a physiclogical or histological laboratory will do well to obtain the pamphlet. It contains a complete description of the rocking microtome, which has now been in use for nearly 25 years. The imbedding of tissues in paraffin to admit of their being cut into sections of but a few micromillimetres in thickness has been productive of a wealth of histological and embryological knowledge, and probably all who have worked with a Cambridge "rocker" will allow it the great merits of rigidity, simplicity of design, and accuracy of result, qualities which fit it well for general laboratory and class work. The design of the instrument is too well known to microscopists to need renewed description, and others who desire to become acquainted with it will be well advised to obtain the present catalogue from Cambridge. A list has also reached us from Messrs. H. F. Angus and Co., of 83, Wigmore-street, W., who supply all descriptions of accessories for microscopical work, including the many stains put up in the laboratory of Dr. G. Grübler of Leipzig. Another pamphlet before us comes from France, being issued by Mr. A. Helmreich, electrician, of Nancy. It describes an apparatus invented by Dr. Miramond de Larognette and described as a "radiateur photo-thermique," which is devised to apply light and radiant heat baths to any part of the body. The pamphlet gives a short account of the indications for this kind of therapy, and then proceeds to describe the apparatus which consists of a hollow metal drum bisected, the halves being hinged together so as to form two valves, which can be opened to admit the shoulder, arm, leg, hip, side of the thorax, or any other part of the body. In each valve are three electric lamps. If it is desired to apply heat to the abdomen or spine the valves are completely opened and the instrument laid flat against the body. The pamphlet is fully illustrated and the apparatus which it describes appears to be a useful and portable appliance for the administration of radiant treatment.

AN INTERESTING PHENOMENON.

To the Editor of THE LANCET.

SIR,—I find there are people who, on closing their ears carefully with their fingers, can receive *vocalisations* within their heads—directing, answering, or commenting. I should be glad to know the physiology and explanation of the phenomenon.

I am, Sir, yours faithfully,

Oct. 12th, 1909.

GENERAL PRACTITIONER.

*** This observation is well known to otologists and appears to be due to unusual penetration and perception of sound. We do not know that the physiology of the occurrence has been made the subject of special study. An instrument is now made which enables observers to eliminate this source of error when testing the hearing, especially in cases of unilateral deafness.—Ed. L.

MERCK'S ANNUAL REPORT.

We have received a copy of E. Merck's annual report (1908, Vol. XXII.) of recent advances in pharmaceutical chemistry and therapeutics which is always worth having and keeping since it is a valuable source of reference to recent advances in therapeutics and pharmacology. Not the least advantage about it also is that the chapter and verse in regard to the original papers on the subject are given. We understand that medical men may obtain a copy gratis from the London office (16, Jewry-street, E.C.). The edition, however, is a limited one. The volume contains 348 pages of literary matter, and reading it is certain to repay the practitioner.

THE JUBILEE OF THE CRANLEIGH COTTAGE HOSPITAL.

In our account of the Cranleigh Cottage Hospital (The Lancet, Oct. 16th, p. 1164) the average duration of stay of patients for the period covered by the last annual report should have been printed as 23.3 days instead of 2.33 days.

T. M. will find in the Students' Number of The Lancet (August 28th, 1909, p. 687) full information with regard to post-graduate work. Announcements are made in our columns from time to time when courses of lectures are delivered which are open to medical men free on presentation of their cards. In the same issue of The Lancet, in

other sections, he will find the names of the dermatological consultants and officers at the metropolitan hospitals. The post-graduate work in London is assisted by the moderate fees of those who take out tickets, but individual hospitals seldom or never charge fees to qualified men who were once their students. With regard to the second question we must consult a veterinary surgeon.

COMMUNICATIONS not noticed in our present issue will receive attention

Medical Piary for the ensuing **CA**eek.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

MONDAY.

ODONTOLOGICAL SECTION (Hon. Secretaries—D. P. Gabell, E. B. Dowsett, J. Howard Mummery): at 8 P.M.

Mr. A. Hopewell Smith: Case of Infective Disease of the Jaws Associated with Absorption of the Teeth.

Casual Communication:

Mr. F. Coleman: (1) Papillomata of the Uvula; (2) Exostoses of the Mandible; (3) The Torus Palatinus.

Presidential Address:

Mr. William Hern.

TUESDAY.

MEDICAL SECTION (Hon. Secretaries—A. M. Gossage, A. F. Voelcker): at 5.30 p.m.

Dr. Robert Maguire: On Oxaluria and the Treatment of Calcium Oxalate Deposit from the Urine, with a Method for the Solution of Calcium Oxalate Calculus whilst in the Urinary

NEUROLOGICAL SECTION (Hon. Secretaries—E. Farquhar Buzzard, Wilfred Harris): at 8.30 p.m.

Presidential Address:

Professor Sherrington, F.R.S.

FRIDAY.

BALMEOLOGICAL AND CLIMATOLOGICAL SECTION (Hon. Secretaries—Septimus Sunderland, F. A. de T. Mouillot): at 6 P.M.

Dr. Leonard Williams: To Redress the Balance.

Dr. Eyre : The Hygiology of Naples

N.B.—Fellows of the Society are entitled to altend and to speak at all Meetings.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish

MONDAY.—8.30 P.M., Dr. F. W. Hewitt: The Need for Legislation in Regard to Ansesthetics and the Lines upon which it should take

MEDICO-LEGAL SOCIETY, 11, Chandos-street, Cavendish-square,

TUESDAY.—8.15 P.M., Sir John Tweedy: Presidential Address.— Dr. F. G. Crookshank: Notes on the Post-mortem Examination of Bodies found in the River.

HUNTERIAN SOCIETY, 17, Finsbury-circus, E.C.

WEDNESDAY.—8.30 P.M., Clinical and Pathological Evening.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchbornestreet, Edgware-road, W.

Thursday.—8.30 p.m., Discussion on the Influence of Mind as a Therapeutic Agent (opened by Dr. C. Shaw).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c. ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn

MONDAY.—5 P.M., Prof. S. G. Shattock: Adenoma and Papilloma. (Museum Demonstration.)

FRIDAY.—5 P.M., Prof. A. Keith: Specimens illustrating Malformations of the Abdominal Wall and Irregularities in the Pixation of the Viscera. (Museum Demonstration.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. T. P. Beddoes : Clinique (Skin). 5.15 P.M., Lecture :—Dr. D. Grant : Some Complications of Nasal Sinus Disease

TUESDAY.—4 P.M., Dr. N. Pitt: Clinique (Medical). 5.15 P.M., Lecture:—Sir John Broadbent, Bart.: The Prognosis and Etiology of Mitral Incompetence.

MEDIFEDAY.—4 P.M., Mr. M. Collier: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. C. Riviere: Notes on Tuberculin Treatment.
THURBDAY.—4 P.M., Sir Jonathan Hutchinson: Clinique (Surgical).
5.16 P.M., Lecture:—Dr. F. J. Smith: On the Examination of the Person.

FRIDAY.-4 P.M., Mr. H. Tod: Clinique (Ear).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-

MONDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. Mr. Dunn: Diseases of the Ryes. 2.30 P.M., Operations. X Rays. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery.

Lecture:—Mr. Baldwin: Practical Surgery.

TUESDAY.—10 A.M., Dr. Moullin: Gymacological Operations.

12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M.,

Medical and Surgical Clinics. Dr. Davis: Diseases of the
Throat, Nose, and Ear. 2.30 P.M., Operations. X Rays. Dr.

Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr.

Pritchard: Clinical Pathology.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children.

Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 P.M.,

Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical

and Surgical Clinics. Mr. B. Harman: Diseases of the Byes.

2.30 P.M., Operations. X Rays. Dr. D. Robinson: Diseases of
Women. 5 P.M., Lecture:—Dr. Beddard: Medicine.

Thursday.—10 A.M., Lecture:—Surgical Registrar: Demonstration

THURSDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. Mr. Dunn: Diseases of the Kyes. 2.30 P.M., Operations. X Rays. 5 P.M., Lecture:—Dr. Davis: Common Diseases of the Nasal Cavities and the Pharynx.

FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations, Medical Registrar: Demonstration of Cases in the Wards. 2 P.M., Medical and Surgical Clinics. Dr. Davis: Diseases of the Throat, Nose, and Rar. 2.30 P.M., Operations. X Rays. Dr. Abraham: Diseases of the Skin. Dr. D. Robinson; Diseases of Women. 5 P.M., Lecture:—Dr. G. Stewart: Peripheral Neuritis.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Mr. R. Harman: Diseases of the Eyes. Dr. Davis: Diseases of the Throat, Nose, and Bar. 11.30 A.M., X Rays. 12.15 p.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 p.M., Medical and Surgical Clinics. 2.30 p.M., Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

iospital, Greenwich.

Monday.—2 P.M., Operations. 2.15 P.M., Sir Dyce Duckworth
Medicine. 3.15 P.M., Mr. Turner: Surgery. 4 P.M., Mr. R.
Lake: Bar and Throat. Out-patient Demonstrations:—10 A.M.,
Surgical and Medical. 12 noon, Bar and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine.
3.15 P.M., Mr. Carleas: Surgery. 4 P.M., Sir M. Morris:
Diseases of the Skin. Out-patient Demonstrations:—10 A.M.,
Surgical and Medical. 12 noon, Skin.

Wednesday.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor:
Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient
Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Ryc.
3.30 P.M., Special Lecture:—Mr. Cargill: Some Frequent
Mistakes in Ophthalmic Diagnosis.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 2.30 P.M., Special Lecture:—Dr. Rankin: Three Recent Cases of Pleurisy.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford:
Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient
Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
3.15 P.M., Special Lecture:—Mr. McGavin Some Points in the
Surgical Treatment of Chronic Intestinal Obstruction.

Saturday.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NORTH-EAST LONDON POST-GRADUATE COLLEGE. Prince of 'ales's General Hospital, Tottenham, N.

Monday.—Clinics:—10 A.M., Surgical Out patient (Mr. H. Evans), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson). 4.30 P.M., Medical In-patient (Dr. A. J. Whiting).

TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld).
2.30 P.M., Operations. Clinics:—Surgical (Mr. W. Edmunds);
Gynæcological (Dr. A. E. Giles). 4.30 P.M., Demonstration:—Dr.
Meachen: Selected Skin Cases.

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Bye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. H. Pirie).

Thursday.—2.30 P.M., Gynacological Operations (Dr. A. E. Gilea).
Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical
(Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).
4.30 P.M., Lecture:—Mr. H. W. Carson: Perforated Gastric Ulcer.

FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Bye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C. Monday.—4 P.M., Lecture: Dr. G. Holmes: Clinical Anatomy of the Nervous System—The Anatomy of the Medulla Oblongata and Pore Verbuil.

Pons Variolii.

Tuesday.-3.30 P.M., Clinical Lecture: Dr. Batten: Mystonia Atrophica.

THURSDAY.—4 P.M., Lecture:—Dr. G. Holmes: Clinical Anatomy of the Nervous System—The Anatomy of the Medulla Oblongata and Pons Variolii. The Cranial Nerves.

FRIDAY.—3.30 P.M., Clinical Lecture;—Dr. Bac Congenita and its Relations to the Myopathies. Batten: Myatonia

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicestersquare, W.C.

THURBAY.—6 P.M., Chesterfield Lecture:—Paratuberculides (due to Tuberculous Toxins)—I., Macular; II., Papular; III., Pustular; IV., Pigmentary.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W.

Monday.—3 p.m., Clinical Demonstration: Dr. H. Campbell.
Tuesday.—5 p.m., Clinical Demonstration:—Dr. J. Mackenzie.
Wednesday.—3 p.m., Clinical Demonstration:—Dr. F. Palmer.
Teursday.—3 p.m., Clinical Demonstration:—Dr. T. D. Savill.
Friday.—2 p.m., Clinical Demonstration:—Dr. P. Stewart. 5.30 p.m., Clinical Demonstration : Dr. E. Macnamara

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn

Tuesday.-3.45 P.M., Lecture:-Dr. Atkinson: Pharynx and Naso-

FRIDAY. -3.45 P.M., Lecture : - Dr. Abercrombie : Pharynx and Nasopharynx.

OPERATIONS.

METROPOLITAN HOSPITALS.

METROPOLITAN HOSPITALS.

MONDAY (25th).—London (2 P.M.), 8t. Bartholomew's (1.30 P.M.), 8t. Thomas's (3.30 P.M.), 8t. George's (2 P.M.), 8t. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (6 promeological, by Physicians, 2 P.M.), Soho-equate (2 P.M.), City Orthopsedic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.).

St. Mark's (2.30 P.M.).

TUESDAY (36th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middleex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. C. 20 P.M.), London Throat (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Goldensquare (9.30 A.M.), Scho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Ohlidren, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Har (Minor, 9 A.M., Major, 2 P.M.),

Central London Throat and Bar (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (27th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopedic (10 A.M.), St. Peter's (2 P.M.), Samartian 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Bar (2 P.M.), Royal Orthopedic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, ; M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Bar (Minor, 9 A.M., Major, 2 P.M.), St. Thomas's (2.30 P.M.), St. Thomas's (2.

THURSDAY (28th).—St. Bartholomew's (1.30 p.m.), St. Thomas's (3.30 p.m.), University College (2 p.m.), Charing-cross (3 p.m.), St. George's (1 p.m.), London (2 p.m.), King's College (2 p.m.), Middlewst (1.30 p.m.), St. Mary's (2.30 p.m.), Shob-square (2 p.m.), Motth-West London (2 p.m.), Ct. Northern Central (Gynscological, 2.30 p.m.), Metropolitan (2.30 p.m.), London Throat (9.30 a.m.), Samaritan (2.30 a.m. and 2.30 p.m.), Throat, Golden-square (9.30 a.m.), Guy's (1.30 p.m.), Royal Orthopsedic (9 a.m.), Royal Bar (2 p.m.), Children, Gt. Ormond-street (9 a.m. and 2 p.m.), Tothenham (Gynscological, 2.30 p.m.), West London (2.30 p.m.), Central London Throat and Ear (Minor, (9 a.m., Major, 2 p.m.)), St. Bartholomew's (1.30 p.m.), St.

(MIROT, 93 M., MAJOT, 2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Oross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (1° A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-squars (9.30 A.M.), City Orthopsedic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Auril, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor 9 A.M., Major, 2 P.M.).

SATURDAY (30th),—Royal Free (9 a.m.), London (2 p.m.), Middlesex (1.30 p.m.), St. Thomas's (2 p.m.), University College (9.15 a.m.), Obaring Cross (2 p.m.), St. George's (1 p.m.), St. Mary's (10 a.m.), Throst, Golden-square (9.30 a.m.), Guy's (1.30 p.m.), Children, Gt. Ormond-street (9 a.m. and 9.30 a.m.), West London (2.30 p.m.).

At the Royal Bye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

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IT is most important that communications relating to the Editorial business of THE LANCET should be addressed suclusively "To THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTI-FICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or nows paragraphs should be marked and addressed " To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET should be addressed "To the Managor."

We cannot undertake to return MSS. not used.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.) THE LANCET Office, Oct. 21st, 1909.

Date.	Barometer reduced to Sea Level and 32° F.		Rain- fall.	Solar Radio in Vacuo.	Maxi- mum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Oct. 15 16 17 18 19 20 21	29·80 29·70 29·51 29·69 30 00 29·86 29·91	S.W. S.W. S.W. S.W. WSW S.W.	0·19 0·13 0·08 0·29	67 65 73 71 101 67 98	61 62 63 62 63 61 59	51 58 60 56 54 55 53	57 59 59 57 55 55 55	58 60 60 58 56 56 56	Raining Overcast Raining Cloudy Overcast Cloudy Fine

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"TO REDRESS THE BALANCE."

Delivered before the Section of Balneology and Climatology of the Royal Society of Medicine on Oct. 29th, 1909,

BY LEONARD WILLIAMS, M.D. GLASG., M.R.C.P. Lond.,

PHYSICIAN TO THE FRENCH HOSPITAL, SHAFTESBURY-AVENUE, LONDON, W.C.; ASSISTANT PHYSICIAN TO THE METROPOLITAN HOSPITAL, KINGSLAND-ROAD, N.E.

GENTLEMEN, -To the sciences of balneology and climatology it has always been something of a reproach that their use in therapeutics is purely empirical. That, unfortunately, is a reproach the justice of which cannot be gainsaid, and I have thought that I should be doing something to merit the honour which has been conferred upon me in electing me to be the first President of that section of the Royal Society of Medicine which concerns itself with these subjects if I endeavoured in this address to throw some light, however tentative and theoretical, upon the rationale of the methods which we employ-if I attempted, in short, to redress the balance between science and empiricism which has too long shown so decided a bias in favour of the latter.

The science of medicine in general is necessarily so occupied with detail that the constant tendency of its devotees is to miss the broad outlines—we cannot, as the saying is, see the forest because of the trees. In order to obtain a prospect of any value to our present purpose it is essential that we should, in the first instance, at any rate, forget the existence of the trees and make our survey as wide and comprehensive as possible. With this end in view I would first venture to remind you of what, though obvious, is too frequently forgotten-namely, the extent to which man, and more especially woman, is subject to what are called the cosmic influences. It is axiomatic to say that man cannot escape the ascendency respectively of day and night, of forenoon and evening, nor of the cyclical effects of the seasons; and it must be equally apparent to the seeing eye that the lower down in the evolutionary scale we descend the more completely do we find him the slave of these silent, immutable, and relentless forces. So subject, indeed, is primitive man to these cosmic influences, so completely does he hibernate and otherwise conform to the cosmic laws, that the phases of his life sink almost to the level of the alternation of generations which characterises certain insects. higher in the scale he ascends the more independent of these influences does he become, until he arrives at the high state of civilisation in which, so long as his health is preserved. he may be considered as practically beyond their sway. Here I may pause to point out one of the many reasons why woman is, and always must be, essentially and indefeasibly inferior to man, namely, because she is, by reason of her very womanhood, the docile slave of a lunar monthly revolution, from whose tyranny she can never escape.

So long, then as civilised man retains his health he can afford to disregard these cosmic influences. He may defer the principal call upon his digestive powers to the hour when his frame is exhausted and the sun is set; he may do his best work in the night season; he may labour in winter and in summer play; these and other gauntlets of defiance he may cast with impunity in the teeth of the cosmos-but only so long as his health is maintained. No sooner does he fall a victim to disease than he becomes once more the puppet and plaything of the cosmic powers. Obedient to the rhythm of twilight and dawn, his temperature rises by night and falls by day; the hour of sunset enwraps and constricts him as it would a flower, and by the powers of darkness, like a little child, he is dismayed. Though we cannot explain these subtle and ubiquitous agents we are nevertheless obliged, all of us, to submit to them, and the wise amongst us are those who recognise them and turn them to account.

The same may be said of climatic influences. 1 These are, after all, but a subsection of the cosmic influences which become invested with additional weight and added subtlety

¹ Dr. Gaston Sardou: Revue de Médecine, Jan 10th, 1907, L'être Vivant et les Variations du Milieu Extérieur. No. 4498.

when we consider that they include the factors of heredity and environment—the factors, that is, which indelibly stamp upon races, nations, families, and individuals the characteristics which distinguish them from one another. The importance of the part which climatic influences have played, are playing, and are about to play, in the evolution of man towards his higher destiny it is impossible to overlook and would be difficult to overstate. The differences between the white man and the black, between Asiatics and Europeans, between the Latins and the Saxons, between the northerner in each nation and his not far distant southern brother, are admittedly and even obtrusively climatic in origin. Indirectly climatic, through heredity, is the persistence of these differences through every change of individual milieu, and directly climatic are the modifications which change of milieu imposes upon families and races. In illustration of this last point I need only mention the fair skin and the red hair which long residence in northern climes has conferred upon some Jewish families and the stereotyping by the climate of the North American continent of the descendants of the motley crew of its widely dissemblant annual European recruits into the hatchet-shaped face and wiry frame of the Red Indian aborigines. The mills of God grind slowly, but they grind exceeding small, and anyone who will study the effects of the climatic factor in determining racial differences will have no trouble in persuading himself of their reality nor of their inexorable and eternal

When we take the cold and cosmic northern Scot-cosmic only because we are supposing him to be an invalid—and transport him to the shores of the Mediterranean, we are tearing him from the environment which, acting through countless generations, has made him what he is: fair of skin, and of temperament cautious, taciturn, slow, in order to subject him to the environment which, acting through the same period of time, has produced his antithesis, the typical méridional, swarthy, impulsive, voluble, quick. Such a change must obviously involve an alteration in the man's whole being. The nature, as well as the force, of the stimuli to which he normally reacts are changed, and every cell in his body experiences sensations so new as in their sum to amount to a revolution. We have only to consider that his altered environment would in a few generations transform this Scot into that Italian to realise the ferment, one might almost say the chaos, which this sudden transplantation must effect upon the workings of his internal economy. It is as if we were suddenly to place a seaweed in a greenhouse.

We are as yet unacquainted with, we can at best vaguely conjecture, which it is amongst the various elements which go to form what we call climate that takes the leading part in producing or initiating changes so profound. A great French climatologist when asked, "What is climate?" replied, "Humidity." This is true, but in a limited sense only. It is true that humidity supplies the keynote to the subjective effects of climate and therefore to its immediate results (a climate, for example, is sedative or bracing, according to whether its humidity is high or low), but it is not true of its remote or permanent effects. Of humidity it cannot be said that it affords any explanation whatever of the racial and national distinctions which have just been touched upon, distinctions of which, if they are to teach us anything, climatic considerations must take full and explicit cognisance.

To contemplate these distinctions is to be immediately struck by the paramount part played by the element of colour. The widest differences in the degree of dermic pigmentation are associated with the most striking diversities in other directions, osseous, nervous, intellectual, temperamental, and it is not unreasonable to suppose that the factor which produces the one should be to some extent responsible for the others. This factor is admittedly the influence of the sun, to which we may accordingly look for some assistance in explaining the complicated phenomena with which we are at present concerned. To read the riddle of the sun as it affects human beings is a task as much beyond my compass as it is beyond my powers, but this at any rate I would venture to say of it—that the key to that riddle, if it is ever to be found, must be sought primarily in the large, important, and unduly neglected organ which we call the skin.

The functions of the skin, we are told, comprise protection, sensation, secretion, heat-regulation, and respiration. A little consideration will, I think, suffice to persuade us

that it is endowed with at least one other, and that other no less important than any of the foregoing. amount of pigment in the skin varies directly with the degree of sunlight to which its wearers are exposed. A large amount of pigment is thus obviously protective, and the question which immediately arises is, "Protective of what?" Of mere sensation it cannot be: first, because the skin in its power of developing callosities and increasing the growth of hair is already adequately protected in that direction; and, secondly, because ordinary sensation being so unevenly distributed over the integument we should expect the protective pigment to be patchy, even as the protective callosities and protective hairs are patchy, in their distribution. In order to explain the uniformity of pigmentation we must find some function of the skin as a whole which demands protection from the excessive action of the sun's rays, and this, it seems to me, can only be done by investing the integument with the properties of a sensitive plate, stimulation of any portion of which will produce reflex activities in some distant organ. Such a conception has the merit of illuminating some obscure places, and serves in a measure to explain some of the phenomena upon which we are engaged. The pigmentation itself being merely protective, the variations in its degree would necessarily be accompanied by variations more or less constant in other directions, and this we know to be the case. The integument thus becomes the receiving plate for stimuli which are carried to organs which preside over modifications of structure, and of these organs certainly the most important are those glands, the thyroid, the suprarenals, the pituitary, the testicle, and others, the study of whose internal secretions has recently opened up such a wide and fascinating field for physiological inquiry. So far as their importance in the matter of external conformation is concerned, I need do no more than refer to the consequences of the absence of thyroid secretion in the causation of cretinism and most forms of infantilism, and to the responsibility of the pituitary for acromegaly and most forms of gigantism. That cutaneous stimulation provokes a corresponding stimulation of these internal secretory glands, and that one, at any rate, of the purposes of pigmentation is to protect these glands from an excess of such stimulation—such is the view which I am venturing to suggest to you. The considerations in support of this view are many, but time compels me to limit myself to a few only.

It is well known that the white man cannot live for more than a generation or two in the tropics, and it is equally well known that the black man cannot live for more than a generation or two in the temperate zone. In the one case this is due to excessive stimulation from which the fair skin is unable to protect the internal secretory glands; in the other it is due to inadequate stimulation; the feeble and infrequent sun's rays cannot penetrate the pigmented skin in a degree sufficient to keep the glands up to the level of their normal activities. In each case individuals may survive, families very seldom, and races never. It is significant that the individuals among the whites who most successfully adapt themselves to tropical conditions invariably develop a degree of pigmentation which in some cases is truly surprising, and it is pertinent to note that disorders of the internal secretory glands, the suprarenal, the thyroid, and the ovary, are generally characterised by abnormalities of dermic pigmentation.

If, now, we bring the argument down to a particular case and consider the effects of climate upon one of these internal secretory glands, the thyroid, we shall find that the subjects of thyroid insufficiency, as evidenced by rickets, adenoids, noctural enuresis, simple goitre, and some forms of chronic arthritis, preponderate enormously in the temperate zone, and especially in those parts of the temperate zone which are characterised by a cold, damp climate, which is another way of expressing a climate which is conspicuously devoid of sunshine. The same diseases, and others which are almost certainly the results of the insufficient defensive action of these internal secretory glands, are known to occur with obstinate frequency in the poorer populations of the great cities—populations, that is, whose unfortunate state deprives

them of many things, but especially, and markedly and perennially, of the influence of the sun's rays.

I am, however, very far from wishing to suggest that solar stimulation is the only form of stimulation which, acting on the cutaneous sensitive plate, is capable of keeping the glandular secretions at the level of their optimal activities and their normal interbalance. I have little doubt, for example, that the action of the air itself when allowed to reach the integument plays an important part in this matter, and that the preposterous habit of wearing flannel next the skin, which is so common among the inhabitants of cold, damp climates, inasmuch as it prevents the air from coming in contact with the cutaneous surface, is responsible for much of the physical and mental degeneracy which characterises those who descend to this practice.

We may obtain some further support for the view which I am suggesting by considerations drawn from another branch of our work, namely, balneology. And by balneology I must be understood to include massage, heat, light, and the other accessories to balneary treatment proper, of which the spa physician rightly avails himself.

About the year 1840 an ignorant and illiterate Silesian peasant of the name of Priessnitz attained to world-wide reputation as a healer of all forms of disease, acute and chronic, specific and metabolic, medical and surgical, by the employment of methods which we now call hydrotherapeutic. The undoubted success of these methods, more especially in certain classes of disease, led to their study and investigation by serious physicians in Germany and elsewhere, with the result that they have gradually been placed upon a scientific footing. And yet not quite. Much has been done to sift the corn from the chaff, to provide indications and contra indications, to devise improvements and discard superfluities, but up to the present no one has succeeded in offering any acceptable explanation as to the physiological paths by means of which these results are obtained. One, in the pride of his ignorance, will assert that it is all due to change, another that it is the flushing effect of concomitantly ingested waters, a third that it is all a question of suggestion. It is not necessary to take these so-called explanations seriously, and I mention them only for the purpose of pointing out that they contain that element of half-truth which is ever the worst travesty and the greatest enemy of the whole truth. The problems which await solution are serious problems, which cannot thus summarily be brushed aside. We have to explain, and until and unless an explanation is forthcoming, we must continue to suffer the reproach of empiricism to which I referred at the outset; we have to explain, I say, how it is that substantially the same methods of treatment influence such diverse maladies as rheumatism, scrofula, anæmia, neuralgia, obesity, cardiac insufficiency, renal inadequacy, hepatic inadequacy; and even such mutually exclusive diseases as gout and rheumatoid arthritis. The balneary procedures which are employed in these cases are very properly subject to considerable modifications according to the type of invalid and the nature of his malady, but they have, at any rate, this one great feature in common, that they stimulate the cutaneous To say that this stimulation of the cutaneous surface. surface acts by increasing metabolism does not advance us much further, for it does not explain which of the functions of the skin it is which is instrumental in effecting the alteration in the blood-plasma, which is surely the method by which the improvement is ultimately brought about. If, as I have already suggested, we invest the skin with the functions of a sensitive plate receiving impressions, solar, aerial. tactile, thermal, from without, which it transmits as stimuli to the internal secretory glands, the thyroid, the suprarenal, the pituitary, and their congeners, we have at once the key to that improvement in the state of the blood-plasma upon whose cardinal importance in all matters metabolic Dr. Harry Campbell 7 rightly insists.

That we do not know very much about the action of these internal secretions is all too true. We know something about each of them individually, perhaps, but we know little or nothing about the factor in the situation which is in all probability the most important—namely, the interdependence of these secretions and the result of upsetting their normal relations to one another. The difficulties which are liable to

Marfan: Le Rachitisme, Le Semaine Médicale, Sept. 18th, 1907.
 Leonard Williams: Adenoids, Nocturnal Enuresis, and the Thyroid Gland (Bale and Sons).

⁴ Ibid.
5 Batty Shaw: Organotherapy, p. 64.
6 Nathan: American Journal of the Medical Sciences, June, 1909.

⁷ Harry Campbell: The Rôle of the Blood Plasma in Discase, THE LANCET, Feb. 2nd, 1907, p. 313 et seq.

occur at the menopause afford some clue to the importance of this side of the question, but precise information is wanting. The materials at hand are nevertheless sufficient to afford us some assistance. What we know of the thyroid, for example, amply suffices to raise our estimate of its tribute to the blood-plasma to the level of one of the most essential of the many important constituents of that complex fluid. Its complete absence means cretinism in infancy and myxœdema in adult life; that we know, but we are only just beginning to realise the effects upon the organism when this internal secretion, though present in sufficient amount to protect us from these gross and obtrusive diseases, is nevertheless so diminished as gravely to interfere with the normal metabolic processes. I venture to suggest that investigation in this difficult, but highly attractive, field would reveal the fact that many of the diseases which we now regard as having nothing in common except their amenability to balneary therapeutics would be found to be the dissimilar children of the same parent, and that parent thyroid inadequacy.

To illustrate this point, I select the example to which I have already referred—namely, that two diseases which are to all appearances mutually exclusive, namely, gouty arthritis and rheumatoid arthritis, may in some measure at any rate be brought within the same category by regarding them both as due to perversion or insufficiency of the internal glandular secretions. Of rheumatoid arthritis it is necessary that I should premise that I regard the condition so described as liable to be provoked by a great number of causes, that it is in fact not so much a disease as a symptom, and it is therefore necessary that I should specify what in the present connexion I include under this name. The variety to which I wish to refer is that which occurs with such frequency in women at or about the menopause, the variety, that is, to which Nathan has given the name of metabolic osteoarthritis. That this is due to a disturbance of the interrelation between the internal secretions is obvious, and is indeed admitted by all recent investigators; that it is due to a failure of activity on the part of the thyroid is a thesis which has been sustained by numerous observers. in France, and recently very ably by Dr. Ménard of Paris; 10 that clinical results strongly support this pathology of the affection is evidenced by the decided amelioration which ensues from the exhibition of thyroid extract, a matter to which I can add the testimony of my own experience.

In the case of gouty arthritis not only do we find it in subjects who bear the stigmata of thyroid inadequacy, the subjects, that is, of premature baldness, of neuralgize of all sorts, of constipation, but the disease is admittedly one of inadequate metabolism. Now conditions of inadequate metabolism cannot co-exist with a normally acting thyroid, for again, to quote from the elegant and attractive writings of Dr. Harry Campbell, 11 "The thyroid secretion plays the part of a bellows, causing the vital fire to burn more fiercely." Moreover, the admitted causes of gout. an fiercely." Moreover, the admitted causes of gout, an excess of meat foods and alcoholic drinks, are likewise admitted as poisons which gravely depress the functions of

Here, then, are two diseases which, though widely dissimilar in many, and perhaps in the most important, respects, have nevertheless three points in common: both are characterised outwardly by an arthritis, which affects the same joints in much the same manner; both can be shown, and have been shown, to be accompanied by an insufficiency of thyroid secretion; and in both stimulation of the skin by baths, douches, heat, light, produces an amelioration which experience proves to be beyond all question or cavil. There seems to be no escape from the conclusion that, so far as the arthritic element is concerned, the responsibility must rest with the thyroid, nor that the amelioration which all concur in conceding to the balneary procedures is brought about by the stimulation of that gland.

Before leaving the question of the thyroid there are some other facts to which it seems pertinent to refer. The first of these is that since the discovery of radio-activity every spa in Europe has been busily engaged in demonstrating that its

Another point of interest in this connexion is furnished by the relation of the thyroid gland to the salts of calcium. It is known that one of the functions of the gland is to fix these salts in the body, and further investigations into the matter have shown, as indeed one would expect, that the exhibition of these salts stimulates thyroid activity. One of the first signs of increased thyroid activity is diuresis, and I may mention parenthetically that when I was a practising balneologist I learned to gauge the measure of the ultimate success of my prescriptions by the degree of urinary activity which they evoked. Now, in the matter of ingested waters, it has always been difficult to understand why it is that the renal spas, Contrexéville, Vittel, Martigny, Evian, Wildungen, whose waters, chemically, contain nothing more diuretic than small quantities of calcium salts, should nevertheless have the power which they undoubtedly possess of provoking a very largely increased urinary output. In the light of the above-mentioned facts it is evident that this power is derived in a large measure from the stimulation of the thyroid gland which these calcium salts excite.

Of interest also in association with the thyroid gland are those spas which lay claims to the cure of sterility in women. These claims are strongly supported in too many instances to permit of reasonable doubt as to their justice, and Franzensbad, Kreuznach, Rheinfelden, Schinznach, Eaux Bonnes, St. Sauveur, and Salies de Béarn, to mention a few only, all enjoy a reputation in this direction which is unquestionably well founded. Some of them, indeed, include instances which are historical. But here, again, the causative factor has always remained a mystery. Where local douches are employed it is easy to understand that they may be helpful; but then, not only may local douches be employed at home, but local douches were unknown at many of these spas until long after their reputation in the cure of sterility had become firmly established. They have, however, all of them made a special feature of general baths, general douches, and the other methods of stimulating the cutaneous sensitive plate, by which means I suggest that the internal secretory activities are evoked. That it is the thyroid which is chiefly appealed to by such means is rendered probable by the very conspicuous involvement of the skin and its appendages in myxœdema and in degrees less pronounced of thyroid inadequacy. That the thyroid is a gland whose activities are essential to pregnancy is well known, 12 for one of the most efficient means of treating sterility is by properly regulated thyroid treatment, 13 and the reason for this was provided by Gaskell 14 when he showed that the thyroid gland of vertebrates is derived from the uterus of the palæostracean ancestor.

From consideration of the thyroid, too, we may obtain much instructive information concerning another subject which looms large in the purview, not only of every health resort physician, but of every practitioner of medicine, a subject of which it is safe to say that more nonsense of a pseudo-scientific kind has been written than upon any other topic in the whole range of medicine—I mean diet. neither the time nor the place to embark upon a discussion of the matter, but this, at any rate, I am prepared to assert, that the explanation of all the numerous meat-excluding dietaries is based on the fact that their apostles and disciples suffer from diminished activity of the thyroid gland upon which meat foods are known to act so as still further to diminish its activity.

But while thus drawing some illustrations from the thyroid gland, I must not be understood to suggest that this is the only secreto y organ which is stimulated by the various methods under consideration. Such a narrowing of the issue is very far from my intention. The other glands which we include in the same category are probably of at least equal importance, but the available facts concerning

waters contain a certain measure of this peculiar unknown property, quite irrespective of the results which may ultimately be shown to attach to the exposure of the human body thereto. Now, out of the chaos of hypothesis, romance and heroics, which have already encrusted the subject, one fact, and one fact only, has so far emerged, and that is the fact established by a French observer, to the effect that radio-active waters produce an enlargement of the thyroid gland.

R. Llewelyn Jones: Arthritis Deformans, p. 227 (John Wright).
 Léopold-Lévi and H. de Rothschild.
 Origine Thyroidienne du Rhumatisme Chronique Progressif et Deformant, Thèse de Paris, 1908 (Baillière).
 Harry Campbell: The LANGET, May 24th, 1902, p. 1486, et seq.

¹² Cardiopathies of the Menopause, Clinical Journal, March 3rd, 1909. 13 liertoghe.
14 The Origin of the Vertebrates, p. 216.

them are at present scarcely such as to lend themselves to illustration. A few, nevertheless, there are.

To return for a moment to the question of dermic pigideals are less and less in the direction of curing disease, for

mentation, to which I referred at the outset, it is obvious that, judging from pathology, it is to the suprarenals that we must look for the greatest power in this direction. It is well recognised that when these glands are profoundly disturbed, as in Addison's disease, the fairest of northern skins is made to assume the dusky tint of the mulatto. But the suprarenals do not bear the sole responsibility for pigmentary activity. We know that utero-ovarian disturbance may produce chloasma and that Graves's disease and rheumatoid arthritis are almost invariably accompanied by abnormal pigmentary phenomena. Nor is it, in truth, necessary to interrogate pathology on this subject, for physiology is ready with an illustration which is sufficiently striking. The blood, which we know to be manufactured in some of these internal secretory glands, has a pigment peculiar to itself, and significantly enough its colour is precisely that which is employed by the photographer in order to protect his sensitive plate against the action of the actinic rays of the sun. That one at any rate of the purposes of the red corpuscles is to afford a similar protection to some of the internal organs must be perfectly obvious to anyone who considers the matter. 15

But it is useless to multiply instances of the association of individual internal secretory glands with the subjects with which we are engaged, for I regard as infinitely more important to a true appreciation of the whole question a realisation of the power which these glands exercise over one another. That they stand to one another in a position of physiological antagonism, and that the smooth and sufficient working of each is essential to the prevention of excess or perversion in one or some others, and thus to the plasmic equilibrium of the whole body, is now well recognised by all observers in this field.¹⁶ This reciprocal action of the various internal secretions, this interglandular synergy—the process, that is, by which each contributes its due share, and neither more nor less than its due share, to the blood plasma-constitutes a factor of the utmost importance in the production and maintenance of what we call health, the condition which all can appreciate but none can define. And in my desire to emphasise this aspect of the matter I would venture even further, and suggest to you that in the exact proportional representation of these glands in the individual economy is to be found the secret of those subtle yet salient differences of character and temperament which distinguish the man of action from the man of thought, the scientist from the poet, the ascetic from the voluptuary. That cosmic influences determine the production of certain of these types is suggested by the fact that so many of any particular type tend to appear on the world's stage at about the same time, as witness the Augustan and Elizabethan periods in literature, the Napoleonic in men of action, and the Victorian in men of science; and that climate may have a determining voice in shaping the cosmic influence is rendered probable by the fact that a large proportion of the great men of any particular epoch are drawn from the same country. It is a fascinating, even though it be a futile, speculation to think that with a little more of this internal secretion or, perchance, a little less of that, General Boulanger might have been a Cæsar; that with an infinitesimal difference in the admixture of these clusive essences Charles II. might have been a Puritan. A more practical application of the same idea, more especially having regard to Gaskell's work on the thyroid, is that the determination of sex in the fœtus may be found to be governed by internal secretory considerations.

But to return to the questions of climatology and balneology, from which I have already too widely strayed, it might conceivably be urged that inasmuch as the pharmacist supplies us with reliable preparations of these internal secretory organs, the practice of balneary and kindred procedures will ultimately become displaced by organotherapy. This is a proposition which I find it very difficult to accept. If it is possible to foretell anything about the future of medicine, it is surely safe to predict that in moving away

following an orderly scientific evolutionary movement. Our ideals are less and less in the direction of curing disease, for in its presence, when once established, we realise that we are for the most part merely enlightened onlookers, and our endeavours tend in consequence more and more in the direction of preventing, evading, and forestalling disease. It is our aim rather to correct nascent or acquired tendencies than to cure established ills, and when we have succeeded in educating the public to this view of our mission, the day of the climatologist, and perhaps more especially of the balneologist, will be at hand. Of the medical triumphs of the immediate past, the most conspicuous and encluring are those which have been won in the field of public prevention, and it is my firm belief that the most conspicuous triumphs which await us in the immediate future will be won in the field of individual preven-In this field the most effective weapons are those tion. which we are here to study, to advocate, and, if need be, to defend; and so long as we pursue our ideals in the true spirit of scientific inquiry, so long will this section of the Royal Society of Medicine continue to increase in prosperity and to advance in dignity, in worth, and influence.

THE NEED FOR LEGISLATION IN REGARD TO ANÆSTHETICS, AND THE LINES UPON WHICH IT SHOULD TAKE PLACE.*

By FREDERIC W. HEWITT, M.V.O., M.A., M.D. CANTAB.,

AN.ESTHETIST TO H.M. THE KING; PHYSICIAN-ANÆSTHETIST TO ST, GEORGE'S HOSPITAL; CONSULTING ANÆSTHETIST AND EMERITUS LECTURER ON AN ESTHETICS AT THE LONDON HOSPITAL; LATE ANÆSTHETIST AT THE ROYAL DENTAL

I AM glad to have this opportunity of tendering my best thanks to the Council of this society for the honour they have done me in suggesting that as a visitor I might bring before you the important question of the desirability of legislation in regard to anæsthetics. You will, I am sure, realise that this question has a far wider range than at first sight appears, for it is intimately associated with that greatest of all questions to our profession—the suppression of unqualified practice in general. I do not propose to enter into the causes which have led up to the unsatisfactory state of the department of practice with which I am about to deal. The phenomenal advances which have taken place in surgery proper during the past 30 years have left the problem of safe anæsthesia in the background, and it is only quite recently that a movement has been inaugurated to give this problem the prominence it deserves. Whatever means be chosen to prevent pain during a surgical operation, be it one of the greatest magnitude or one of so-called minor importance, the administrator of the anæsthetic takes upon himself two responsibilities. The first of these is towards his patient, whom he should provide with safety and comfort during what must always be an unpleasant ordeal; the second is towards the operator, whom he should provide with the best possible local conditions for the particular operation. Speaking generally, I would submit that the importance of the anæsthetic as a factor in surgery is not sufficiently realised. Day after day the public mind is perturbed by announcements of deaths under anæsthetics, and yet no united efforts are made to reduce the distressing mortality from these agents. That the mortality can be reduced I most unhesitatingly affirm. I believe, indeed, that had a proper share of attention been devoted to anæsthetics when modern surgery first took form, thousands of human lives would have been saved, and what is almost as important for the future progress and scope of surgery, the acute public alarm which now prevails with regard to anæsthetics, and which obviously is limiting the beneficent work of our profession, would never have become established. And

 ¹⁵ Watkins-Pitchford, Brit. Med. Jour., August 21st, 1909, p. 442.
 16 Renon and De Lille: Comptes Rendus de la Société de Biologie,
 Tome Ixvi., Jan. 22nd, 1909. Leopold Levi and II. de Rothschild:
 loc. cit.

^{*} A paper read before the Medical Society of London on Oct 25th, 1909.

here let me say that the proposals I am about to place before you have as their sole object the interests of the public whom we serve, and that they are not intended to benefit the medical profession, the dental profession, or any special department of either. Experience has proved that the risks and discomforts of anæsthetics may be reduced to trifling proportions by the recognition and adoption of proper principles of anæsthetisation, and that such principles may readily be acquired by the rank and file of our profession.

What is the present state of things as regards the administration of anæsthetics in this country? The fact is that the law allows any person whatsoever to administer an anæsthetic for a surgical operation, provided his intentions are good, and that he performs his task to the best of his abilities. It is also legal for any person first to administer an anæsthetic and then to perform an operation upon the patient he has thus rendered unconscious, provided, as before, that his motives are good, and that he does his best for his patient. I need hardly say that in circumstances such as these numerous fatalities have occurred, particularly amongst the poorer classes. At one inquest it was shown that an advertising herbalist had administered chloroform to a healthy servant girl almost immediately after her dinner, and had himself attempted to extract a tooth. At another inquest upon a girl, aged 17 years, who died under nitrous oxide gas administered by an unregistered dentist, the jury expressed the opinion that an anæsthetic should not be given by an unqualified person—a pronouncement which led to a question being asked in the House of Commons, but to nothing more. At another inquest a quack dentist, whose patient died under the influence of ethyl chloride, gave evidence to the effect that he had used this anæsthetic over 1600 times; that 5 cubic centimetres constituted an ordinary dose; that he did not know what 5 cubic centimetres meant; that he was not guided by the patient's condition but by looking at the bottle; and that he did not know how to perform artificial respiration. As regards the dangers of local anæsthetics such as cocaine and its allies I have only to remind you of a case where an unregistered and unqualified dentist caused the death of a patient by injecting cocaine into the gum whilst he performed a dental operation to prove to you the need of some legis-lative protection for those who from ignorance place themselves in such hands. In those instances in which coroners' juries have committed persons for trial on charges of manslaughter the cases have either been dismissed or the judge, in summing up, has pointed out that the prisoner was fulfilling a useful function amongst the poorer classes. In addition to the dangers to which the public are exposed whilst actually under treatment by unregistered dentists, their lives are not infrequently threatened whilst returning to their homes, or subsequently, by alarming symptoms of cocaine poisoning, by profuse hæmorrhage resulting from reckless extractions, or by septic poisoning, often culminating in necrosis, dependent upon the use of unclean forceps and syringes. Time will not permit me to lay before you documentary evidence in my possession proving the reality of these dangers and the need for legislation. Only last week you may have observed in the public press an instance of a case in which a patient nearly lost his life as the result of unskilful treatment by an advertising dental company. The widespread use by advertising and unregistered dentists and dental companies, not only of local but of general anæsthetics, is, I submit, a matter for the serious consideration of our profession, for it brings into the practices of these dangerous charlatans thousands of persons who, were they not tempted by the expressions "painless dentistry" and the like, would certainly find their way to reputable registered dentists and thus avoid the dangers to which I have alluded. Moreover, the use of anæsthetics by quacks favours the perpetration of many a nefarious surgical procedure and the occurrence of many a surgical disaster. This is seen, not only in the practice of the quack dentist, but in that of the bone-setter. If such irregular practitioners were prevented by law from administering anæsthetics or having them administered for them a lasting benefit would be conferred upon the public, and surgery would be deprived of much of that discredit with which its name is sometimes associated.

Passing to reputable medical and dental practitioners,

we find a state of things which, though immeasurably superior so far as the professional spirit is concerned, leaves much to be desired. This is particularly the case in dental practice. Single-handed anæsthetising and operating are extensively resorted to in provincial towns and country districts. Sometimes the "gas" or other anæsthetic is entrusted to a workroom assistant, a maidservant, or even a page-boy. It would, however, be unfair to throw upon the present dental profession the onus of conditions which came into being in the middle of last century. At the last meeting of the British Dental Association at Birmingham I brought before that association the scheme which forms the basis of my present paper, but I regret to say that the majority of those present were opposed to the reforms suggested. I trust, however, on this occasion, by means of statistics which I have recently been collecting, to supplement the arguments I then brought forward. these statistics I shall presently refer. Coming to general surgical practice I must content myself by saying that a great many improvements in the department of anæsthetics are still urgently required. At some of our hospitals there is a deplorable inadequacy both in personnel and in general equipment in this department. In private practice, particularly amongst the middle and poorer classes, the anæsthetic is often so inadequately given that the surgical success of cases is jeopardised. That there are special circumstances under which the double responsibility of anæsthetising and operating may, and should, be undertaken is obvious. But, as I have elsewhere shown, there is incontrovertible statistical evidence of the danger of such a practice, particularly in the hands of non-medically qualified persons.

If it be the great function of our profession to preserve human life, surely it is high time to take some steps towards improving the conditions under which anæsthetics are administered. The proposition I would here submit to you is that the whole system of anæsthetic administration requires to be reorganised from its foundations. We must start from below and suppress unqualified practice in anæsthetics, or we shall never rob anæsthesia of its present perils to the poorer classes and of that discredit into which it has been allowed to fall. We must call upon our legislature to protect the public by some enactment which will prescribe who shall and who shall not administer an anæsthetic for a surgical operation. of course, no reason whatever why reforms in our hospitals and schools should not be pushed forward pari passu with requisitions for legislation; but until legislation has been secured and the line drawn between those who should and those who should not conduct anæsthesia the safety of the public will be threatened and the position of this department of practice will remain degraded. The administration of an anæsthetic is essentially a medical function, and, as I have before indicated, the question as to who should conduct such an administration is part and parcel of the vital question now engaging the attention of the General Medical Councilthat of the prohibition of unqualified practice in general. But the specific question before us is too pressing to be deferred till the main question assumes concrete form. Anæsthetics are now being used upon such a vast scale throughout the United Kingdom that some legislative enactment concerning them would constitute a fitting instalment to the more comprehensive measure which we hope to see introduced at no distant date. According to the report and appendices of the Unqualified Practice Prevention Committee of the General Medical Council which appeared last year, there are only about 10 of 107 colonies and countries which do not protect the public against unqualified practice, and Great Britain is amongst this 10 per cent. minority. In no less than 75 of these 107 colonies and countries the practice of medicine by those not legally recognised as qualified persons is absolutely forbidden. It is interesting to note that in Germany—the only European country besides our own which does not prohibit unqualified practice—there is a projected Imperial Bill which, if passed, would go a long way towards correcting such an anomaly, and the administration of general anæsthetics is specifically referred to in this Bill. In Austria, moreover, special regula-tions have recently been issued by the Home Secretary with regard to single-handed anæsthetising and operating.

Now although it is generally agreed that there is a good case for legislation in regard to anæsthetics, it must be remembered that it is by no means an easy matter to draft a measure which will bring about the desired objects without interfering with those public and professional interests which deserve to be safeguarded. The General Anæsthetics Bill now under the consideration of the Departmental Committee on Coroners' Law 2 has as its main principle the restriction of general anesthesia, however induced, to legally qualified medical practitioners, although it pro-poses to allow registered dentists in practice at the passing of the Act to continue to administer general anæsthetics if they so desire. At the recent meeting of the British Dental Association at Birmingham I endeavoured to prove that by supporting such a Bill the dental profession, instead of losing anything, would greatly gain, for as no unregistered dental practitioner would be entitled to administer a general anæsthetic or to have one administered for him the services of registered practitioners would be requisitioned on a far larger scale than at present, whilst the improved conditions under which dentists would operate and the reciprocity which would be established between medical and dental practitioners would be greatly beneficial to the latter. With a few exceptions, however, the members of the association who were then present were unable to see their way to support the proposals put forward, maintaining, in a resolution, that registered dentists were fully competent to administer anæsthetics for dental operations. The resolution in question protested "against The resolution in question protested "against any legislation which would make it illegal for registered dentists to administer anæsthetics for dental operations.' It was contended that any such legislation would not be "in the best interests of the public." Now, it seems to me Now, it seems to me that those who were responsible for the drafting of this resolution must either have been unaware of the fact that the great majority of provincial dentists are single-handed, and therefore would, under the policy embodied in the resolution, administer general anæsthetics and also operate, or they must have shut their eyes to the dangers and disadvantages of this practice, accepting these, so to speak, in preference to the alternative policy laid before them
—that of placing general anæsthetics in the hands of
medical men and of ensuring that when a patient is rendered unconscious, even for a dental operation, he shall always have two competent practitioners present. I have elsewhere shown by some striking statistics that the practice of ancesthetising and operating single-handed is highly dangerous and I do not see how any individual or any body of professional men can countenance it. This is one of the main points I wish to place before you this evening. I am glad that the Departmental Committee now sitting is fully alive to this particular danger. Curiously enough the accredited representative of the British Dental Association, when giving evidence before this Committee deprecated the practice in question. More curious still, perhaps, is the fact that a distinguished anæsthetist in attempting to explain to the Committee how, on the one hand, he could support the claims of dentists to administer nitrous oxide, whilst on the other, he could not support the practice of administering and operating single-handed, made the statement that most dentists in the country had partners, by which statement he obviously implied that registered dentists were able to administer anæsthetics for one another. Surely he was in ignorance of the true facts of the case. According to the "Dental Directory" just published, there are no less than 373 small towns or districts in the United Kingdom possessing only one registered dentist each, so that in such towns this coöperation between registered dentists is obviously out of the question.

As regards the conditions of dental practice in larger provincial towns, I have, by the kind assistance of numerous friends, collected some interesting information. The following is an alphabetical list of 48 towns, scattered throughout the United Kingdom, in which inquiries as to the conditions of registered dental practice have been conducted: Aberdeen, Aberystwyth, Armagh, Ballymena, Bath, Bedford, Belper, Boston, Bournemouth, Brighton, Bristol, Brixham, Cardiff, Carnarvon, Cheltenham, Chepstow, Deal, Dumfries, Exeter,

Falmouth, Galway, Gateshead, Gloucester, Greenock, Ipswich, King's Lynn, Kingstown, Leigh (Lancs.), Limerick, Llandrindod Wells, Ludlow, Newton Abbot, Nottingham, Oxford, Paignton, Penarth, Reading, Ryde, Selby, Sleaford, Swansea, Taunton, Teignmouth, Torquay, Tralee, Trowbridge, Truro, and Wick; and the subjoined table gives the results of these inquiries:—

Table showing Conditions of Registered Dental Practice in 48 Towns scattered throughout the United Kingdom, the Population of which varies between 342,388 and 1827.

Total population of the 48 towns	2,138,130
Total number of registered dentists (excluding registered or qualified assistants) in practice in the 48 towns	482
Ratio between registered dentists in practice and population	
Total number of registered dentists in practice by themselves in the 48 towns	352
Percentage-ratio of dentists of Group D to those of Group B	73
Total number of registered dentists in partner- ship in the 48 towns	99
Percentage-ratio of dentists of Group F to those of Group B H	20.5
Total number of registered dentists in the 48 towns practising with registered or qualified assistants (excluding the latter)	31
Percentage-ratio between dentists of Group H and those of Group B	6.5

It will be seen that the population covered by the inquiry is, roughly, 2,138,000; that the registered dentists available for this population (excluding registered or qualified assistants) are 482 in number, or 1 to every 4435 persons; that 352 dentists, or 73 per cent., practise by themselves; that 99 dentists, or 20.5 per cent., are in partnership; and that 31 dentists, or 6.5 per cent., practise with registered or qualified assistants. Even if we add together the dentists in partnership and those practising with registered or qualified assistants (making 130 in all) they only constitute 27 per cent. of the total number. In other words, so far as these 48 towns are concerned, there are no less than 73 per cent. of the registered dentists who, under the present system, must either (a) give anæsthetics themselves and operate; (b) obtain some unqualified person, such as a workroom assistant or a domestic servant, to administer the anæsthetic, both of which practices are admittedly reprehensible; or (c) call in medical men to act as anæsthetists. I leave it to this meeting to decide which is the right and only course to be adopted. It is interesting to note in this connexion that the medical men in practice in the 48 towns above specified number 2108; in other words, that there are in these towns 4.3 medical men to every registered dentist. I have been unable to obtain any reliable statistics as to the number of unregistered dentists practising in these towns, but there is ample evidence to show that the number is a large one. That any hardship whatever would be inflicted upon that one registered dentist with a potential practice of over 4000 persons by placing at his disposal the services of a medical man to administer his anæsthetics seems to me impossible to conceive. I should rather be inclined to believe that, as matters now stand in regard to anæsthetic administrations, his practice is prevented from rising to its proper level. If there is in certain towns, as I am given to understand there is, keen competition between registered and unregistered dentists, surely the association of medical men with the former would help the public to distinguish them from the latter, with whom any such association is, as you are aware, contrary to the regulations of the General Medical Council.

I must here refer to some extraordinary remarks just made by Sir Victor Horsley before an audience largely composed of

dentists and their friends. Under the erroneous impression that he is doing a service to the dental profession, he is, I submit, proposing a great disservice to the public. After mentioning the circumstance that one of our licensing bodies has recently made a course of instruction in anæsthetics an essential part of the dental curriculum—a circumstance which many, I believe, regret, but one which, after all, hardly obliges the recipients of such instruction to administer anæsthetics when they pass out into practice—he proceeds to suggest that dental students should be instructed, at general hospitals, in the administration of ether and chloroform, and that chloroform, if administered by certain methods, is a safe anæsthetic. I feel compelled to put on record my most emphatic protest against such mischievous doctrines. That the medical boards of our general hospitals would sanction the instruction of dental students in chloroform administration for dental operations I very much question, particularly when the conditions of dental practice to which I have just referred are borne in mind. Personally I should regard such an event as retrogressive and in the highest degree dangerous to the public. Everyone who has ever administered chloroform for an operation within the oral cavity knows perfectly well that it is in these very cases that it is difficult or impossible to apply the percentage methods upon which Sir Victor Horsley lays so much stress. Although I may appear to depreciate the work now being done by the dental profession I have no such intention. I simply condemn certain antiquated and dangerous systems under which they are compelled to do that work—systems that short-sighted persons, under the impression that they are furthering the interests of existing dentists, would like to see perpetuated. After the evidence I have laid before you it is, I submit, clear that the advocates of dentists administering general anæsthetics must, under present circumstances, also be the advocates of single-handed anæsthetising and operating, and if we are, in this twentieth century, to encourage dentists to administer chloroform and then operate, I fail to see that our profession is doing its duty to the public in attempting to reduce the present mortality from anæsthesia.

Having dealt with one of the two main objections which have been advanced against the General Ansesthetics Bill I come to the other objection-namely, that the Bill does not propose any legislative protection against local anæs-thetics. This omission was largely due to the difficulty experienced in drawing any hard-and-fast line between the comparatively harmless methods of producing localised analgesia and the more dangerous methods of securing this condition by the injection of cocaine and allied drugs into the tissues of the body. After further consideration on the subject, however, it has been found possible to correct this omission and to modify the General Anæsthetics Bill in the direction indicated. It will be seen that by the subjoined Draft Bill general anæsthetics are, as before, placed in the hands of registered medical practitioners, and that local anæsthetics are placed in the hands of registered medical or registered dental practitioners.

MEMORANDUM.

MEMORANDUM.

The object of this Bill is to protect the public, as far as possible, against deaths arising directly or indirectly from the action of anesthetics—a class of drugs or substances employed for producing either generalised or localised insensibility during surgical, medical, obstetrical, or dental operations, acts, or procedures.

The three following facts indicate the need for this legislative protection: 1. Anæsthetics are for the most part powerful poisons.

2. They are constantly being used upon a vast and increasing scale throughout the country.

3. A considerable and increasing number of fatalities are annually taking place in connexion with their administration.

The promoters of the present Bill are of opinion that the solution of

administration.

The promoters of the present Bill are of opinion that the solution of the problem of reducing the number of deaths wholly or partly referable to anesthetics is to be found in a careful study of the circumstances and symptoms which have attended the deaths hitherto recorded. Such a study seems to them to indicate that anesthetics, when employed for the above-named purposes, should be administered only by certain persons. This Bill therefore proposes to make it a penal offence for any person other than the persons herein specified to administer for the purposes above mentioned either any general anesthetic or any local anesthetic by the means described.

ANÆSTHETICS ACT, 1912.

An Act to Regulate the Administration and Employment of Anæs

theties.

Be it enacted by the King's Most Excellent Majesty by and with the advice and consent of the Lords Spiritual and Temporal and Commons in the Present Parliament assembled and by the authority of the same

1. Any person other than a legally qualified medical practitioner

registered under the Medical Acts who shall wilfully administer or cause to be administered to any other person by inhalation or otherwise any drug or substance whether solid, liquid, vaporous or gaseous and whether pure or mixed with any other drug or substance with the object of producing a state of unconsciousness during any surgical, medical, obstetrical or dental operation, act or procedure, or during child-birth, shall be liable on conviction before a Court of Summary Jurisdiction for such offence to a penalty not exceeding £10 and in the case of a second or subsequent conviction to a penalty not exceeding £20, provided always that a person shall not be liable to a penalty under this Section if in conducting such administration he was acting under the immediate direction and supervision of a legally qualified medical practitioner, or if the circumstances attending the administration were such that he had reasonable grounds for believing and did believe that the delay which would have arisen in obtaining the services of a legally qualified medical practitioner would have endangered life, or if having been registered under the Dentists Act 1878 before the passing of the present Act he conducted such administration for a dental operation, act or procedure.

been registered under the Dentists Act 1878 before the passing of the present Act he conducted such administration for a dental operation, act or procedure.

2. Any person other than a legally qualified medical practitioner registered under the Medical Acts who shall inject, insert, or introduce or cause to be injected, inserted or introduced into any tissue or tissues of the body of any other person through a puncture, incision or other breach of surface any drug, medicament, or substance, whether solid or liquid, and whether pure or mixed with any other drug, medicament or substance with the object of producing a state of localised insensibility to pain without unconsciousness during any surgical, medical, obstetrical or dental operation, act or procedure or during childbirth shall be liable on conviction before a Court of Summary Jurisdiction to a penalty not exceeding £10 and in the event of a second or subsequent conviction to a penalty not exceeding £20, provided always that a person shall not be liable to a penalty under this Section if in attempting to produce or in producing such localised insensibility he was acting under the immediate direction and supervision of a legally qualified medical practitioner, or if being registered under the Dentists Acts 1878 he attempted to produce or did produce such localised insensibility for the performance of a dental operation, act or procedure or if being a bond-fide student in dental surgery or dentistry and acting under the Dentists Act 1878 he attempted to produce or did produce such localised insensibility for the performance of a dental operation, act or procedure.

3. The expression "Court of Summary Jurisdiction" in this Act shall

procedure.

3. The expression "Court of Summary Jurisdiction" in this Act shall have the same meaning as in Subsection 11 of Section 13 of the Interpretation Act 1899. In Scotland it shall mean any Justice of the Peace and also the Sheriff. The expression "the Medical Acts," shall mean the Medical Act 1858 and any Acts amending the same passed before the passing of this Act.

4. This Act may be cited as the Anæsthetics Act, 1912.

The main principle laid before you this evening, that of restricting the use of general anæsthetics to medical practitioners, has been endorsed by the Medico-Legal Society, whose valuable services in connexion with this proposed legislation I am glad to have the opportunity of acknowledging. The principle would also appear to have been endorsed by the Section of Anæsthetics of the Royal Society of Medicine, although when the matter came up for consideration by that section there were, I regret to say, certain members present who could not see their way to support the principle. Reforms such as those I have indicated naturally require time for their consideration, and I look forward with confidence to the day when all members of our profession will see the necessity of some such scheme as that which I have had the honour of laying before you this evening.

ON CERTAIN B. COLI INFECTIONS.

By J. CHARLTON BRISCOE, M.D. LOND., M.R.C.P. LOND., ASSISTANT PHYSICIAN TO KING'S COLLEGE HOSPITAL, ETC.

It has been recognised for several years that in some cases the kidneys act as filters through which the body can free itself of the various organisms which produce diseases, and that bacilli and cocci may be eliminated through the urinary apparatus without giving rise to any definite lesion in that tract. To quote a well-known instance, typhoid bacilli may be found in the urine many years after an attack, the host being otherwise healthy. Occasionally, also, tubercle bacilli may be found in the urine of a person affected with tuberculosis of the lungs or other organs, there being no symptoms referable to the urinary system and no lesion being found there subsequently. This is also true for certain cases of pneumococcic and staphylococcic infections. Among the organisms which are found in the urine those belonging to the bacillus coli group occur with great frequency. This condition of bacilluria has attracted considerable attention during the past years and recently several papers have appeared on the subject.1 These contributions have rather tended to

¹ Bruce Clarke: Clinical Journal, February, 1908. L. S. Dudgeon: THE LANCET, Feb. 29th, 1998, p. 616. C. R. Box: THE LANCET, Jan. 11th, 1908, p. 77.

differentiate a condition of colon bacilluria as a separate entity, whereas the condition ought to be regarded as only a phase of the infection in which separate stages of varying degrees of severity may be recognised: 1. A stage in which there is the passage of pus in the urine which may be either intermittent and obviously derived from a pocket or abscess cavity, or be continuously present, probably indicating a more widespread infection of the urinary tract. 2. A milder stage in which, as a rule, there is a continuous passage of the bacilli into the urine, but without the presence of pus or cells derived from the epithelium lining the tract. 3. A condition in which there are intermittent discharges of bacilli without cells-i.e., some specimens of the urine will contain no organisms, while others will be found to be loaded. The symptoms correspond in severity, and in the milder forms there may be nothing to call attention to the condition.

The route by which these organisms gain access to the urine is still the subject of controversy, but the view that it is by way of the urethra, and so by direct extension, seems to be most improbable. It should be remembered that the B. coli is a constant inhabitant of the intestine, and it has been shown that organisms can pass through the apparently intact wall without leaving any detectable lesion, and this is facilitated by any condition which produces obstruction to the onward passage of the intestinal contents. It is hardly a matter of surprise, then, that a history of constipation is usually found in these cases, or that a large proportion of them should occur in women.

In the cases where pus is being passed there will be no difficulty in recognising the condition, as the cloudiness or deposit, or both, will at once arouse suspicion, but in examining the specimen from an individual who is passing only the bacilli the following points should be noted. 1. As a rule, the urine is rather paler than would be expected from its specific gravity. The specific gravity shows no peculiarities of itself, but on account of the pallor of the specimen the high urinometer reading comes as a surprise. 2. The urine is acid in reaction, often strongly so. specimen is not clear and translucent. A kind of haze is present throughout the whole column of the urine. In some cases a cloud, or even a small deposit, of mucus forms at the bottom of the vessel. A slight haze, such as has been indicated above, is frequently present in normal urine and to detect these cases of bacilluria the following simple method can be adopted. A small piece of filter paper is folded in the usual manner and moistened by allowing some water to filter through it into a clean test-tube. This serves two purposes the filter paper is rendered less pervious and inspection of the filtrate in the tube shows whether the test-tube is clean or This latter point is important, as a dirty tube will give the impression of cloudiness in the contained liquid. A small quantity of urine is then filtered into the test-tube. The filter paper allows bacteria to pass through, but holds back most of the other substances which give rise to turbidity; however, red and white blood corpuscles, fat, and occasionally certain fine precipitates do pass through. A warning is here necessary with respect to urines which deposit urates. If such a urine is filtered while it is warm the paper will hold back the urates which are already precipitated, but as the filtrate cools more will be thrown out of solution and will give rise to a haze in the test-tube. This is, of course, immediately dispersed by heating, but it is simpler to cool the urine before filtering as a part of the routine.

When the urine filters clear, there is no appreciable quantity of B. coli present. If, however, the filtrate is cloudy, the next procedure is to put a drop of the urine on a slide, apply a cover-glass, and examine with the microscope. It is not necessary to use a 1-12th oil immersion lens, for the bacilli can be easily seen by the aid of a 1-6th inch objective and a No. 3 eye-piece. It is advisable to cut down the light in the first instance in order to find the focus, after which as much light as is desired can be admitted. If the B. coli are present they will be seen either as round bodies or as short rods, according as they are floating end on or lengthwise, and they can further be seen to be moving briskly. This is in contrast to the appearance presented by cocci or other substances not endowed with the power of locomotion. In the latter case the small bodies may show some movement, but there is no change of position. Some confusion may arise temporarily from the presence of currents in the specimen, but the movement is then in one direction only,

whereas the B. coli move continuously and in various direc-The application of a little heat will often increase the motility of the bacilli, and it will also be found that the rapidity of movement varies in different specimens. Should the haze not have been due to this condition, the cause will be discovered at the microscopic examination. Two further steps are advisable but not essential. In the first place a large loopful of the urine may be taken by means of a sterilised platinum needle and gently rubbed over the surface of an agar tube, which is then incubated. At the end of 24 hours or less there will be a plentiful growth, which is opaque and white. The margins of this growth are usually markedly crenated in outline. The second investigation consists in making a film either from the deposit found on standing or preferably from the centrifugalised deposit. The film is allowed to dry, fixed by heat in the usual manner, and then stained by Gram's method and counterstained with carbol-fuchsin or neutral red. The B. coli are decolourised by Gram's method and take up the counterstain—i.e., are seen to be stained red by this method. The urine is best examined as soon as possible after it is passed, directions being given that the parts should be cleansed carefully before micturition; if necessary, and more especially in women, a catheter specimen should be obtained. This method of examination of the urine is also of value in the isolation of the organism for the treatment of certain cases of infection where the discharge proceeds from some site other than the urinary tract, is obviously contaminated, and from which it would take some time to isolate the organism. Two of these cases will be mentioned later.

If urine is examined in this manner a surprisingly large number of specimens will be found to contain the B. coli. Most of these occur in women, and some pathologists go so far as to say that in the female this condition is of no importance; certainly there may be no associated symptoms of disease unless constipation is considered as such. At times, however, there will be headache, slackness, and general malaise. Confinement to bed may cause the passage of the bacilli. To illustrate the absence of symptoms the following instance may be quoted. While examining the urines of several young men for another purpose, in order to obtain a normal standard, one specimen was found to be teeming with these organisms. The individual was in perfect health at the time, and although specimens have been repeatedly examined since the bacilli have never again been found. At the Evelina Hospital for Children during a period of six months the urines have been carefully examined with regard to this point, and B. coli was passed in appreciable quantity in 6 out of 145 cases. In two of these there were no special symptoms, in two others there was an associated condition which might have been described as "febricula," and in the remaining two the symptoms were more severe.

As illustrating the correlation of symptoms with the intermittent passage of organisms the following case is of interest. A girl, aged 14 years, is one of my out-patients at King's College Hospital; she suffers severely from intermittent attacks of headache and general malaise, and is, besides, a typical case of postural albuminuria. The attacks last for a day or two, and during these periods large numbers of B. coli are found in the urine, but they are not present in the intervals. At these times the albumin is also in larger quantities and may even be present in the specimen passed on rising. Regulation of the bowels alone has not prevented the attacks. There seems to be a direct relationship between the passage of bacilli, the quantity of albumin, and the symptoms. Neither pus, epithelial cells, nor casts have been found. Under treatment directed against the B. coli the headaches and associated symptoms are diminishing, the bacilli are less frequently found, and the quantity of albumin is becoming less.

The passage of B. coli may occur in persons who are suffering from other conditions and may aggravate the original disease. This was the case in two individuals suffering from pulmonary tuberculosis and in a third case of miliary tuberculosis. In the two former patients there was a rise of temperature with sickness and diarrhea, which had not been present before and which subsided with the disappearance of the abnormal urinary condition. In the third case no difference in the symptoms was produced.

In the next two cases the symptoms pointed mainly to the kidney as being the organ affected. The first is that of a

lady, about 60 years of age, who had for three weeks attacks of pain referred to the region of the right kidney, associated with feelings of general malaise and on two occasions with slight rigors. There was some blood in the urine, at times sufficient to be recognised with the naked eye, and in addition a considerable number of motile organisms, which on examination were found to be of the B. coli variety. No rise of temperature was recorded. The right kidney was palpable and at first slightly tender. Treatment directed against the urinary condition has been successful in relieving her and in getting rid of the organisms from the urine, and there has been no return of the symptoms during the past eight months. The second case was that of a nurse who three months previous to being seen had some frequency of micturition, which yielded at the time to treatment by large doses of potassium citrate. On the first day on which she was seen the temperature was 103° F., the tongue was dry and brown, and some delirium was present at night. From the third to the sixth day she had pain in the right loin, with considerable swelling and tenderness of the right kidney. During these first six days the urine contained at times many different organisms, with pus, blood, and epithelial cells, while at other times there were fewer cells and B. coli in pure culture. The patient was examined under an anæsthetic by Sir W. Watson Cheyne, who detected a cervical polypus. This was removed on the seventh day of her illness by Dr. Eardley Holland. The urine continued to contain the bacilli, but the pus cells gradually disappeared. The presence of this septic polypus explained the varying condition of the urine, which at times was contaminated by the vaginal discharge. The temperature came down to normal on the tenth day, but the kidney remained enlarged and tender for a further period of 14 days. Rapid improvement followed treatment by vaccines, and at the end of two months she was in better health and weighed more than she had for several years previously. A few bacilli were still present in the urine, and it was not until the expiration of three months that they finally and permanently disappeared. During this period treatment was also largely directed against the constipation, which had been rather marked. Both these patients complained of pain in the region of the kidney, and in both that organ was enlarged and tender. In the second case the attention was at first directed to the bladder, but the pain in this area was probably due to the polypus and disappeared on its removal.

The following is a case of quite a different character, but it illustrates the advantage of examining the urine for B. coli and of utilising the same when found. A young married woman, the subject of chronic constipation, was in the seventh month of pregnancy. For two months she had been suffering from a recurrent discharge of pus, mucus, and blood from the rectum, accompanied by severe pain and tenesmus. The motions were, however, passed without pain and formed. There was an evening temperature reaching 101° F. with occasional rigors, and she was steadily losing ground. pus from the rectum contained many and various organisms. The urine drawn off by catheter contained B. coli, but no pus cells. Her medical attendant diagnosed ulceration of the lower part of the large intestine and was able to detect some of the ulcers by rectal examination, though there was no induration round them. A surgeon was called in, and, diagnosing a pyosalpinx opening into the rectum, performed laparotomy. The pelvic organs were found to be normal except that the sigmoid flexure was markedly congested. During the night following the operation the patient was delivered of a seven months child, which only survived for a few days. During the next four days the temperature remained between 102.5° and 103.5°, the patient being in the "typhoid state." An injection of 30,000,000 of the dead organisms prepared from the culture derived from the urine was given. This was followed by marked improvement in the general condition of the patient and by a fall in the temperature to between 100° and 1013. The injection was twice repeated at intervals of a week, each time with great improvement. Rectal irrigation produced a most beneficial effect and was responsible for the ultimate cure of the patient, although a temporary relapse occurred after an interval of three months.

Another case in which the urine was employed for the

and an abscess was opened and drained. As the patient's condition did not clear up satisfactorily a second operation was undertaken for the removal of the appendix. A week later the wound was looking perfectly healthy and there was practically no disharge, but the temperature varied from 101° to 103° F. He was pale, anæmic, restless, and had wasted considerably. A culture taken from the wound was found to be sterile, probably owing to the antiseptics employed in the dressings. The urine, however, contained B. coli, and a pure culture was obtained from which a vaccine was prepared. The first injection produced much general improvement, with a fall in the temperature to 98.8°, which, however, was not maintained, but was succeeded on the fifth day by a rise to 102°. A second injection was given seven days after the first and with a similar improvement, and following the third inoculation after a similar interval the temperature became and remained normal.

The three following cases illustrate a condition of caseation of varying extent due to this organism.

A patient, aged 35 years, had been complaining for years of lassitude and weakness. During time she had been chronically constipated and had been troubled with piles and occasional rectal discharge. one year there had been pains in the pelvic region and right flank which increased in severity during the menstrual periods. She lost weight considerably and began to have an evening rise of temperature. The pain eventually became so severe as to prevent her getting about at all. Examination showed that the pelvic organs were matted together, and the condition was diagnosed as due to tuberculous peritonitis confined to the pelvic region. It is not recorded whether B. coli were present or not in the urine. Laparotomy was performed, and the uterus was found to be bound up with the posterior wall of the bladder and a coil of small intestine in a mass of caseous material. The mass was removed as freely as possible. I was asked to estimate the opsonic index to tubercle and to treat the patient for this condition. The tuberculo-opsonic index, however, proved to be normal on four different occasions. Examination of the prine demonstrated the presence of numerous B. coli, sometimes with and at other times without pus. A careful examination of the microscopical sections of the material removed showed that there was no structure suggesting tubercle. Extensive caseation was present, but everywhere throughout this formation were numerous short bacilli, which did not stain by Gram's method and were not acid-fast. Under general treatment and by vaccines of B. coli derived from cultures from the urine she is now well and at work. During the first 12 months after the operation there were periodic attacks of pain followed by the passage of stitches in the urine with small masses of inspissated pus. These attacks have ceased during the past year and the urine is now free from B. coli. A sinus following the operation communicated with the bladder and allowed the passage of urine for the first three months, and remained in an indolent condition for a year, but is now soundly healed. In this case there was a period of nine months during which bacilli were intermittently passed.

The following case also shows this tendency of the B. coli to form indolent caseous masses. A young girl, who had two years' previously been in King's College Hospital under the care of Dr. Nestor Tirard for tuberculous peritonitis which had completely resolved, was readmitted with some obscure pelvic trouble. There was an ill-defined swelling to the left of the middle line reaching to within 2 inches of the umbilicus. Per vaginam the uterus was normal in size but was fixed. The tumour was attached to the left side and fundus of the uterus. A fixed mass was also felt in Douglas's pouch on the right side. Treatment was directed against constipation and she was sent to a convalescent home for three weeks. On her return she was operated on by Dr. John Phillips. A large mass was found attached to the small intestine, great omentum, and left ovary and tube. This was removed and proved to be an inflamed broad ligament cyst. A similar but smaller cyst was found on the right side and was also removed. Dr. W. d'Este Emery reported that they were of a chronic inflammatory nature and almost certainly tuberculous. Nine days later the stitches were removed, the purpose of isolating the organisms is the following. A young man, aged 20 years, developed an attack of appendicitis. It was considered desirable to operate immediately, weeks after the operation. There was still a temperature

ranging between 100° F. in the evening and normal in the morning. The laparotomy wound was soundly healed but rather painful. Shortly afterwards a swelling formed in this area accompanied by considerable pain and increasing induration. In the course of a week the skin over this swelling became gangrenous and sloughed. On removal of this superficial slough a mass of caseous material was seen which gradually separated out, leaving an ulcer about 1½ inches deep. Microscopically it consisted of granular structureless material containing numerous Gramnegative bacilli. A pure culture of B. coli was obtained from it. The urine was acid and contained numerous B. coli. Under treatment the ulcer healed in the course of six weeks with the exception of a small sinus which even now, nine months after operation, discharges a small quantity of bloodstained fluid at the times of the monthly periods. With this exception she has done remarkably well, and six months after the operation was able to walk several miles a day. This case, like the preceding, shows the chronic and indolent nature of these sinuses left by a B. coli infection. In both cases the organism was easily obtained from the urine and a vaccine thus obtained was used in the treatment. sinuses in both cases were sterile, as shown by inoculation of a culture tube.

In the third case the infection gave rise to a condition which was mistaken for a malignant pelvic tumour. woman, aged 50 years, was admitted into the Italian Hospital, under the care of Mr. T. P. Legg, complaining of inability to pass urine. Examination showed a tumour which extended from the pubes to the umbilicus. Per vaginam this was felt to be of an elastic consistence. A diagnosis of an ovarian cyst or a fibroid of the uterus pressing on the bladder was made. There was no rise of temperature. A large quantity of urine was drawn off by catheter; it contained neither albumin nor sugar, but unfortunately it was not examined for the presence of organisms. The tumour still persisted after catheterisation. Laparotomy was performed and the uterus and ovaries were found to be normal, but displaced downwards and backwards by the tumour, which was of a darkred colour and covered by peritoneum, with many large vessels coursing over the surface. It was then seen to be connected to the upper wall of the bladder, and in view of the size (3 × 3 inches approximately) and of the hardness of the structure it was thought to be a new growth arising from the bladder; no attempt was made to remove it. Three days later the temperature rose in the evening to 103° F. and became hectic (normal to 103°) for several days. She then passed a considerable quantity of pus, accompanied by large flakes of lymph, in the urine. The tumour was found to have disappeared, but from time to time it re-formed and emptied itself, eventually disappearing entirely. From the urine a pure culture of B. coli was obtained. A year afterwards the patient was perfectly well, and nothing was to be felt either per hypogastrium or per vaginam. Turbid urine is still passed occasionally, the turbidity being due to B. coli, and no pus cells are to be found on these occa-Vaccination was adopted in the first instance, but has not been persevered with.

These three cases have all occurred in women, but the infection is not confined to them. A man, aged 30 years, was sent to me by Mr. F. Burghard with a history of recurrent attacks of fever and general malaise associated with pain in the region of the left kidney. At these times he has much pus in the urine, but in the intervals there are only B. coli and no pus cells. He is also improving, and the attacks are becoming less severe in intensity, but not in frequency under treatment by vaccines obtained from the organisms which he

The following case is not so clear, though suggestive. child, aged 9 months, was admitted under my care at the Evelina Hospital from Dr. H. C. C. Mann's out-patient department. She had been quite well up to three months before admission, when she developed an attack of bronchitis, with occasional discharge from the right ear. This discharge had been last noticed three days before admission, on which date there had been some sort of a fit, but a reliable account of it could not be obtained. In the interval several more fits occurred, and slight right-sided internal squint was present. vulsions. The parents had lost three children from con-The child had been correctly fed and there was nothing to suggest congenital syphilis. Nutrition was good. There was slight head retraction with marked irritability and general cutaneous hypersesthesia. Kernig's sign was

present and a questionable left internal squint. The kneejerk was obtained on the left side, but not on the right. There was also a perforation of the right membrana tympani. Lumbar puncture produced 16 cubic centimetres of clear fluid, containing no cells, and from which no growth was obtained from inoculation on to suitable media. The cerebral symptoms were relieved by this lumbar puncture. urine contained large quantities of B. coli and a few pus cells, and was very acid in reaction. Calmette's tuberculo-ophthalmic reaction was negative. The temperature ranged between 99° and 103° F., and the pulse from 140 to 150. No alteration in the condition occurred, and the child died on the eleventh day after admission. Post mortem nothing abnormal was found, and cultures from the spleen, heart blood, and kidney remained sterile. course of the case suggested an acute toxemia, and the only pathological condition detected was the presence of bacilliin the urine.

In treating one of these cases it is necessary to discriminate between the severe and milder types of case. Because the bacilli are found in the urine it is not necessary at once to rush to vaccines, and even in the more chronic-forms where vaccination will be the best remedy it is inexpedient to neglect all other measures and rely on thisalone. Many such cases must have occurred in the past when the condition was less well recognised and must have recovered, and no doubt many cases of unexplained febricula may have been instances of this condition. Therefore each case ought to be treated according to the severity and duration of the disease. The milder forms will yield to the well recognised treatment of an ordinary febrile attack, a hot bath, a mercurial purge, rest in bed, and reduced diet. Should the condition not clear up at the end of a week or ten days, then the sooner more radical measures are adopted the more likely is the condition to resolve. It should be remembered that the B. coli is an inhabitant of the intestine and in cases of constipation flourishes to a marked degree. Therefore it is important to promote a fairly free evacuation of the bowels daily. Without such an evacuation all other treatment will be unsatisfactory. In the second place it is well to give some intestinal antiseptic to hinder the growth of the organism, such as creasote or small doses of calomel (1/20th of a grain) after each meal. This latter drug in such doses has in my hands proved fairly satisfactory, but some prefer to try to replace the B. coli with a lactic acid bacillus by means of artificially soured milk. Seeing that many of the preparations of lactic acid organisms contain no living bacilli this is less certain than it appears. The B. coli flourishes in an acid medium; it is therefore advisable to alter the reaction of the urine, which should be rendered alkaline by the administration of the drugs usually employed to this end, to which urotropine in 5 or 10 grain doses may be added. This relieves the patient of many unpleasant symptoms and hinders the proliferation of the organism. The urine should be tested from time totime to see that enough alkali is being given, and it is sometimes advisable to give rather more than the usual dose the last thing at night. This will often be successful in procuring a good night's rest without the employment of anodynes.

Should this treatment not be successful in diminishing the numbers of the micro-organisms in the urine and relieving symptoms it is advisable that inoculation should at once be resorted to. It is undoubtedly best to employ a vaccine prepared from the organism which is attacking the patient, and a vaccine can easily be prepared in the course of three days. Inoculations should be given every seven or eight days. The initial dose for an adult of 50,000,000 of dead organisms (estimated according to the method advised by Sir Almroth Wright) will be comfortably tolerated. The second dose should be half as much again, and so on. It is also advisable to have a fresh vaccine prepared each month, better results being obtained than when the same vaccine is employed continuously. This may be explained on one or two grounds. Either the vaccine loses some of its potency or the organism is able to develop power to protect itself from the antibodies produced by the host as a result of the vaccination. It will be remembered that this latter occurs in the case of trypanosomes against which atoxyl is administered. Whichever explanation is correct, the fact remains that greater improvement takes place when the vaccine is freshly prepared every month.

It must always be remembered that the condition, when

once well established, is very refractory, and it is well to start treatment early and to carry it out energetically. The general health must also be seen to and any abnormality should be rectified.

Harley-street, W.

A CRITICAL REVIEW OF SOME CASES OF PERFORATION OF STOMACH AND DUODENAL ULCER.

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It has been my lot within a period of nine months (from March to December, 1908) to deal with 13 cases of perforation of the stomach and duodenum. Some of the cases, indeed all of the cases, were interesting and instructive from some point of view, and I hope that the publication of the abbreviated history in each case will be helpful. For the abstract of the history, and for the trouble taken in working up the details of this paper, I am indebted to my former house surgeon, Dr. F. C. Macaulay.

The gastric cases are taken first, and though counted as 10 in number might be regarded as 12 perforations, for the first case was operated upon for perforation on three separate occasions. Though no perforation was discovered at the first operation, in view of the subsequent history (see Case 1) I think it more than probable that some leakage had occurred. The site of the ulcer on the second and on the third occasion was different. They were both situated, however, close to the pylorus, the second occasion on the anterior wall, and the third on the posterior wall. At the third operation no trace could be found of the previous ulcer on the anterior wall.

That it is possible to have an ulcer so eroding the coats of the stomach or bowel as to give rise to symptoms and signs suggestive of perforation, and yet on examination reveal no macroscopic evidence of leakage, I have no doubt whatever. In Case 9 the sudden and severe onset, accompanied by pro-nounced rigidity and tenderness of the epigastrium and followed by such profound collapse, certainly suggested leakage, and yet, though the ulcer was discovered and the serous coat was carefully examined, no actual hole was seen. I remember on another occasion examining with Dr. A. Johnston, then of Ruchill Fever Hospital, a case of suspected perforation in a man suffering from enteric fever. Neither of us had any doubt that a perforation had occurred, and though in several of the ulcers the dividing line seemed to be no thicker than tissue paper no visible point of leakage was discovered. In both of these cases there was some free fluid in the abdominal cavity, and the serous lining of the bowel was slightly injected. Is it possible that by osmosis an infection of the peritoneal cavity could be brought about, the serous coat over the site of the ulcer becoming, if not dead, so non-resistant as to act like a piece of soaked parchment? It is not infrequent to find in the previous history the record of an attack of pain severe enough to suggest leakage, and one has, unfortunately, known patients lulled into a sense of security by the belief that their present seizure of pain, though more severe, would pass off like the last and refuse operation until it was too late.

Ten of the cases were gastric and three duodenal.

Age and sex.—The ages ranged from 16 to 72 years. The average age over all was 37.7 years. The average age The average age of the gastric cases was 36.8 years, of the duodenal cases 41 years. Of the 10 gastric cases only 3 were in females whose average age was 19 years. The 3 duodenal cases were in men.

Onset.—In 12 out of the 13 cases the onset might be said to be instantaneous; in one (Case 12) the onset was more or less sub-acute. In the majority no food had been taken for some time previously, and the time of perforation was oftenest in the late hours of the evening or in the early Case 4 created a considerable amount of interest, owing to the fact that he was seized while dressing for his marriage. He collapsed, but rallied somewhat and went through the service, only, however, to be snatched from the arms of his bride and handed over to the care of the

young bride accepted the position with that stolid indifference and apparent want of feeling which is said to be so characteristically Scottish.

Previous history.—In eight (Cases 1, 3, 5, 7, 8, 9, 10, and 13) there was definite history of pain after food and other gastric symptoms; in the remaining five (Cases 2, 4, 6, 11, and 12) no history of previous gastric trouble was obtained. The occurrence of gastric symptoms previous to the onset is of considerable diagnostic value. Some of those who stated that they had had no previous stomach trouble admitted afterwards to having at times had feelings of discomfort which they had attributed to flatulence. But the point to note particularly is that a patient's statement as to the previous absence of stomach symptoms does not preclude the possibility of ulcer, nor does it preclude the possibility of the acute symptoms being those due to perforation (Case 12).

Pain.—It is almost considered a surgical axiom that in all cases of severe abdominal crises the pain is first of all referred to the epigastrium—solar plexus, and after some time to the particular seat of origin, to the appendix, to the gall-bladder, to the stomach. In every case of this series pain was a prominent feature, but was quite impossible to define except that it was severe, "doubled him up," "made him cry out," &c., and was equally difficult to locate apart from surface tenderness. The patients were so ill that speaking was an additional agony and as little as possible was said and indeed asked. In six cases, however, the pain was definitely referred to the epigastrium, in other three the pain began around the umbilicus, remaining there in one (Case 13, duodenal) and in the other two becoming epigastric later. In two the pain was felt in the shoulders as well as in the abdomen—both gastric—so that in 9 out of 13 cases the pain was referred to the upper part of the abdomen.

Vomiting subsequent to the onset was stated to have occurred in seven cases (Cases 1, 3, 4, 5, 6, 12, and 13). In three it was stated that no vomiting had occurred (Cases 2, 7, and 10). In three vomiting was a prominent symptom before the onset of the acute attack (Cases 1, 3, and 8). The vomit subsequent to the onset was "stomach contents"; in one case it was "coffee grounds."

Coilapse was a prominent feature in most of the cases, depending upon the length of time since the onset. It was definitely stated to be present in every case to begin with, but passed off gradually in some cases quicker than in others e.g., in Case 2 and in Case 8.

Appearance in most cases was indicative of severe pain; the patient looked very ill; the face was pale with malar flush.

Flatus per rectum.—The length of time subsequent to perforation was so short comparatively that the non-passage of flatus was less important as indicating peristaltic paresis. In two cases flatus was definitely stated not to have passed since onset.

Respiration. —The earlier the case was seen the more likely was the breathing found to be thoracic in type and the more averse the patient was to take a deep inspiration. In five cases the respirations were stated to be wholly thoracic; in three the abdomen was said to have moved slightly; in the others no reference was made to the character of the respirations.

The temperature varied from 97° to 100.8° F. The temperature depended upon the length of time that had elapsed since the perforation.

The pulse varied from 70 to 138 per minute, also evidently dependent upon the length of time since the onset. A gradually increasing pulse-rate is significant.

Abdomen. - Distension was definitely present in four cases (Cases 6, 8, 10, and 13); the longer the time the greater the distension.

Rigidity of the abdominal wall.—This is a sign of much aportance. With one exception (Case 10) it was present in importance. With one exception (Case 10) it was present in every case. In 11 of the cases the rigidity was general, in two it was epigastric, but in every case it was more evident over the stomach. In one case (Case 12) the main rigidity was found on the right side; in another the contraction of the recti was visible (Case 7). The earlier the case the greater was the rigidity. In the only case where it was stated to be absent nearly 60 hours had elapsed from the time of onset

and the general peritoneal cavity was found to be shut off.

Tenderness, abdominal, on palpation was present in every surgeon. In the by-going it might be mentioned that the case with one exception (Case 2) and in that case there had been tenderness which had passed off, and as this case was seen within a few hours from perforation the tenderness from peritonitis had not had time to manifest itself; the ulcer, moreover, was on the posterior wall. In six cases there was epigastric tenderness only; in the remaining seven it was general, with perhaps a greater degree of tenderness in the epigastrium.

Liver dulness.—In ten cases there was some alteration in the liver dulness; in three cases the liver dulness was completely gone (Cases 3, 11, and 1), in seven cases it was encroached upon (Cases 2, 4, 5, 6, 7, 8, and 13) and in three cases the liver dulness was normal (Cases 9, 10, and 12). No actual perforation was found in Case 9; in Cases 10 and 12 the general cavity was not at first affected. In this connexion it is interesting to note that the liver dulness will be found encroached upon after every abdominal section, more especially if it involve the upper area of the abdomen. As the air gets absorbed the normal limits of dulness return. The length of time varies from a few days to a fortnight.

Signs of free fluid in the abdominal cavity were obtained in six cases; in the others these signs were absent or uncertain.

The length of time between the onset and operation varied from 4½ to 80 hours. Seven cases (Nos. 1, 2, 4, 5, 7, 8, and 9) were operated upon under 12 hours; of these 2 died-Cases 7 and 8 (Case 8 was complicated by cirrhosis)

Operation. —In every case to begin with a small vertical incision about one inch in length was made in the suprapubic region. This enables the surgeon at once to ascertain whether there be free fluid in the abdominal cavity and its nature, and the condition of the serous coat of the bowelwhether it be injected or not; it can also be used for subsequent drainage. The amount of free fluid in the abdominal cavity varied; at times it simply welled out, at others the quantity was so small as to be practically non-existent. fluid in appearance suggested dish-water, turbid, with flakes of lymph if the perforation had existed for over six to eight hours and usually odourless. In no case were there solid particles of partly digested food; in one case the fluid had a distinctly alcoholic odour, the patient having taken a glass of brandy subsequent to the perforation. Gas was present, free in the abdominal cavity, in the majority of the cases, accounting for the absence of liver dulness.

Seat of perforation. - The stomach was exposed by a vertical incision made slightly to the left of the middle line. In eight instances the perforation involved the anterior wall of the stomach; in six of these it was towards the lesser curvature and close to the pylorus. In two the posterior wall was the seat: in one of these about its centre, and in the other at the pylorus. In the three duodenal cases the ulcer was situated in the anterior wall of the first part, so that it might be said that in 11 out of 13 cases the ulcer was situated in the immediate neighbourhood of the pylorus.

The size of the perforation varied from that of a pin's head to that of an opening as large as a threepenny-piece. As already stated, no visible perforation was discovered in Case 1 -first operation—or in Case 9.

Closure of the perforation. - In no case was any attempt made to excise the ulcer or to do more than simple closure. This was effected either by a double row of catgut or an outer row of silk and an inner of catgut. In three cases the amount of induration round the ulcer was so extensive and the tissue so friable that the inturning was a matter of some difficulty. A strand of iodoform gauze was led in two of these cases from the abdominal wound to the seat of the perforation as an additional security. I do not, however, consider this a wise procedure, as protective adhesions so soon form and a via media is left for infection.

Flushing the abdominal cavity was in every case carried out with warm saline with drainage from one or both flanks as well as by the suprapubic opening. The abdominal wound was closed by through-and-through silkworm gut stitches.

After-treatment. - In every case the upper end of the bed was placed upon high blocks—Fowler's position—as soon as the shock had passed off. Saline solution was given fourhourly per rectum, and strychnine, either with or without digitalin, was given hypodermically if the pulse demanded it. Nothing was given by the mouth before the end of the third day, the patient being nourished by nutrients administered per rectum, consisting of peptonised milk (4 ounces), saline solution (2 ounces), with brandy if A wash-out enema was given every day. Turpentine enemata combined with the frequent passage of

the flatus tube were of great value in flatulent distension. The glass drainage tube draining the pouch of Douglas was removed on the second day, never later than that; the omentum is apt to find its way into the tube, and if left longer the continuous pressure on the already devitalised bowel has been known to lead to ulceration and the establishment of a fæcal fistula. Oral feeding consisted at first of water in small quantities soon followed by dilute peptonised milk. At the end of seven days farinaceous foods were given; then in another week light diets, fish and chicken, cream, &c.

Complications. - Wounds all healed primarily save in Case 5. where some suppuration formed round a stitch hole. Parotitis followed in two cases (Cases 5 and 9). Case 5 went on to suppuration; Case 9 subsided under lead and opium lotion. Hæmorrhage persisted from the wounds and from the stomach in Case 8 for some days-attributed to the cirrhotic condition of the liver.

Mortality.—If the gastric cases be taken alone (10 cases) 6 recovered, 60 per cent.; and 4 died, 40 per cent. The three cases of duodenal ulcer died, in each case within 24 hours from operation. In Case 12 the ulcer was only discovered post mortem, it was not found at the operation.

PERFORATION OF GASTRIC ULCER.

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PERFORATION OF GASTRIC ULCER.

Cast 1.—This case is unique, having been operated upon on three separate occasions as unique, having been operated upon on three separate occasions as unique, having been operated upon on three separate occasions as unique, 1908; the total of the comman. It is also that the last efforts that the control in August 1908; the total of the comman. It is also that the control in August 1908; the control in August 1908; the total of the control in August 1908; the control in August 1908; the control in August 1908; the control in August 1908; the control in August 1908; the control in August 1908; the control in August 1908; the control in August 1908; the control in August 1908; the control in August 1908; the control in August 1909; the control in A

after perforation. A suprapuble incision was followed by the escape of milky fluid. The bowel was congested and on searching for the appendix it was found normal. Incision was then made over the stomach; fluid and gas escaped. A perforation, an eighth of an inch across, was found on the anterior wall close to the pylorus. This was closed with catgut and silk. A drainage-tube was then inserted in the right flank and the abdominal contents were washed with warm saline solution. The abdomen was closed with through-and-through salmon-gut sutures, a glass drain being left in the suprapuble wound. After-treatment: Fowler's position was adopted. The patient was given saline solution per rectum and strychnine every four hours. Nutrient enemata were administered. The glass tube was removed on the 21st; the pulse then was 92 per minute and the temperature was 99? The bowels were moved on the 22nd. Thence the patient made steady progress till he left on June 24th.

CASE 4.—A man, aged 26 years, was admitted on Sept. 23rd, 1908, at

bowels were moved on the 22nd. Thence the patient made steady progress till he left on June 24th.

CASE 4.—A man, aged 26 years, was admitted on Sept. 23rd, 1908, at 1.50 A.M. At 7 P.M. on the 22nd, while dressing for his marriage, he was selzed with sudden pain in the abdomen which was sufficiently severe to make him cry out. The pain was referred to 1 inch above the umbilicus in the middle line. He vomited stomach contents and became quite collapsed. The pain then subsided a little and he went through with the marriage ceremony. Thereafter the pain became worse and was general all over the abdomen, vomiting occurring several times. His bowels, which had always been regular, were moved on the day of onset of illness. No previous stomach history was obtained. Dr. W. K. Peden was called to see him, recognised the condition as one of perforation, and sent him at once to the infirmary. On admission the patient was in great pain and was very restless, tossing about but keeping his legs drawn up. The face was pallid with malar flush; the tongue was furred but moist. The abdomen moved slightly with respiration and was not distended. Both recti stood out visibly and on palpation general rigidity was pronounced. There was also general tenderness, very acute 1 inch above and slightly to the right of the umbilicus. Percussion was clear in front but dull in both flanks. The liver dulness (nipple line) was 3 inches. The pulse was 104 and the temperature was 99:20 F.

Operation was performed by Mr. Grant Andrew 64 hours after the conset. A suprapulce incision was followed by escape of vellow weters.

temperature was 99.2° F.

Operation was performed by Mr. Grant Andrew 6½ hours after the onset. A suprapuble incision was followed by escape of yellow watery fluid with lymph flakes. On opening in the epigastrium fluid and stomach contents escaped. A pinhole perforation was found on the anterior wall, lesser curvature, quite close to the pylorus. This was closed by a double Lembert suture of catgut and silk. The abdomen was then irrigated as usual with drainage through the right flank in addition to the wounds in front, and the abdomen was closed with through and through salmon gut. After-treatment: Fowler's position was adopted. Saline solution per rectum and nutrient enemata were given. On the 24th both tubes were removed and water was given by the mouth. On the 25th both pulse and temperature rose, but were normal the next day on the discontinuance of the fluid by the mouth. The bowels were moved on the 27th. Nutrients were stopped entirely on Oct. 5th, and the patient left well on the 28th. Since then he has been back looking well.

CASE 5.—A male, aged 51 years, was admitted at 11.45 P.M. on Sept. 23rd, 1908. At 4 P.M. that day he felt sudden acute pain in the epigastrium and became prostrated. Vomiting occurred several times, and as his symptoms did not lessen in severity a medical man was called in who ordered his removal to hospital. There was a definite history of gastric ulcer for three years with aggravated symptoms for two months. On admission the patient looked very ill and was evidently suffering greatly. The tongue was dry and furred. The abdomen was very rigid and generally tender, both signs being most notable above and to the left of the umbilicus. The liver dulness was 2 inches in the nipple line. Signs of free fluid were obtained. The pulse was 90 and the temperature was 99.6° free fluid were obtained. The pulse was 90 and the temperature was 99.6° free fluid were obtained. The pulse was 90 and the temperature was 99.6° free fluid were obtained. Operation was performed by Mr. Grant Andrew 64 hours after the

was 99.6° F.

Operation was performed 9½ hours after perforation. The usual incisions showed typical fluid in the abdomen. The perforation was in the anterior wall, lesser curvature, and near the cardiac end; there was marked induration all round it. It was repaired by continuous catgut and silk stitches. Saline irrigation and drainage were carried out as usual. After-treatment: Fowler's position was adopted. Saline solution and nutrients were given per rectum every four hours. The drainage-tubes were removed on the 26th and the patient did very well until Oct. 4th, when parotitis of the right side developed with rise of the pulse and temperature. He left well on Dec. 12th, and since discharge has been back looking in good health.

CASE 6.—A female, aged 19 years, was admitted on Oct. 31st, 1908. 12 hours before admission she was selzed with sudden agonising abdominal pain, at first round the umbilicus, in the back, and both shoulders, and later over the stomach. She vomited stomach contents and was completely collapsed. Improvement shortly took place and

minal pain, at first round the umbilicus, in the back, and both shoulders, and later over the stomach. She vomited stomach contents and was completely collapsed. Improvement shortly took place and she felt more comfortable till six hours later, when the pain became aggravated, being felt generally all over the abdomen. She again vomited several times, the vomit being gastric contents. On admission the face was pallid; the tongue was clean and moist. The temperature was 94°F and the pulse was 138 and full in volume. The respirations were wholly thoracic. There was great distension of the abdomen. Percussion revealed the presence of fluid free in the general abdominal cavity. The liver dulness in the nipple line was two inches. Rigidity, while general, was extreme over the stomach, the same applying to tenderness, which was agonising at a spot midway between the xiphoid and the umbilicus. There was a history of gastric ulcer, which had, however, ceased to trouble her two and a half years before.

Operation was performed by Mr. Grant Andrew 13 hours after the onset. The abdomen was opened above the pubes by a small incision and was found full of fluid, which gushed out; it contained large lymph flakes and mucoid matter. The epigastric incision was followed by a rush of gas and fluid. A small, cleanly punched-out perforation was found in the anterior wall, near the cardiac end; this was closed by a double Lembert's suture of catgut and silk. Then followed flushing with warm saline solution and drainage in the flank and in front. After-treatment: Fowler's position was adopted when shock had passed off. Saline solution per rectum (one pint) and had an ounce of brandy were given every four hours. Strychnine and digitalin were given every four hours and the patient received nutrients. On Nov. 1st she was very restless. The pulse was 163 and the temperature was 103.2°. Flatus was passed. On the 2nd the glass tube was removed from the suprapuble wound. The pulse was 163 and the temperature was 103.2°. That was passed. On

7.30 A.M. on Nov. 3rd. This case was sent in by Dr. William Lawson with

7.30 a.m. on Nov. 3rd. This case was sent in by Dr. William Lawson with the diagnosis of peritonitis, due probably to perforated gastric ulcer.

Case 7.—A male, aged 46 years, was admitted on Nov. 18th, 1908, at 11 a.m. While at work two hours before he was seized with agonising pain situated at first round the umbilicus, and later in the epigastrium and over the stomach; he became quite collapsed. Vomiting did not occur then or subsequently. After sitting outside for two hours he was brought along to the hospital. There was a history of pain and coffee-ground vomiting for a long time back. On admission the patient looked very ill, with pallid face and cold clammy skin. The pulse was 70 per minute and very weak; the temperature was 97.6° F. He abdomen was not distended, and it moved with respiration. Both recti were visibly contracted. Rigidity was present all over, being extreme in the epigastrium. There was slight epigastric tenderness, but no general tenderness. Percussion was clear in front and dull in the flank—rice-versi when the patient lay on his side, the note in the upper flank—theing resonant then. The liver dulness was encroached upon as regards its lower border by two inches. It was also noticed that the man lay with his legs drawn up.

heing resonant then. The liver dulness was encroached upon as regards its lower border by two inches. It was also noticed that the man lay with his legs drawn up.

Operation was performed by Mr. Grant Andrew six hours after perforation. The usual suprapuble incision revealed yellowish watery fluid with large lymph flakes in it. On incising the epigastrium a large perforation was found on the anterior wall, lesser curvature, near the pylorus. Induration extended for fully half an inch all round its circumference. It was closed as usual, a much larger portion of the stomach wall requiring to be invaginated to obviate the indurated base. The abdomen was then irrigated with a rubber drain in the flank. The operation was completed as usual save for the introduction of a strand of iodoform gauze, which was packed down to the site of the perforation in case there might be further leakage. Drainage was provided for by two tubes, glass and rubber. The fluid found in the abdomen had a distinctly alcoholic odour, the patient having taken a glass of brandy after the pain began. After treatment: Fowler's position was adopted. The patient was given nutrient enemats of peptonised milk (4 ounces), saline solution (2 ounces), and brandy (5 ounce). On the 19th his pulse was 100 and the evening temperature was 1016°. Flatus was passed by the rectal tube. On the 20th the glass tube was removed. The patient was much the same. On the 22nd the bowels were moved in bed, so nutrients were stopped. The gauze was removed from the epigastric incision. On the 23rd the pulse was 84. Milk and water were given by the mouth; there was no pain, tenderness, or distension. On the 30th the pulse was 16; the patient looked very ill. The abdomen showed of peritonities or of localised collection. The temperature was 99°. On Dec. 1st he gradually sank and died at 3 P.M. No necropsy was allowed.

Case & A. Male, aged 43 years, was admitted on Dec. 26th, 1908, at

no sign of peritonitis or of localised collection. The temperature was 399. On Dec. 1st he gradually sank and died at 3 r.m. No necropsy was allowed.

Case 8.—A male, aged 43 years, was admitted on Dec. 26th, 1908, at 3 A.M. The night before, at 11 r.M., he complained of sudden excruciating pain in the abdomen and became collapsed. Dr. D. Lamb, who was called in, sent him into the infirmary at once. Four years before he had acute pain and coffee-ground vomiting after food. These symptoms had abated, but returned a month before admission. There was also a history of immoderate indulgence in alcohol. On admission the patient was very drowsy and insisted upon going to sleep. He had no pain and lay comfortably on his right side with his legs drawn up. The breathing was thoracic. The abdomen was moderately distended and, while very rigid all over, was specially so in the epigastrium. Tenderness was ac: te over the stomach, more so to the right of the middle line. The u ual signs of free fluid were present, and the liver dulness was encroac; ed upon, measuring two and a half inches in the nipple line. The pul e was 96 and the temperature was 97.6° F.

Operation was performed by Mr. Grant Andrew at 4 A.M., five hours after perforation. On opening the abdomen above the pubes the turbid fluid typical of perforated gastric ulcer was found. The usual epigastric incision was made, and oy drawing out the stomach a tiny perforation was found almost on the pylorus, anterior wall. The liver was found to be extremely hobnailed. The perforation was closed as usual, and after making a drainage wound in the right flank the abdomen was irrigated with warm saline solution. Drainage was provided for by glass- and rubber-tubes in the hypogastrium and flank respectively. Iodoform gauze was also packed down to the site of the ulcer. After-treatment: Fowler's position was adopted. The patient was given saline solution per rectum alternately with nutrient enemata four-hourly. On the 26th the pulse from 96 ran up to 130 in the evening. The

died.

CASE 9.—A female, aged 22 years, was admitted on Dec. 27th, 1908, at 2 A.M. The night before, at 11 P.M., extremely severe pain developed over the stomach. The pulse was feeble and almost imperceptible. There was great rigidity of the epigastrium and excessive tenderness there. She seemed so ill that perforation was suspected. Mr. Grant Andrew, who saw the case in consultation with Dr. Hugh Kelly, considered the case sufficiently urgent for exploratory laparotomy. The pulse was 90 and the temperature was 97° F.

Operation: The suprapuble incision was negative. The anterior wall of the stomach when examined through an epigastric incision was

Operation: The suprapuble incision was negative. The anterior wall of the stomach when examined through an epigastric incision was found normal. The posterior wall was then examined and an ulcer was found at the pylorus. The base of the ulcer was much thinned down, consisting practically of the serous coat. There did not seem to be any actual perforation. The abdomen was closed with through-and-through salmon gut. After-treatment: The patient was given nutrients of peptonised milk and saline solution for the first week, during which there was no oral feeding. During the second week dilute peptonised milk was given by the stomach. With the exception of a parotitis which subsided without suppuration convalescence was entirely satisfactory and the patient left well on Jan. 26th with symptoms of several months' duration quite gone.

CASE 10.—A male, aged 72 years, was seen in private with Dr. H. C. Leask at 9 p.M. on Jan. 20th, 1909. On Monday, the 18th, while at business, the patient was seized with sudden severe abdominal pain and had to go home in a cab, even although his house was quite near. There

The pain gradually became less, but did not entirely go away. Hiccough also became troublesome. The bowels had not been moved for two days before the onset nor had they been moved up to the time of the consultation on the 20th. No flatus had been passed for two days. The abdomen was moderately distended and was not rigid. There was a little tenderness in the epigastrium, but none elsewhere. The liver dulness was normal and there was no dulness in the flanks. The case was regarded as one of malignant disease of the large bowle, probably at the splenic flexure. On the next day, Jan. 21st, it was reported that flatus had been passed during the night and that the natient was at any rate on worse.

reported that flatus had been passed during the night and that the patient was at any rate no worse.

Operation was performed by Mr. Grant Andrew at a nursing home. The abdomen was opened by a suprapuble incision and free fluid was found, but with no special characteristics. On pulling down the transverse colon stomach contents were observed evidently in part shu off from the general cavity. A perforation was found in the anterior wall of the stomach about two inches from the pylorus, with omentum adherent around it and almost closing it. The serous coat of the stomach was stained black all round the ulcer, the result of administration of bismuth for dyspepsia of many years' standing. The amount of induration in the immediate neighbourhood of the perforation rendered it difficult to close. Though the probability was that the ulcer was malignant there was no positive evidence of that fact. The opening was closed and drainage was established in the flank and pelvis. The patient had a good night after the operation, and his loweds.

PERFORATION OF DUDDENAL LUCER

PERFORATION OF DUODENAL ULCER.

ition. No examination was allowed.

Perforation of Duodenal Ulcer.

Case II.—A male, aged 43 years, was admitted at 2.30 a.m. on March 7th, 1903, as a case of appendicitis. On Friday, the 6th, at 9 a.m. he felt very acute pain in the abdomen, which quite doubled him up. No further history was obtained. On admission the patient looked extremely ill, with short hurried respirations, 50 per minute, entirely thoracic. Rigidity and tenderness were both generalised over the abdomen, but were most marked on the right side. The percussion note was tympanic. The liver dulness had disappeared. The temperature was 99.20 F. and the pulse was 120.

Operation was performed by Mr. Grant Andrew 243 hours after perforation. A suprapubic incision allowed purulent matter to escape. The appendix was identified and found normal. Gas escaped freely when an incision was made in the epigastrium. A perforation was fushed with warm saline solution and drained. After-treatment: Fowler's position was adopted. Nutrients were given per rectum, strychnine, &c. The pulse gradually got worse, rising from 126 to 150, and the patient died at 6 P.M. the same day.

Case 12.—A male, aged 26 years, was admitted on Oct. 31st, 1908, as a case of appendicitis. The history was that of having felt unwell for eight days without definite symptoms beyond headache and constipation. On Thursday, the 29th, he felt slight epigastric pain and also vomited, a symptom which had not recurred up to admission. There was no history of dyspeptic symptoms. On admission the face was pallid with malar flush and sweating freely. The abdomen was not distended and moved with respiration. Tenderness was marked in the epigastrium and right lilac fossa, and rigidity was personal all along the right rectus and also in the epigastrium. The re in where pain was most complained of was in the right iliac area. Over the appendix there were relative dulness, fulness, and gurglin are was 93.40. The leucocytes numbered 6700 per cubic millimete. On the next day the pulse was 34 per minut

At the post-mortem examination hemorrhagic areas were found in the small bowel, but with no ulceration in these parts. On the first part of the duodenum there was a large chronic ulcer with a minute perforation in the centre through which leakage had occurred. Round the perforation there were adhesions of a soit nature and a large effusion of lumnh

perforation in the centre through which leakage had occurred. Round the perforation there were adhesions of a soft nature and a large effusion of lymph.

Case 13.—A male, aged 54 years, was admitted at 10 p.m. on Nov. 4th, 1908. The history showed that at 6 o'clock on the previous evening he was seized with very severe pain. This began around the umbilicus where it remained constant; in consequence he became quite collapsed. His bowels were moved on the morning of the 3rd, but not since, nor was fistus passed subsequent to the onset of the pain. He vomited once, the vomit being merely gastric contents. He received treatment at home for intestinal obstruction. As regards the previous history, for some years he had had slight pain after food, not occurring after every meal but felt now and again at long intervals. On admission the patient looked very ill, with pallid face. His tongue was covered with a thick, white fur. The position he voluntarily adopted was that of dorsal decubitus, with the legs drawn up. The temperature was 100.85 f. and the pulse was 106. The respirations were entirely thoracic. There was considerable fulness of the abdomen, uniformly distributed. General rigidity was present, most evident in the epigastrium, where it was of stony hardness. Tenderness also was a well-marked feature, being clicited all over the abdomen and in particular one and a half inches above and to the right of the umbilicus. It was more severe all over the right of the umbilicus. It was more severe all over the right side than on the left. On percussion a clear note was obtained in front, and dulness in both flanks. When the patient lay on his side, however, the uppermost flank did not become clear. One inch of liver dulness remained.

Operation was performed by Mr. Grant Andrew at 11 p.m., 29 hours after the onset. A surranulci neiging of one inch was fallowed the after the onset.

of liver dulness remained.

Operation was performed by Mr. Grant Andrew at 11 P.M., 29 hours after the onset. A suprapuble incision of one inch was followed by a rush of gas and fluid of a turbid and yellowish nature. The source of the fluid was found to be a perforation, about the size of a threepenny piece, in the anterior wall of the first part of the duodenum. This was closed by a double Lembert suture, the first layer of catgut and the second of silk, and a piece of omentum also was tacked down over it. The abdomen was flushed with warm saline solution, drainage being

established through both flanks and a glass tube in the suprapuble wound. After treatment:—Fowler's position was adopted. The patient received saline solution per rectum, strychnine, four hourly, &c. He grew rapidly weaker and died 52 hours after the operation. Glasgow.

THE SELECTION OF PATIENTS FOR SPA TREATMENT.1

BY NEVILLE WOOD, M.D. DURH., M.R.C.P. LOND.

As in the time allotted I have in more senses than one a great deal of ground to cover I will dispense with prefatory remarks and plunge at once in medias res. There is apt to be a certain evasiveness about balneological literature—a vice which is only to be avoided by bringing the fundamental facts into close apposition. Let me, then, ask your attention to a series of propositions, which, moreover, will save much repetition later on. 1. The principal aim of spa treatment is the furtherance of metabolism and the promotion of excretion. 2. The treatment, consisting as it does of the specialised use of what are known as natural remedies, is to be considered in relation to patients who cannot or will not employ those means at home, or who for some reason are not amenable to drug treatment. 3. Though spa treatment is often merely an alternative for other methods, it is pre-eminently suitable for cases on which it is desirable to concentrate a number of differing influences. 4. Spas may be used for prophylaxis, but climatic stations are to be preferred for convalescence. 5. Whenever there is a suspicion of visceral disease, a re-examination of the patient should be made immediately before his departure. 6. The best results from balneotherapy are obtained in the middle-aged and in young adults, while children and old people are more benefited by climatic influences. 7. Only by the most careful application of general principles can patients be properly selected for spa treatment; for though it has contributed much to the art of healing it has not added a single specific to the science of medicine. 8. The maxim "Non our atur qui our at" applies with especial force to those who are sent away from home. Full benefit can only be expected when the patient can leave business and domestic worries behind, and can face with equanimity the cost of the treatment and of the amenities of spa life.

Bearing these propositions in mind, let us pass in review the resources available and the manner in which they are turned to account, beginning with atmospheric influence

At all spas it is considered of primary importance that the climatic conditions should permit of the enjoyment of abundance of fresh air. As if by a providential arrangement, mineral springs are usually found at a moderate altitude, in valleys clad on their slopes with sheltering trees, and shielded from the colder winds by the disposition of their neighbouring mountains. Where natural shelter is insufficient art steps in, supplying it by the construction of embankments, the erection of shelters, and by plantations of trees. A special advantage of such carefully planned shelter, in these resorts, is that patients may return to the open air comparatively soon after taking even a very hot bath.

Next, with regard to exercise, at most continental health resorts many miles of splendid walks have been laid out Directions, distances, and gradients are so plainly indicated that regulated walking exercise is easily planned and carried out. While to meet the needs of those who will not exert themselves, except, so to speak, under the eye of a ganger, there are nearly always Zander gymnastic institutes, where every muscle can be brought into play, while in addition, manually given movements are available for those who may require them. In any case the custom of promenading while drinking the waters induces the patient almost unconsciously to take walking exercise to a fair extent.

Diet at the spas is a ticklish subject to handle, and in print we find it treated with a reserve which, though prudent, is uninforming. In former days the diet was governed by the name of the disease, or was influenced by the supposition that some of the articles of every-day consumption would clash with the action of the mineral waters. Physicians handed to the patient a stereotyped diet-sheet, and adherence to its restrictions was demanded. These

¹ Abstract of the Presidential Address read before the West London Medico-Chirurgical Society on Oct. 8th, 1909.

printed lists are now seldom seen, and it is the fashion to say that the diet is ordered according to the constitution of each individual. In practice, however, what often happens is this. The forbidden and the permitted articles are written out in parallel columns, but when any of those allowed are distasteful to the patient, or any of those banned are more acceptable to him, an interchange of the items is effected. Now, used with discretion, that is by no means a bad way of arriving at a suitable diet for some patients. But when rigid restriction is necessary the attempt to control hotel cookery is often a signal failure, and the medical man can seldom count upon knowing the exact composition of his patient's repasts. It is true that at Homburg and some other spas commendable attempts have been made to solve this difficult problem of hotel cookery for invalids. Nevertheless, my present information leads me to believe that a patient sent away from home for a cure dependent chiefly on diet should be placed in a sanatorium, where the kitchen is under the direct supervision of a medical expert, and where whatever is ingested is controlled in accordance with the results of a scientific investigation both of the secretions and the excretions.

The next, and of course in many instances the principal resource, is the bath. Of chief importance in balneotherapy is the thermal factor. Next to that perhaps comes the dynamic factor-that is, the influence of water in motion. This is brought to bear in several different ways. At Plombières, by means of the "douche Bottentuit," a jet of water from a submerged pipe with a special nozzle plays upon the abdomen while the patient lies in the bath. At Mont Dore the bather stands or sits while a stream of very hot water falls upon him from above. At Aix-les-Bains the douche is projected from a short distance, massage being given at the same time. At Vichy the water falls on the recumbent patient from perforated roses as from a series of watering pots.

The mineralisation of a bath is of importance quantitively rather than qualitatively. By this I mean that the action of the dissolved salts depends chiefly on their concentration. The mineral elements act by conveying a stimulus to the cutaneous nerves primarily and through them to the general nervous system. They also render the skin hygroscopic, and thus modify its evaporative function.

I will pass now to the uses of mineral water taken internally. Some springs are so richly mineralised that an ordinary glass—9 ounces—represents a tangible pharmacentical dose of their salts. Hence their primary action requires no explanation. Such springs are the Choussy Perrière of La Bourboule, the alkaline springs of Vichy, and the Marienbad Kreuzbrunnen. Many, perhaps the majority of cases, in which arsenic, sodium bicarbonate, and sulphate are indicated, can be treated just as well at home by these agents given in the conventional 6-ounce mixture. are instances, however, in which the natural water answers better than the pharmaceutical product, a fact of which we are impelled to seek for an explanation. Some impute the difference partly to the imagination and partly to the change in the patient's whole manner of life; others, among whom are of course the spa practitioners, assume that the products of Nature's laboratory are always superior to those of the chemist, that minimal quantities of other salts contained in these waters are important adjuvants, or that there exist in them unknown elements of high therapeutic potency. These last suggestions are not to be dismissed with contempt. There exist springs of extremely feeble mineralisation containing only salts considered pharmacologically inert, yet the waters of which have been drunk by thousands of patients for hundreds of years and still maintain their popularity.

I now come to cases in which elimination by the kidneys is indicated. In these we find that pharmacy supplies us with a great variety of agents which may successfully compete with the products of the springs. In deciding, therefore, whether or not to send patients to them, we have to consider the general and the specific resources of the spas, while laying more stress on the former. Vichy and Neuenahr are the chief spas at which elimination by the renal route is promoted by the use of the alkaline waters to be found there. Vichy has a splendid bathing establishment, the best in France, and the only one fully equal to the corresponding institutions in Germany, but I must add with regret that it is one of the most badly kept French inland watering places. English patients, once a numerous contingent, have dwindled in number, but as the loss so sustained is made up by visitors from southern countries the stimulus to amendment is lacking. Neuenahr does not as yet attract many British invalids, so that those who go there will find it rather dull unless they have some familiarity with the German language. Curiously enough, Neuenahr is rather untidy-a rare exception among German spas.

Recently, waters of a different type have been advocated for renal elimination. The features they have in common are, besides the presence of lime, the small percentage of dissolved salts, which in some instances amount to less than 0: 5 part per mille. A special point is made of their poverty in chlorides, a quality of great importance for those who lay stress on Widal's chloride deprivation theory. The stronger of these waters are found at Vittel, Contrexéville, and Wildungen; the weaker at Evian and Aix-les-Bains.

For centuries cystitis has been treated by the stronger waters of the earthy group as well as by those of the alkaline type, but probably in the future both sets of waters will be used merely as adjuvants since Sir Almroth Wright has shown us how to deal with the causative bacterial infections.

The slighter cases of nephritis are claimed by the renal spas just referred to, while there is a spring at St. Nectaire which is said to be specially beneficial when there is an associated phosphaturia. It need scarcely be said that in nephritis a suitable régime is of greater service than the use of any mineral water, and hence no very lasting benefit is to be expected from a sojourn at these spas; but if you desire to send a patient for a holiday to a place where his condition will be understood it is well to bear them in mind.

The spas whose speciality is elimination by the bowel are those with waters containing sodium sulphate, as Marienbad, Karlsbad, Brides-les-Bains, and Cheltenham. It is, of course, claimed that the fresh natural salt is more powerful in its action than the artificial pharmaceutical preparation. I have not been able to satisfy myself that this is the case, and I believe that if merely an aperient action is desired there is no special advantage in these waters. If, however, we look a little further ahead, to the restoration of the normal functions of the bowel, they are of the greatest possible value. The simplest explanation seems to be that they act, so to speak, as bowel lotions, and that they contain something which as it passes along the intestinal tract has a more beneficial influence locally than any corresponding pharmaceutical preparation. A curious point in connexion with sulphate waters is that in Germany and Austria it is believed that the cold waters have a much stronger aperient action than the hot, and that the function of the hot Karlsbad water is rather the treatment of diarrhoea. This is of practical importance, for if you happen to send to some of the Karlsbad physicians a patient suffering from constipation he is not unlikely to be told that the selection has been faulty and sent on to Marienbad, where the waters are cold. Brides-les-Bains is very much smaller than either of these places, much quieter, and less expensive. The waters are not very strong, and are so held suitable for cases not requiring drastic treatment.

Cheltenham deserves better appreciation than it receives. For many Anglo-Indians requiring eliminatory treatment it is superior to Karlsbad in all but prestige and hotel accom-The climate is mild and well suited all the year modation. round for those who have lived in the tropics, while, if the patient requires bracing, a short tram ride takes him to a hill where the air, though soft, is invigorating. In addition to the sulphate spring there is an alkaline water akin to that of Vichy. Cheltenham has, in being available at all seasons, an important advantage over its continental competitors, which are at their best only in the early part of the

It is universally admitted that the arthritic group of diseases—gout, rheumatism, and rheumatoid arthritis—are typically suitable for balneotherapy. These affections are placed in the list of indications by almost every wateringplace in Europe, but the only sound method of selection is to regard, not the name of the disease, but the associated constitutional condition, which must be essentially one of disordered metabolism, generally coupled with defective elimination.

At Aix-les-Bains local treatment by baths and massage has been brought to greater perfection than elsewhere, and the heat of this place, lasting well on into the evening, is of much

advantage to patients taking frequent baths at high temperatures. For the same reason the mild climate of Bath makes it the best spa in England for the more delicate arthritics. Moderately robust invalids may suitably be sent to Droitwich for treatment by the strong brine found there, or to Harrogate, where there is a considerable variety of waters. The waters of Buxton are so feebly mineralised that it is difficult to explain the good results obtained there. Woodhall Spa may be described as a quiet place for quiet people or a sleepy place for sleepless people, but do not send patients to whom the brightness of continental spas appeals to Woodhall unless you are prepared to have them upbraid you for dooming them to a foretaste of the Buddhist Nirvana.

Perhaps one of the most interesting problems in practical balneology is that of the value of the treatment of heart weakness by salt and carbonated baths, initiated by the late Professor Benecke of Nauheim. Its adequate discussion, however, would require more time than is now at my disposal. When good results are obtained I believe they are to be ascribed chiefly to an improvement in general metabolism in which the cardio-vascular system shares. It is an error to suppose that "Nauheim treatment" and treatment at Nauheim are convertible terms. Physicians there do not consider themselves restricted to the employment of baths and scheduled exercises. They treat the patient, in fact, according to his condition, whether this implies simply inspiring him with hope and arranging for the supply of plenty of fresh air with suitable diet, keeping him in bed and administering drugs of the digitalis group, or the use in combination of modern physico-chemical methods.

The spa treatment of syphilis was for many years almost a monopoly of Aix-la-Chapelle. Now Aix-trained rubbers are to be found in London and other large cities, while at many spas Aix methods have been successfully copied. In Germany the chief alternative spa is Wiesbaden and in France Uriage. Aix-la-Chapelle is a large town. It has luxuriously equipped baths, but otherwise has no special attraction. The disadvantage in sending a patient there is that he is thereby practically labelled as suffering from a loathsome disease. This is well recognised at Aix, and strenuous attempts are made to attract arthritic and other patients for whom sulphur water is commonly prescribed, but as over 60 per cent. of all the patients and over 80 per cent. of the English patients who go there are the subjects of specific disease the stigma, whether deserved or not, is not an easy one to efface.

The conditions of life at Uriage are such as to render it an ideal place for the treatment of syphilis. The composition of the water is exactly that which theoretically is required, and, what is more important, the results obtained are excellent. It has been shown that in syphilis the body suffers a considerable loss in iron, in lime and soda salts, and a still greater loss in the element sulphur, which last must be of importance, since there is in the blood twice as much sulphur as iron. Now, it is precisely these substances that are contained in Uriage water, which, be it also noted, is isotonic with the blood. It is therefore reasonable to suppose that this water is ideally adapted to effect a correct remineralisation. Though it cannot be claimed as a fresh specific, the mercury-sulphur synthesis is, I believe, the most effective method known for the destruction of the syphilitic virus. There is one contra-indication to the combined use of mercury and sulphur—irritability of the bowel. This is probably due to the fact that both these agents are intestinal irritants. It must also be remembered that in nephritis all intensive mercurial treatment is dangerous.

In conclusion, I propose to draw a few comparisons between French and German spas. In France the spatowns seem to have grown up naturally, as do English towns, the comparatively wide village main road developing into the principal street by the erection of the finest buildings, and minor streets shaping themselves as requirements have grown, without any prevision that when the town increased in importance their narrowness would cramp its grandeur. In Germany, whether this foresight has been actually exercised I do not know, but towns when fully developed look as if they had originally been laid out with a view to their ultimate expansion. The result is that German spas have better planned and more spacious public recreation recounds, and that the streets present an air of greater

dignity. In France some of the spas are shamefully kept; the banks of lovely little streams are strewn with ordure, and along the roads there are sights so disgusting that they are best left undescribed. In Germany, on the other hand, we find a cleanliness so scrupulous that it is reminiscent of the deck of a man-of-war.

In France the tendency is for each spa to specialise in the class of cases it seeks to attract. We are given a list of the diseases considered to be amenable to the treatment, and also those which on no account should be sent. Both in selection and rejection, but chiefly in the latter, these lists sometimes seem to be quite arbitrary. As an example, it is stated of one of the springs that the water has no influence above the diaphragm. In Germany, on the other hand, many resorts claim to benefit nearly the whole list of the diseases, and this because, less regard being had to the specific nature of the disease than to underlying constitutional conditions, it is held that these can be beneficially influenced in one way or another by totally dissimilar therapeutic agents. In general balneological equipment the Germans hold a decisive lead. The personnel of the bathhouses is under better discipline, and to secure proper attention incessant tipping is not required, as is so frequently the case in France.

It is frequently said that in France there are more distractions, but I think that if villages and towns of the same size are compared in the two countries there will be found only one difference. In Germany public gambling is forbidden, whereas in France even quite tiny spas provide this form of amusement, if that is the proper name to give to games which steadily transfer bullion from the pockets of the players to those of the managers of the casinos. As M. Blanc of Monte Carlo remarked: "Rouge wins sometimes, Noir sometimes, but Blanc always."

For a short time, during and after the Boer war, Englishmen were liable to insult in either country. That is a thing of the past, but I have not been able to notice that the recent Anglo-French entente or Anglo-German recriminations have made the attitude of the French more friendly or that of the Germans more unfriendly.

My reason for making these remarks and many others scattered through this paper is that the environment and general resources regarded in connexion with the temperament of the patient are often more important than the analysis of the waters with reference to the name of the disease.

Elvaston-place, S.W.

OBSERVATIONS ON ANKYLOSTOMIASIS AND ITS COMPLICATIONS IN EASTERN BENGAL.

BY R. W. BURKITT, F.R.C.S. IREL.

By the evidence of the microscope and the results of treatment one finds that in this part of the country a very large proportion of the illnesses and deaths have as their predisposing factor the ankylostome worm. This climate is hot and very damp, and the country is low lying. There is no proper disposal of fæces: the tanks, rivers, and streams are used in this order—for defæcation, urination, washing of body, washing of clothes, washing of mouth, and then drinking. Pumps are practically unknown; the eating of earth is common; food is only slightly cooked. The habits of the natives are particularly favourable to the spread of this worm. The following observations are very noticeable: that the more low-lying and damp the situation, the more congested with habitations, the more impure the drinkingsupply, the more dirty the habits of the natives, and the closer defecation takes place to the dwellings, the greater will be the number of persons infected by and suffering from ankylostome worms. The reverse of these conditions will show a proportionately smaller number infected. When the soil dries up in the dry season this disease decreases remarkably.

town increased in importance their narrowness would cramp its grandeur. In Germany, whether this foresight has been actually exercised I do not know, but towns when fully developed look as if they had originally been laid out with a view to their ultimate expansion. The result is that German spas have better planned and more spacious public recreation grounds, and that the streets present an air of greater

a day instead of indigestible food twice a day. Rice and pulse as eaten by the native here are of very little value to him. They are boiled for only half an hour and merely the outside surface is digested; hence the residue is large and he therefore eats and defecates largely twice a day (the microscope showing the fæces to be principally made up of undigested rice).

The commonest symptoms here in adults are weakness and irregular diarrhœa; the commonest clinical signs are anæmia (often profound), ascites, and dropsy of the legs and the external genitals (made much worse by their habit of squatting). The most certain position to look for anæmia is the mucous membranes of the mouth, but especially the soft palate; the observer may often be misled by the conjunctiva. There is no condition here which can cause, clinically speaking, such profound anæmia as ankylostomiasis, neither chronic malarial saturation nor chronic dysentery or starvation can do so. In children the signs are often extremely vague and continue to be so until death unless treated; they will always complain of weakness and often of irregular diarrhoea, but they need not show much sign of anæmia. In both adults and children probably the only universal symptom is a feeling of great weakness and the next most common complaint is irregular diarrhea.

In this country it would be quite safe to treat every case of dropsy among natives for ankylostomiasis; in children these cases are often complicated by round worms, but it is more likely that the ankylostome and not the round worm causes the œdema. Unfortunately this disease is particularly common during gestation, probably on account of the incurable native habit of eating clay during that period and on account of the mother staying so much at home in her fæcally infected area. In these cases the prognosis is bad for both mother and child if not treated at once; either miscarriage takes place at a late period of gestation or the child is born dead or dies soon after birth, or the mother dies during labour (generally from hæmorrhage), or after labour

from many complications.

The two most frequent accompaniments of ankylostomiasis in these parts are amobic dysentery and ulcerating mouth. In the dysenteric complication the microscope generally shows besides the ankylostome eggs, entamœbæ coli, entamœbæ hystolyticæ, balantidia coli, and myriads of bacilli. A mixture of ankylostomiasis and tropical dysentery in a previously ill-fed person, as nearly all natives are, is a most serious complication, and one that requires very delicate handling. This condition is just as common in children as in adults, and both invariably die if untreated, some quickly, while others hang on in a chronic state of absolute misery for some time, infecting all about them. There is no more awful picture of utter wretchedness and hopelessness than the native infected with ankylostomes and dysenteric amœbæ, and there is no disease where the prospect is more hopeless than here unless they are removed to an institution with strict supervision. In those cases which die rapidly the stench given off by the gangrenous and ulcerating bowel, mouth, and body of the poor wretch is unbearable.

The majority of natives in this damp, relaxing climate suffer unknowingly from suppurating gums, the Babu class perhaps particularly so. Europeans, unless they use some strong antiseptic tooth powder, nearly always suffer in this way. Unaware of what is wrong they come complaining of any of the following: bleeding from the gums, sore mouth, lips, tongue, and throat; ulcers on the lips, tongue, or throat; foul-smelling breath which someone else has noticed. Owing to the relaxing climate, no matter how well the teeth are brushed, unless an antiseptic is used the gums will eventually suppurate and fall away from the teeth, leaving a deep pocket of pus all round the mouth. The disease progresses until the teeth, which are generally perfectly sound in themselves, get loose and fall out from want of support of both gums and bone at either side. The gums and underlying bone, owing to their chronically in-flamed and suppurative condition, gradually undergo contraction, absorption, and other changes, until the very root of the tooth becomes visible. Glandular abscesses and collections of pus in the planes of the neck are common results of this oral condition, although every tooth in the head may be absolutely sound. When ankylostomiasis supervenes on this state the mouth gets gradually worse and worse, until the patient eventually has ulcers, or partial or wholesale gangrene of the lips, cheek, or tongue, always beginning in

that position which is in continual contact with the worst part of the originally infected gams. It is not uncommon to see nearly the whole tongue slough away or the whole of one cheek or lip.

Again, in dealing with a number of natives with this mouth condition the medical man will often be called to see a case of ankylostomiasis in which there has been steady but slow bleeding from ulcerated gums for several days without intermission. The patient is generally at death's door when he is seen, bled almost to the last drop, and unable to speak. Superficial necrosis of the jaw bone is also common. affections of the mouth are not nearly so frequent in children as in adults. With a native who has no idea of sanitation and is not sufficiently educated to carry out the simplest directions, treatment of these cases outside a strictly

supervised institution is impossible.

As to treatment of ankylostomiasis in this neighbourhood I have nothing new to say. This point only would I emphasise—that, unless the patient is under strict supervision on a purely milk diet, in bed and with the bowels kept gently open by salts for at least two days previous to giving the drug, there will not be thorough eradication, no matter what anthelmintic is used. I use β naphthol in 30-grain doses every two hours for three times on a completely empty stomach and bowels in the morning, and then a big dose of castor-oil two hours after the last administration of the drug. This means nothing in the stomach in the way of nourishment from the evening before till about 3 P.M. next day.
Oil of eucalyptus I find equally efficacious, but the native
dislikes the taste. In the dysenteric complication I first kill the amœbæ with ipecacuanha powder and then undertake the treatment of the ankylostomiasis. For the suppurative, ulcerative, and gangrenous conditions of the mouth no drug is worth mentioning in comparison with peroxide of hydrogen. It cleans everything quickly. I generally order the 10 vol. liquid to be used in the strength of 1 in 3 of water, the solution to be made on the spot as it deteriorates rapidly. For constant and continuous bleeding from the gums there is only one remedy, and it is invariably and quickly successful. It is calcium chloride given in one-drachm doses every two or three hours in plenty of water till the bleeding stops, which always occurs after one or two doses. Probably the reason why this hæmorrhagic condition is so common in this particular neighbourhood is because of the great want of calcium salts in both the water and earth, man and animals suffering greatly from the want of it.

The stamping out of, or the lessening of, this disease means merely the proper disposal of fæces. The adoption of this implies a little primary knowledge about the life-history of the ankylostome worm. Why, when the sick-rate and the death-rate from this disease are so great, cannot all children in infected districts be taught in school the few simple This and a few items about the facts about this worm? spread of water and fly-borne disease, such as cholera and dysentery, would be of much more value than all their other learning put together.

Chandkira, Sylhet District, Eastern Bengal.

A RECENT CASE OF TYPHOID SPINE. BY C. JAMES WILSON, M.B., B.C. CANTAB.

THE following is an account of a recent case of posttyphoid spinal disease, a sequela of typhoid fever described by most writers on the subject as "typhoid spine." I am indebted to Mr. C. W. Mansell Moullin, under whose care the patient was treated at the London Hospital, for permission to publish the case.

The patient, an officer in the Mercantile Marine, aged 28 years, developed typhoid fever on Nov. 20th, 1906, while at sea; he was landed at Bombay, and after five weeks in hospital and ten days convalescence he rejoined his ship on Jan. 24th, 1907, apparently completely recovered. During his convalescence he had suffered from backache, but this entirely disappeared. The first definite sign of the sequela occurred three months later, in April, when after some sudden exertion he was seized with severe pain in the back, lesting about a minute. Three days later the same pain recurred while he was sitting still, and during the subsequent days he suffered from aching in the back on turning out of his bunk

in the morning, the pain wearing off with exercise. He continued duty for a week, but this backache becoming steadily worse he was at length incapacitated, and again entered hospital in Bombay on May 6th. Of his condition and progress while in hospital the only information is as follows. His temperature for the first week was from 100° to 102° F.; his chief symptom was severe pain in the muscles of the small of the back, always worse on the left side, the pain extending round to the abdomen and being accompanied with cramps of the abdominal muscles. There were no "starting pains," but there was always intense pain on waking if the patient had turned on his side during sleep. On May 12th he was operated on for supposed abscess in the region of the left kidney. During June there were two periods of high pyrexia, the temperature rising to 104° for three days on each occasion; the pyrexia was ascribed to malaria, from which the patient had previously suffered, although on these occasions there was no shivering fit, the only associated symptom being headache. Eventually the patient was sent to England, and on July 31st was admitted into the London Hospital. By this time the severity of the pain had subsided, and no further spasms of acute pain occurred. At this time the local condition was as follows: there were marked rigidity of the dorsi-lumbar spine, pain on jarring the spine, and deep tenderness over the first A radiograph and second lumbar transverse processes. showed much thinning of the intervertebral discs, with signs of necrosis in the vertebræ, and many osteophytes around them. An examination made to determine the patient's opsonic index with regard to the tubercle bacillus showed a high index and no evidence of auto-inoculation with tubercle toxins. On the other hand, an examination of the blood with reference to the typhoid bacillus showed a marked reaction to Widal's test, instant agglutination occurring with a dilution of 1 in 100, agglutination also occurring with a dilution of 1 in 1000. While in the London Hospital the symptoms completely disappeared, the latest persisting being rigidity. His recovery was uninterrupted, and he returned to sea at the beginning of 1908, since when he has enjoyed normal

This case presents the chief features common to the cases of "typhoid spine" described by American and German writers. Of these cases there are now so many recorded as to make it clear that the dorsi-lumbar spine is a not very uncommon site for the late activity of the typhoid bacillus. From a study of these cases the course of such an infection may be summarised as follows. During convalescence from typhoid fever, at a varying interval after the fall of temperature, which interval may be as much as three months, as in the above case, the patient complains of pain in the back. This pain may have developed gradually from a slight aching noticed when the patient first began to walk, or it may have set in later, perhaps as the result of some strain. The patient is quite incapacitated and confined to bed. There is intense pain on any movement of the lumbar spine; consequently there is rigidity of this part, and during any movement liable to involve flexion or rotation of the spine, such as the act of turning over in bed, he fixes himself by pressing his hands on his hips. ing pains" occur during sleep. There may be tenderness over one or two vertebræ, but often this sign is absent. There may be cramps of the abdominal muscles, or girdlepain, or perhaps nervous derangements in the legs, such as alteration of the knee-jerks. A fulness of one or other flank may be perceptible; presumably this sign was present in the above case when the diagnosis of perinephritic abscess was made. In time there may appear a prominence of one or more lumbar vertebral spines, resulting in a permanent kyphosis. As regards constitutional symptoms, the temperature is generally raised, and the patient's condition suffers severely from pain and sleeplessness. After weeks or months of acute suffering, with remarkable intermissions and exacerbations of the intensity of the pain, the symptoms eventually subside, and complete recovery, with possibly some persistent kyphosis, results.

The condition can only be explained by assuming an invasion of the spinal tissues by the typhoid bacillus. The chief symptoms—namely, the excessive pain and consequent rigidity, must be due to acute inflammation of the periosteum and spinal ligaments. In some cases there is no evidence of any further lesion, and hence the

term "perispondylitis," which has been applied to the condition by American writers. But in other cases there must also be an osteo-myelitis of the vertebral bodies; for instance, in this case now reported the radiograph showed plainly rarefaction of the bone, and in the case which I reported three years ago 1 there resulted permanent kyphosis with prominence of the second and third lumbar vertebræ; such signs indicate destruction of bone. Again, those cases which exhibit nervous symptoms indicate extension of the inflammation to the membranes of the spinal cord. Why should the lumbar spine be a favourite site for this specific periositiis or ostellis? The typhoid bacillus has been demonstrated in great numbers in the medulla of the vertebræ after death from typhoid fever; perhaps the muscular weakness which follows a severe attack renders the ligaments of the lumbar spine particularly susceptible to injury from even a slight over-exertion, such injury affording opportunity for the activity of bacilli already present just beneath the periosteum. On this hypothesis the condition originates in a manner similar to the common post-typhoid periostitis of the tibia or other bone. On the other hand, it is conceivable that the proximity of infected lumbar lymphatic glands may have a bearing on the question.

Cobham.

A CASE OF ENDEMIC CEREBRO-SPINAL MENINGITIS TREATED BY INTRA-SPINAL INJECTIONS OF FLEXNER'S SERUM; RECOVERY.

By D. D. ROSEWARNE, M.R.C.S. Eng., L.R.C.P. LOND., LATE HOUSE PHYSICIAN, ST. MARY'S HOSPITAL, W.

A MALE child, aged 5 months, was admitted into St. Mary's Hospital, under the care of Dr. A. P. Luff, on April 27th, 1909, with well-marked signs of cerebrospinal meningitis. The mother stated that seven days before admission the child had had a "fit," and three days later she noticed that the head was "drawn backwards." There had also been several bouts of vomiting and "screaming fits." The bowels had been regular. The child was breast-fed from birth and there was no history of previous illness. Two children of the family, aged 5 years and 5 months respectively, were said to have died from meningitis in 1907.

On admission the temperature was 101.20 F., the pulse 144, and the respirations were 44. The child was wellnourished and weighed 16 pounds 8 ounces. There were marked irritability and restlessness, and extreme retraction of the head was present. The pupils were moderately dilated, equal, and the reaction was brisk; there was no optic neuritis or squint, but vertical nystagmus was noted. The abdomen was slightly distended and the superficial abdominal reflexes were well marked. Kernig's sign was clicited and the legs were drawn up. The knee-jerks were brisk and ankle clonus was absent. Tache cérébrale was present. There was marked bulging of the anterior fontanelle. respiratory and cardio-vascular systems were normal. lumbar puncture was performed on the day of admission and 3 drachms of slightly turbid fluid were withdrawn for bacteriological examination. The report of Dr. B. H. Spilsbury showed that the diplococcus meningitidis was present in considerable numbers and that the polymorphonuclear cells were largely in excess. Agglutination tests demonstrated the fact that the case was one of endemic One week after admission lumbar puncture was again performed, 8 drachms of turbid fluid being withdrawn, and 10 cubic centimetres of Flexner's serum were injected into the spinal canal. Two days later the child vomited for the first time since admission. The temperature showed a little less variation than it did before injection and the infant seemed a little brighter and less irritable. After another week further lumbar puncture was performed, 6 drachms of fluid being withdrawn and 15 cubic centimetres of Flexner's serum being injected. Vomiting still continued, but

the periosteum and spinal ligaments. In some cases there is no evidence of any further lesion, and hence the August, 1906.

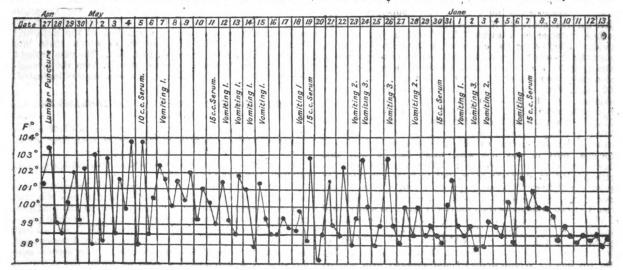
the child began to take more notice of his surroundings. On the fifth day after this injection an urticarial rash developed, which disappeared in a few hours. Eight days later a third injection was given; 15 cubic centimetres of serum were again introduced into the spinal canal after withdrawing 6 drachms of fluid. The latter was less turbid than hitherto, while the bacteriological report showed that relatively fewer diplococci were present. Vomiting still continued, and during the next week the temperature varied a good deal, as shown in the accompanying chart, which records the temperature throughout, and also shows the effect of the injections. Head retraction at this date was less noticeable.

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retraction practically disappeared, the infant's condition improved daily, and he appeared to be quite normal. All the signs of meningitis ceased, and there was no appearance of imbecility. The child, who is still under observation, was quite normal when last seen—viz., two months after discharge from the hospital.

It may be worthy of note that no drugs were given except the pulvis ipecacuanhæ alluded to and an occasional purge. Undiluted citrated milk was given in appropriate amount throughout. The child lost $2\frac{1}{2}$ pounds in weight during his illness, but on discharge he weighed the same as on admission—viz., 16 pounds 8 ounces. Whether recovery was due



Ten days after the last injection a fourth was given, 15 cubic centimetres of serum again being introduced. Vomiting continued to be troublesome, and for three or four days the child had severe diarrhoea, but this was controlled by the administration of small doses of pulvis ipecacuanhæ compositus. As will be seen by the chart, the temperature rose to 101·8°, but on the following day became normal, and after rising to 103° six days after the injection again reached normal. The fifth and last injection was given six days after the fourth, upon which the temperature fell to normal and remained thereabouts for about seven weeks, when the child was discharged as cured. During this period the head

to nature, to repeated lumbar punctures, or to the use of Flexner's serum cannot be definitely stated until statistics are available. From observations it appears that the serum will be more extensively used, and many cases seem to have benefited from its use in New York and elsewhere. Whether the child will be normal in intellect in the future cannot be decided except by means of observation for many years, and it is hoped that this will be carried out as it seems probable that in this case it will be practicable. In conclusion, I must thank Dr. A. P. Luff, through whose courtesy and kindness I am enabled to publish this case.

Berough Asylum, Canterbury.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION.

Presidential Address.—Electro-therapy in Gynæcology.—
Placenta Prævia.

A MEETING of this section was held on Oct. 14th. The Presidential Address having been delivered by Dr. H. MACNAUGHTON-JONES on Pain Associated with Disorders of the Female Generative Organs,

Dr. J. Curtis Webb read a paper on the Use of and Indications for Electro-Therapy in some Gynæcological Affections. He remarked that in the treatment of gynæcological affections by electro-therapy different types of currents must be employed to produce different therapeutic effects. A rapidly interrupted induced current produced a sedative effect, and was useful in neuralgic conditions. A current with slow interruptions should be used to tone up relaxed muscle. When bare metallic electrodes were used they produced their action by ionisation of the metals; local effects were produced, and the result would vary with the valency and composition of the electrodes. Thus a positive zinc electrode amalgamated with mercury had a strong antiseptic action. Metallic ions were driven in, and the acid radicles of the fluids of the body being attracted, they exercised a cauterising and hæmostatic effect. If the electrode were negative the basic components

of the body fluid were drawn out, producing a solvent or congestive effect. When the electrodes were covered by nonmetallic substances, such as wool, there was no ionisation of metallic particles, and so no local effect was produced. Dr. Webb said that treatment by static electricity was of great value in certain cases, more especially when a general rather than a local effect was desired. In inflammatory diseases of the vagina or vulva, copper or zinc ionisation, used in addition to ordinary methods of treatment, was of great value, and he described a special electrode suitable for these cases. The methods of obtaining and controlling currents and the various types of electrodes to be used were also described. Methods of treating amenorrhoea, scanty menstruation, and dysmenorrhoea were also mentioned. In inflammatory affections of the uterus brilliant results might be obtained by zinc-mercury ionisation, which would probably largely take the place of curettage Much might be done for simple inflammatory diseases of the tubes and ovaries. As a rule, in these cases a course of abdomino-vaginal applications should precede intra-uterine treatment. Brief notes were given of a series of cases exemplifying these methods of treatment.—In a discussion which followed Mr. SPANTON expressed his surprise that in a discourse on electric treatment in gynæcology no mention had been made of Apostoli who was one of its chief pioneers. adopted Apostoli's treatment in cases of uterine myoma with hæmorrhage with most excellent results 20 years ago, but found the method somewhat cumbersome and difficult to carry out in hospital practice, and expensive and tedious in private patients, and these were probably the chief reasons why it had somewhat fallen into disuse. - Dr. AMAND ROUTH said that some years ago, when he had more time, he adopted

the methods advocated by Apostoli, and he had found real benefit from the use of the positive intra-uterine pole with a current of 60 to 120 milliampères in cases of uterine hæmorrhage due to "endometritis" or fibroids or subinvolution. He felt, however, that the time, trouble, and expense of the treatment were not justified by the results obtained as compared with those following ordinary methods of treatment. In severe cases of chronic subinvolution and endometritis curettement was preferable, and accomplished much more than mere removal of hypertrophic mucosa as suggested by Dr. Webb.-Dr. HERMAN STEDMAN said that he had selected some half-dozen cases of chronic endometritis and cervical catarrh, and had endeavoured to stop the discharge by means of ionisation with zinc and copper, but that after six treatments of 600 milliampère-minutes he had only in one instance been successful. The dose used was the standard adopted on the continent, and was arrived at by using the strongest current the patient could bear and maintaining it for a sufficient time, which when multiplied in minutes by the number of milliampères resulted in a total of 600—e.g., 30 milliampères for 20 minutes = 600 milliampère minutes.—Dr. F. Howard Humphris said that as an adjunct to gynæcological treatment electro-therapy was invaluable. He had used it himself for several years. Various illdefined pelvic pains and backache could be relieved as surely with the faradic current as with a hypodermic injection of morphia, only it was not with every faradic coil that these results could be obtained; different lengths of wire were needed in different cases, but in most conditions in which a sedative effect was required a long fine wire coil, used with a bi-polar vaginal electrode, would give relief in from 15 to 20 minutes.—The PRESIDENT said that a good deal of bias and prejudice had existed with regard to electrical treatment in gynæcology. This might be explained by our ignorance of the manner in which the various kinds of electricity operated in their therapeutical applications. late Dr. Charles Routh, almost simultaneously with Cutter, in the "sixties" advocated electrical treatment; then came Tripier, and, following him, Apostoli. When the latter's methods and results were published he (the President) had procured all his appliances and had tried both electro-causis and the faradic treatment. For the latter he used different coils and the high-tension battery, with the various sized coils recommended by Apostoli, which had just been referred to, and with the vaginal and intra-uterine bi-polar electrodes. With regard to electro-causis, he had so serious a result in one case that he abandoned it altogether. The patient suffered from cataleptic and hystero-epileptic attacks, associated with profuse hæmorrhages from a fibromatous uterus. Every practical precaution was taken in the application of the current both as to strength and antisepsis. At first she apparently did not suffer from the treatment. A skilled electrician was present at each sitting, which was given in bed; suddenly she developed symptoms of peritonitis, which proved fatal. Apostoli pointed out that this class of patient was particularly susceptible and that the treatment was attended with risk. With regard to faradisative the statement was attended with risk. tion in amenorrhœa and dysmenorrhœa, he had varying results both with the constant and faradic currents. many cases, as might be expected, there was no influence on either the flow or the pain.

Dr. J. M. MUNRO KERR (Glasgow) reported a case of Cæsarean Section for Placenta Prævia, The patient, who was 28 years of age, was seen with Dr. J. McEwan, of Helensburgh; she was one week from full term, and had been curetted by Dr. Archibald Donald of Manchester for fibroid tumours of the uterus. She was considerably better for this operation, and soon after became pregnant. For a few weeks before full term hæmorrhage occurred from the uterus on several occasions, and an examination under an anæsthetic revealed the presence of a centrally situated placenta prævia. Removal of the uterus was likely to be soon required, and the chance of any further pregnancy was small. The friends having given their consent, he therefore performed Cæsarean section, delivering a living child. The uterus was then removed by supra-vaginal amputation. It contained a number of fibroids, the largest one on the anterior wall being about the size of the closed fist. The patient made a good recovery except for a slight attack of pleurisy on first getting up.-Sir WILLIAM SMYLY said that where placenta prævia was complicated by uterine myomata Cæsarean section followed by hysterectomy was undoubtedly the correct line of treatment, and he congratulated Dr. Munro Kerr upon its success.

-Dr. W. S. A. GRIFFITH said that he had been convinced for some years that certain special cases of placenta przevia would be best treated, both in the interests of the mother and child, by Cæsarean section. In January, 1905, he was called by Mr. A. M. Crabtree of Weybridge to a woman, 38 years of age, who had had two severe hæmorrhages. The child was lying in the first position above the brim, the cervix closed and tough, the pelvis of normal size, and the vagina narrow. Both husband and wife expressed the wish that the life of the child should be saved, and readily agreed to Cæsarean section, which was at once performed. Both mother and child did well.—The PRESIDENT said that the case brought before them raised the all-important question of the justification for Casarean section in placenta pravia. It had quite recently given rise to one of the most important discussions at the McDowell Centennial Anniversary in America, in which their late president, Dr. Herbert Spencer, took part. The case brought forward by Dr. Munro Kerr was obviously, from the myomatous complication, one in which the operation was indicated.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Exhibition of Cases.—Some Liver Conditions in Childhood.— Procumococcal Infection in an Infant simulating Generalised Tuberculosis.—Exhibition of Specimens.

A MEETING of this section was held on Oct. 22nd, Dr. G. A. SUTHERLAND being in the chair.

Mr. A. Manuel showed two cases of Anterior Poliomyelitis involving the Four Limbs. The first case was that of a child, aged 1 year and 8 months, in whom the condition developed suddenly after a slight injury. The child's temperature when taken to the hospital was 100° F. and all four limbs were paralysed. Some improvement had occurred in the arms since the child was admitted. The second case was that of a child, aged 1 year, in whom the condition resulted from a sudden illness on August 15th; considerable recovery in the arms had already occurred, but there was still complete paralysis of all the extensors of the foot and leg.

Mr. A. RALPH THOMPSON showed a case of Extracapsular Fracture of the Neck of the Femur in a boy aged 6 years. The injury had resulted from a fall. The diagnosis was at first very obscure, but a skiagram revealed the true nature of the injury. The case had been treated by extension and Thomas's hip splint.

Dr. F. W. HIGGS showed for Mr. J. HOWELL EVANS a case of Congenital Hemidystrophy. The patient was a child aged 1 year and 10 months. When only a month old it was noticed that the left side of the tongue was larger than the right, and later that there was asymmetery of the abdomen. At the present time a marked difference could be observed between the sizes of the two sides of the body. It was pointed out that the condition in this case was progressive.—Dr. F. PARKES WEBER and Mr. J. P. LOCKHART MUMMERY discussed the case.

Dr. W. ESSEX WYNTER showed a case of Chloroma. The patient was a female, aged 3‡ years, showing very marked facial deformity which had been noticed since the middle of May. The face was unusually large and bony, with shiny, tense skin over the malar bones, and marked exophthalmia, especially on the right side. The glands about the neck were enlarged. The blood count showed red corpuscles, 3,630,000; white, 30,000; hæmoglobin, 56 per cent.; and lymphocytes, 66.2 per cent.—Dr. Sutherland, Dr. T. R. C. Whipham, Dr. F. Langmead, Dr. E. I. Spriggs, and Mr. Sydney Stephenson discussed the case.

Mr. Mummery showed a case for diagnosis. The patient was a boy, aged 6½ years, with a spastic gait and very marked contraction of each tendo Achillis. He was only able to walk on the tips of his toes.—Dr. Spriggs referred to a similar case which had been regarded as one of hypertonia.—Dr. R. C. Jewesbury pointed out that the case might be one of diplegia, as there were well-marked kneejerks and Babinski's sign was obtainable.—Dr. Higgs regarded the case as one of spastic paraplegia.—Dr. Sutherland pointed out that there should be in that case some mental defect.—Mr. Mummery, in reply, said that there was no evidence of any mental defect.

Dr. A. DINGWALL FORDYCE communicated some notes on the Pathology of some Liver Conditions in Childhood,

with a report of three cases. Case 1 was that of a child, aged 7 years, with sub-acute yellow atrophy of the liver. year ago the child had an attack of jaundice and since then had complained of pain in the left side of the abdomen. Seven weeks before death the child began to look ill and the abdomen was noticed to be swelling. There were diarrhosa and vomiting, cedema of the back, paresis of the left leg and left side of the face, and a squint. The temperature was 99° F., and the pulse was 144. Post mortem slight pleurisy and pericarditis were found. There was some bile-stained fluid in the peritoneal cavity. The stomach was dilated, and in the ascending colon there was an acute tuberculous ulcer. The liver was greatly reduced in size and almost flat, and its surface was irregular with well-marked yellow nodules. Microscopic examination showed yellow areas of hyperplasia and much fibrous tissue. Case 2 was that of a girl, aged 8 years, who was admitted to the hospital with caries of the dorsal spine. She died from persistent vomiting a few days after admission. The post-mortem examination revealed a fatty condition of the liver, which weighed 460 grammes. Case 3 was that of a boy aged 4 years and 8 months. The child was first seen on account of digestive troubles and on examination it was noticed that the liver was much enlarged. The child died after an operation which revealed malignant disease of the liver. At the postmortem examination the liver was found to weigh 4½ pounds and to be studded throughout with new growth. A tumour was discovered in the ileum about 1 foot from its lower end. The kidneys were enlarged.

Dr. J. WALTER CARR read a paper entitled "A Case of Pneumococcal Infection in an Infant simulating Generalised Tuberculosis." The patient was a child aged 15 months. The case was at first thought to be one of acute pneumonia, but when after several weeks the condition remained unaltered with an irregular temperature it was thought to be one of general tuberculosis. Calmette's test gave a negative result. The child died and the necropsy revealed no trace of tubercle but a general pneumococcal infection. There was well-marked pericarditis. The right lung was universally adherent and the upper lobe showed old unresolved pneumonia; the left lung was also adherent. The peritoneal cavity contained about a pint of semi-purulent fluid.

Dr. Higgs showed a specimen from a case of Lymphosarcomatosis. The specimen showed an appendix infiltrated with lympho-sarcoma. The kidneys also showed diffuse infiltration with lympho-sarcoma cells.

Mr. Ivon Back exhibited a specimen from a case of Acute Inflammation in an Appendix, involuted into the lumen of the cæcum, which then formed the apex of an intussusception. The specimen was removed from a girl, aged 8 years, by operation, the patient recovering.

MEDICAL SOCIETY OF LONDON.

Legislation in Regard to Anasthetics.

A MEETING of this society was held on Oct. 25th. Dr. SAMUEL WEST, the President, being in the chair.

Dr. FREDERIC HEWITT read a paper, which is printed in full in this issue of The Lancer, p. 1266, on the Need for Legislation in Regard to Anæsthetics and the lines upon

which it should take place.

The PRESIDENT said that, considering the risks involved in the administration of anæsthetics, it was necessary to consider the present want of regulation in the matter.

Mr. L. MATHESON contended that to restrict qualified dentists from the administration of anæsthetics for dental operations was inconsistent, unnecessary, and prejudicial to the best interests of the public. The diploma granted to qualified dentists was a guarantee to the public that they were fit to practise dental surgery and to administer anæsthetics for dental work because it was an integral part of dental surgery. For dental purposes nitrous oxide was generally given, and he asked what evidence was there of danger to the public in qualified dentists giving gas. He had not yet heard of any fatality that had occurred in the hands of a qualified dentist. He did not admit that the general practitioner was a better anæsthetist than a dentist, and he thought that in a large proportion of cases the practitioner was not better than the dentist. The dentist as a rule was all the examining bodies have come into line in the United better trained in giving anæsthetics than the medical man. Kingdom and have made instruction in anæsthetics a

Referring to giving an ansesthetic and operating at the same time, he said that that procedure would gradually disappear.

Mr. A. L. FLEMMING said that supposing an emergency happened at a dental operation, such as choking from a foreign body in the larynx, would a dentist be qualified to deal with the case? There was nothing in his training which would ensure his being qualified to deal with such an emergency. If the Bill were passed as suggested by Dr. Hewitt that difficulty would be met. He gave details of how two Bristol dentists considered that the Bill from the point of view of the nation was satisfactory, and it was not thought that the dentists had anything to complain of if they were restricted from giving gas.

Dr. DUDLEY W. BUXTON said that Dr. Hewitt was endeavouring to secure that any man who gave an ansesthetic should be capable of doing so in a satisfactory manner. A Licentiate in Dental Surgery was fully qualified to carry out this work in dental operations, for he was competent to give such an anæsthetic and to act with rapidity and decision in case of accident. He did not consider that any medical man was necessarily qualified to give an anæsthetic in the same manner as a skilled anæsthetist, but he did think that the ordinary qualified dentist was in his own particular walk of life a skilled giver of anæsthetics in his own particular line. In the case of emergencies any man might make a mistake, and the highly qualified medical man was open to the charge of not always doing the right thing as well as the dentist. In regard to a dentist operating and giving gas at the same time, that dual procedure was constantly occurring, not only in country places, but also in towns, and medical men must be prevented from doing the same thing. It was drawing a red herring across the scent to say that that was an argument against dentists giving nitrous oxide gas.

Mr. J. G. TURNER said that the dangers incidental to the giving of anæsthetics were such that they could not expect the Licentiate in Dental Surgery to cope with them. In two years' hospital work it was impossible to imagine a dentist learning enough clinical and surgical knowledge to deal with emergencies. He was certain that the danger was just too great to allow the unrestricted administration of nitrous oxide gas by a Licentiate in Dental Surgery.

Mr. A. W. MAYO ROBSON pointed out that when operating in the country he had experienced considerable difficulty in consequence of general practitioners being unskilled in giving anæsthetics. In regard to dentists giving anæsthetics great difficulties must arise if that were prohibited, for dentists have for many years given gas and had given it extremely well. He thought it would be very difficult to districts. He considered that a Licentiate in Dental Surgery was sufficiently qualified to give an ansethetic in dental work.

Dr. J. VINCENT BELL said that in regard to country districts the dentist was often found to be more expert in giving an anæsthetic for a dental operation than the raw country doctor.

Mr. H. BELLAMY GARDNER declared that it must not be forgotten that public confidence in this matter should be maintained not only by individual but also by collective effort.

Dr. J. F. W. SILK asked for trustworthy figures to show that there were an enormous number of deaths from the administration of a general anæsthetic by unqualified persons. He wanted some reliable facts to show that legislation was necessary. One difficulty in regard to the Bill was in reference to its being put into force. If such action rested on the man in the street then legislation was of no value whatsoever. To take out of the hands of dentists the power of being able to administer nitrous oxide gas would be lamentable, and to place the administration of gas in the hands of a qualified medical man who possibly had never seen gas given would be a great misfortune.

Dr. HEWITT, in his reply, pointed out that it was impossible to supply reliable statistics concerning deaths under anæsthetics. In answer to Mr. Matheson, he gave details of a certain dental hospital where gas was given by qualified medical men in over half a million cases. On one occasion, through the absence of the medical man, the gas was administered by a qualified dentist, and on that occasion a fatal accident resulted. Within the last two years practically

necessary part of the medical curriculum, so that in future medical men will be fully instructed in the giving of ansathetics.

OPHTHALMOLOGICAL SOCIETY.

Presidential Address.—Pathological Pedigrees.—Exhibition of Cases.

A MEETING of this society was held on Oct. 21st, when Dr. G. A. BERRY, the new President, who occupied the chair, delivered his Presidential Address. He first expressed his keen appreciation of the honour the society had done him in electing him to the presidential chair. As one progressed the truth of the maxim quot homines tot sententia became more and more evident, and it was not only educating but inspiring to realise the steps which had led to the great advances and to get some idea of the manner of thinking and the intellectual environment of the author. was scarcely anything so fascinating as the history of medicine. For many advances they could claim something more than rediscoveries; they were new discoveries, logical deductions from carefully collected observations and experiments, not merely irresponsible speculations. The practical man was an empiric, but now the science of medicine had not only overtaken but greatly outstripped the art; and, indeed, there were many reasons for treatment lagging behind. Practical therapeutics was one of the most imperfect of the arts. Surgery was perhaps the least subject to individuality, and it was in surgery that the greatest advances in treatment had been made of recent years. But the advances resulting from antiseptic surgery had led to over-confidence in, and too frequent resort to, operative interference, and that was no doubt favoured by the public. That, however, was merely a swing of the pendulum too far, and would right itself in time. The art of surgery had advanced, and was still advancing, in a way and to an extent it had never done before. The functional activity of the eye could now be estimated with every refinement. But beyond increased safety in operations, the advances in ophthalmic surgery had never been commensurate with those in general surgery. He then went on to deal in detail with the aims and results of some of the operations for cataract. In the Middle Ages the monks paid scrupulous attention to cleanliness of instruments, and they had an anæsthetic with which patients were treated, sometimes to the extent of losing consciousness, when painful operations were performed. Since 1866 no radical change had been made in the methods of cataract extraction which found general acceptance. Something better in the treatment of cataract was at least conceivable; there might be cure without operation, or prevention altogether might be possible. Useful as was iridectomy in the treatment of glaucoma, further advances in that direction might be made in the future. He did not think irido-dialysis would ever be revived. Nearly all the surgical interferences now in use for trachoma had their prototypes in ancient times. The treatment which gave the best results in the more severe chronic cases was now often employed in cases where it came to be an unnecessary mutilation. He regretted the tendency of the public to go to the optician for defects of vision, because the optician could not detect and treat the pathological condition which often underlay them. The President then entered into a historical survey of treatment of eye conditions, paying special attention to the Hippocratic school. Polypharmacy was largely practised by the ancients because they did not know the values or chemical reactions of drugs. He believed the use of mydriatics had been overdone. The advantages of inducing hyperæmia had long been known empirically, but Bier had now put the matter on a scientific basis. The efficacy of ionisation was very real, and though the practice was yet in its infancy there were many possible developments in the future, and the same was true of X rays and radium. In trachoma it was doubtful how far those remedies would take the place of surgery. In conclusion, the President declared himself a believer in the great future of medicine, both preventive and remedial, in which treatment by sera and antibodies which counteracted and stimulated the activities of the organism would play a great part.

Mr. PRIESTLEY SMITH made two communications, one a

Pedigree of Congenital Discoid Cataract. In connexion with the last named Mr. Smith said that it almost exactly conformed to Mendel's law.—The paper was discussed by Mr. E. NETTLESHIP, Mr. R. W. DOYNE, Mr. J. HERBERT FISHER, and Mr. E. TREACHER COLLINS, and Mr. PRIESTLEY SMITH

replied.

Mr. N. BISHOP HARMAN showed a new Retractor for use in Excision of the Lacrymal Sac; also Symmetrical Discoid

Cataract in two sisters.

Mr. G. T. BROOKSBANK JAMES showed a case with very Unusual Fundus Appearances, and two cases illustrating Irido-sclerectomies by the Open Method in Glaucoma. He said that he was somewhat pleased with the latter operation, so far as he had gone, though some difficulty was caused by a certain amount of oozing from the vessels, which had to be stopped before the incision was made.

Mr. H. B. GRIMSDALE showed a case of Retraction of the

Eyes associated with the act of Winking.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.

Exhibition of Clinical Cases.

THE annual general meeting of this society was held in the library of the Royal Victoria Infirmary, Newcastle-on-Tyne, on Oct. 14th, the retiring President, Dr. R. S. PBART, being in the chair.

Mr. E. H. DAVIS of West Hartlepool was elected President of the society for the forthcoming session, and was invested

with the badge of office.

Dr. THOMAS BEATTIE showed: 1. A man, aged 54 years, with Paralysis Agitans, whose case had been under observation for five years and in whom there was the typical general posture with retropulsion, exalted knee-jerks, tremors of the neck and facial muscles and of the legs, but none of the usual rotatory movements of the forearms and 2. A coloured sailor from a Brazilian warfingers. ship suffering from Diffuse Peripheral Neuritis, affecting especially the posterior interosseous nerves of the forearms and the anterior and posterior tibial nerves in the legs. Care had been taken to exclude lead and the other usual toxic causal agents, and the man had come from a ship where there had been several cases of beri-beri. 3. Two cases of Specific Aortitis, with fusiform dilatation of the aorta, aortic regurgitation, and anginal attacks. Dr. Beattie brought forward these two cases in order to discuss the cause of these anginal attacks. He raised the following questions: (a) Were the anginal attacks due to the dilatation of the aorta similar to the pain of aneurysm and reflex through the sympathetic? (b) Were they due to the lack of proper distension of the coronary arteries, and consequent ischæmia of the heart muscle resulting from the aortic regurgitation and imperfect filling of the sinuses of Valsalva? (c) Were they due to actual narrowing of the coronary arteries from specific endocarditis similar to the specific condition of the aorta?

Dr. A. M. MARTIN exhibited: 1. A case of Femoral Aneurysm in a male, aged about 40 years, cured by extraperitoneal ligature of the external iliac artery with chromicised catgut. The cause was unknown and it produced typical symptoms and signs, also pain radiating from the hip to the knee-joint. The sac was still present but pulsation was absent. 2. An interesting case of "Joint Mouse," the foreign body being a detached piece from the internal femoral condyle. The patient, a male, aged 25 years, when seen complained of symptoms typical of a loose semilunar cartilage. Five months before the operation the toe of his right foot caught against a steel plate in a shipyard. He fell down with his leg doubled up under him; the knee was locked for some time, and complete extension was never afterwards possible. At the operation a large piece of bone measuring $11 \times 1 \times \frac{1}{8}$ inch was found; it was coated with cartilage on its convex aspect, and this exfoliated shell comprised the greater part of the lower aspect of the internal condyle of the femur. Mr. Martin mentioned that he had once before seen a similar case.

Mr. H. BRUNTON ANGUS showed two interesting cases which he had previously treated for Joint Dislocation, and Note on the Making of Pedigree Charts, and the other a both of which had organic nerve lesions: 1. A male, aged about 45 years, came with a sciatic dislocation of the hipjoint. About three months afterwards he returned with a huge mass of new bone growing from the antero-lateral aspect of the upper end of the right femur. This pair less tumour extended upwards into the right iliac fossa and did not implicate the hip-joint. The overlying tissues were very cedematous and the superficial veins were dilated, so that the condition simulated a bone sarcoma. The man presented unmistakeable signs of tabes dorsalis, and the view was therefore taken that the new formation of bone was a parasyphilitic manifestation. 2. The second case was a male, aged 35 years, who 15 months previously came with a dislocation of the shoulder, which was reduced. Recently he was sent to Mr. Angus a second time with a diagnosis of sarcoma of the upper end of the humerus. This diagnosis was based on great swelling and cedema in the region of the right shoulder-joint, together with dilatation of the superficial veins and a marked degree of thickening of the upper end of the humerus. No other joints were implicated, but there was no doubt that it was a monarticular osteoarthritis, and time had confirmed this view. This patient was developing symptoms and signs of general paralysis of the insane.

Dr. Horsley Drummond showed: 1. A middle-aged man with two separate Saccular Anenrysms of the Thoracic Aorta, whose only symptom was pain referred along the left eleventh dorsal segment. There were no physical signs. The diagnosis entirely depended upon the X-ray evidence, and the skiagrams showing the condition were also demonstrated. 2. An elderly male with typical symptoms and signs of Thoracic Aneurysm.

Dr. S. S. WHILLIS showed: 1. A child upon whom he operated three weeks previously for a Chronic Otorrhea of three years' duration and which had produced a Mastoid Abscess with Lateral Sinus Thrombosis. The operation was a modification of Ballance's method, a rectangular flap of the whole posterior wall of the cartilaginous meatus being detached and turned inwards. 2. A case after Removal of a Laryngeal Growth through a Killian's Tube.

Dr. A. PARKIN exhibited: 1. A case of Raynaud's Disease in a young adult female. There was a patch of gangrene on the heel, and both feet and legs were cyanosed. The radial pulse had a very small volume, and Dr. Parkin remarked that he considered this feature more than accidental. 2. An adult male who had Lymphadenoma with Paraplegia. There was a nodular mass in his liver and his legs were paralysed. When the patient first came under notice it was a question whether the paralysis was the result of a spinal lesion or due to the lymphadenoma. Retention of urine supervened, which Dr. Parkin said was a proof of spinal disease.

Dr. R. A. BOLAM showed: 1. A case of Lichen Ruber Moniliformis. The patient was a man who for four and a half years had had an eruption in the groin, in the ham, and in the region of the ankle. eruption underwent little change and was painful at times, especially during weather changes. Itching was not now a marked feature, although present at first. The linear arrangement of the papules comprising the eruption was very striking and strongly suggestive of connexion with nerve areas. The patches appeared to occur in the first to the fifth lumbar areas. 2. A case of Nævus Unius Lateris in a -boy who soon after birth was noticed to have roughened areas of skin on one half of the body. There was now a definite verrucose condition of skin in patches and lines, the arrangement of lesions suggesting a family resemblance to Case 1. The distribution was definitely unilateral, half of the scrotum and half of the penis, for example, being involved. Other areas extensively affected were the posterior scapula and the elbow. 8. Cases of Tinea Barbee and Favus were also exhibited.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—
At the opening meeting of this society on Oct. 20th Dr.
John Campbell (Belfast) gave the inangural address on Sepsis
in Midwifery Practice, Dr. Adam Fulton, the President,
being in the chair. Dr. Campbell said that since more than
2000 women die annually in England and Wales from
puerperal sepsis, accounting for three-fourths of the total
mortality of puerperal conditions, the subject was incontestably an important one and one that appealed to every
general practitioner. The mortality from sepsis in lying-in
taospitals was now as low as 0.1 per cent. or even 0.048 per

cent. (Rotunda Hospital, 1908), which contrasted with a general mortality over the whole country of 0.22 per cent. to 0.23 per cent., although this was understating the case. Probably the true mortality was more nearly that of Manchester, which worked out at 0.56 per cent., or in its worst district as high as 1.4 per cent. The more stringent test of morbidity rather than mortality was now applied to lying-in hospitals, and the same thing had been worked out successfully in private practice. Of a series of 465 cases recently reported in 77 per cent. the temperature never exceeded 99° F. Bacteriological investigations had shown that in a normal puerperal woman before labour the genital tract might be divided into a septic zone below and external to the position of the hymen, an antiseptic but not sterile zone corresponding to the vagina, and a sterile region within the uterus itself. Digital examination and the changes of labour itself might, and frequently did, completely alter these distinctions. Dr. Campbell also dealt with unsuspected sources of infection about nurses, such as gumboil or varicose ulcers, and explained the position he took up with regard to douching. He laid much stress on the value of a sharp, large-looped flushing curette with long handle, to be used in every case where the hand had been introduced within the uterine cavity or where there was any possibility of placental débris remaining behind. He also devoted some time to the prevention of sepsis, where this was favoured by preceding septic conditions about the male or female genital tract.—A hearty vote of thanks was proposed by Dr. H. Michie and supported by Dr. W. R. Smith (Beeston).

LIVERPOOL MEDICAL INSTITUTION.—A meeting of this society was held on Oct. 21st, Mr. C. T. Holland being in the chair.—Dr. J. Hill Abram read a note on a case of Polycythæmia Megalosplenica in a male.—Dr. A. Stookes and Dr. E. E. Glynn related a case of Accidental Hæmorrhage and Chronic Uræmia in which bacillus proteus was found.-Mr. F. A. G. Jeans read a paper based on 10 consecutive cases on which he had operated for Perforative General Peritonitis. There were two cases of perforated duodenal ulcer and eight cases of general peritonitis due to perforative or gangrenous appendicitis. The series included four children of 15 years or under. There were two deaths, both being amongst the appendix cases. One child of 11 died from pneumonia on the fourth day, the necropsy showing a clean peritoneum, although the symptoms had dated from four days before the operation. In one case the patient was four and a half months pregnant but recovered without abortion. One man died on the tenth day after a small secondary abscess had been opened. In the pregnant case no suprapubic tube could be used to drain the pelvis. All the cases were treated with slight modifications of the Murphy method and Mr. Jeans suggested that possibly the continuous administration of salines might act as a vaccine in appendicitic cases by the absorption of solutions of the products of the bacillus coli, but he left this to the vaccinators and the immunisers. -Mr. F. T. Paul mentioned 15 cases under his care during the last year of which 4 had died, 2 from perforated duodenal ulcer. In duodenal cases he recommended closure of the pylorus and gastro-enterostomy if the patient could stand it, as he considered death to arise from secondary leakage. He did not interfere unduly with the peritoneum unless very foul, and he washed it through a double tube. He did not use lumbar drainage, but relied upon a long finely perforated silver tube in the pelvis and packed down to the perforation. He strongly advocated the continuous instillation of saline under the skin by Barnard's method and also the Fowler position, and thought purgatives desirable.

UNITED SERVICES MEDICAL SOCIETY. — The opening meeting of this society was held on Oct. 13th at the Royal Army Medical College, Millbank, S.W., when the President, Surgeon-General A. M. Branfoot, I.M.S. (retired), delivered a short a idress in which the work and progress of the society were reviewed. A plea was made for attention being paid to clinical work, and the subject of neurasthenia—which disease was the cause of a vastamount of inefficiency in the Services—was commended for study.—Lieutenant-Colonel P. J. Freyer, I.M.S. (retired), then read a paper entitled "Total Enucleation of the Enlarged Prostate: Practical Observations on the Operation." The development and anatomy of the prostate with the pathological changes of the enlarged organ were first described and illustrated by sketches. The operation in detail and after-treatment were then given.

664 total enucleations had been done in patients varying in age from 49 to 89 years with an average of 69 years. average weight of the prostates removed was about two and three-quarter ounces, and ranged from half an ounce to 17 ounces. Nearly all the patients were in broken health. The mortality from all causes was 6 per cent. and was steadily decreasing from 10 per cent. in the first hundred cases to 4.24 per cent. in the last two hundred. As a result of the operation a patient regained the power of retaining and passing his urine naturally without the aid of a catheter. Return of symptoms or contraction at the seat of operation leading to stricture and fistula did not occur, and there was no diminution in the sexual power after the operation. A number of prostates which had been removed by Lieutenant-Colonel Freyer were exhibited.—Major C. G. Spencer, R.A.M.C., Lieutenant-Colonel Sir R. Havelock Charles, I.M.S. (retired), and Colonel C. H. Joubert de la Ferté, I.M.S. (retired), took part in the discussion, and the proceedings terminated with a hearty vote of thanks to Lieutenant-Colonel Freyer.

ROCHDALE AND DISTRICT MEDICAL SOCIETY.—A meeting of this society was held on Oct. 21st, Dr. James Melvin, the President, being in the chair.—The President delivered an interesting and instructive address on Faith Healing. Reference was first made to "touching for the King's evil," a practice introduced in the time of Edward the Confessor, and an account was given of the religious ceremonies and formulæ associated with the passing of the Royal hands over the face of the kneeling patient. Wart-charming had been practised from the earliest times, and high authority could be cited for its efficacy. Hypnotism was originated in the eighteenth century by Mesmer and practised by him with great success in Germany. In Paris he reached the height of his fame, patients being so numerous that he delegated his mesmeric functions to a tree. As the result of the findings of a special Government Commission Mesmer was utterly discredited. Next an account of Mrs. Eddy's views as to the non-existence of matter and pain was given. A computation of her probable profits from her own patients and from the training of teachers of her cult amounted to £500,000. Copious quotations were given from Mrs. Eddy's book, "Science and Health," to illustrate her teaching.—An interesting informal discussion followed, several members relating from personal experience their knowledge of the practices of "Christian Scientists."—Dr. Menzies proposed, and Dr. Cox seconded, a vote of thanks to the President for his address, which was carried with acolamation, and Dr. Melvin replied.

ROYAL MEDICAL SOCIETY, EDINBURGH.—The first meeting of the session of this society was held on Oct. 15th, when Dr. F. E. Reynolds read a dissertation on the Wassermann Serum Reaction for the Diagnosis of Syphilis and Parasyphilitic Diseases. At the second meeting held on Oct. 22nd the following gentlemen were elected annual presidents: Dr. D. Maxwell Ross, Dr. R. C. Alexander, Dr. R. C. MacQueen, and Dr. A. Fergus Hewat. Dr. Alexander described two cases in which acute abdominal symptoms had led to laparotomy being performed but in which no cause for the condition could be found.

Another Case of Veronal Poisoning.—At an inquest held recently by Mr. A. Schröder at Paddington it was proved that the deceased, a woman, aged 40 years, had taken rooms in a lodging-house two weeks before her death, and had made statements to her landlady to the effect that she was in straitened circumstances. One day her room door was found to be locked and on its being broken open she was found lying unconscious with an empty bottle near her, which had contained tablets of veronal. The medical evidence showed that death, which followed shortly afterwards, was due to veronal poisoning. The empty bottle had contained 25 tablets, each sold as containing 5 grains of veronal. Dr. Tanner, who gave evidence, called the attention of the jury to the unrestricted sale of tablets such as the deceased had purchased, and they added to their verdict of "suicide while insane" a rider recommending the adding of veronal in the form described to the schedule of poisons.

Rebielus and Notices of Books.

The Cambridge Natural History. Vol. X.: Crustacea and Arachnida. By Geoffrey Smith, M.A., A. E. Shipley, F.R.S., H. Woods, M.A., Cecil Warburton, M.A., and D'Arcy Thompson, C.B. London: Macmillan and Co., Limited. 1909. Pp. 566. Price 17s. net.

This volume completes the Cambridge Natural History, and although it is the last volume to appear it is really No. IV. of the series, which is arranged in an ascending order from the Protozoa up to the Mammals. Nearly 15 years have elapsed since the production of the two earliest volumes, which were published in 1895, and in consequence the authors of the new volume before us are not all of them those to whom the work was originally assigned. delay indeed, to which the editors, Dr. Shipley and Dr. Harmer, now Keeper of Zoology in the Natural History Museum, refer with regret in the preface, was due to the untimely death of one of those at first selected for the important group of the Crustacea. The excellence of the single chapter which the late Professor Weldon left in a fit state for publication shows with what admirable thoroughness that distinguished zoologist had intended to carry out his undertaking. Nevertheless, as a new contributor had to be selected the editors have done as well as they could possibly have done in requesting Mr. Geoffrey Smith of New College, Oxford, to fill the place so prematurely vacated.

Like its predecessors, the present volume is largely technical in treatment, but the paragraphs setting forth details of structure are agreeably tempered by lighter sections dealing with habits; more particularly is this the case with the spiders, whose predaceous lives, singular matrimonial customs, and web-weaving proclivities lend themselves to a treatment of this kind which cannot be meted out to the more stolid and humdrum crustacea, who, moreover, advertise themselves less to the would-be observer. Even in this group Mr. Smith has some interesting facts to tell us of the robber crab, which is now certainly known to climb cocoanut palms in search of its favourite and apparently only food at the present day. At stated seasons the robber crab scurries back to the sea, and its young are as purely marine in their lives as the parents are terrestrial, or, as has been said, even arboreal. The robber crab, which is really not a crab in the stricter sense of that word but an ally of the hermit crab, which seeks shelter, as is well known, for its soft and tender tail in the disused shell of a whelk, grows to so large a size as 1 foot. As these crustaceous animals are not as a rule very large, it is not without interest to note that our common lobster, at least the American specimens of the same, do, according to Mr. Herrick, reach no less a length than 20 inches and a weight of 25 pounds. Both these instances, however, pale before the giant crab of Japan, Macrocheira kämpfferi, which is "supposed to be the largest crustacean in existence, sometimes spanning from outstretched chela to chela as much as 11 feet." The body of this crab is not quite so ungainly as might be inferred from the above quotation, and, even admitting the statement of Herodotus and Mr. H. G. Wells, arthropodous creatures do not ever reach colossal dimensions. The hugest forms appear to belong to the totally extinct Eurypterida, to the consideration of which a chapter is devoted by Mr. Henry Woods. These animals, which reached a length of 6 feet, have been utterly extinct since the Palæozoic epoch. In many respects those great water dwellers of the past resembled the king crabs of to-day, and thus presented an affinity to the scorpion tribe rather than to the crustacea.

The scorpions themselves are a most extraordinary group of animals, in their unaltered persistence upon the globe, as well as in certain details of life. They have existed since Silurian times, and those ancient forms to the eye of even the instructed observer differ but slightly from living scorpions. Mr. Warburton replaces Mr. Woods in taking up the tale of these arachnids, and has plenty to say of the remarkable way of life of what are now entirely terrestrial creatures. As is so often the case with carnivorous animals, as, for example, the serpents, scorpions can maintain life for a long time without any food. They appear to be entirely deaf and to see but indifferently. On the other hand, the tactile sense is acute, and scorpions perform somewhat elaborate antics at the breeding season like their allies the spiders. Mr. Warburton doubts the extreme ferocity with which they have been credited and will have nothing to do with the legend that when thwarted and annoyed they sting themselves to death. A French observer, M. Fabre, established colonies of scorpions in his garden and investigated with thoroughness the ways of life of these arthropods. The wooing of the scorpion is accomplished with resolution and with none of the delicate hesitancy which influences the spider when in quest of a mate. The male scorpion leads the wooed one firmly by the claws to a convenient spot, where he excavates a burrow with one hand, so to speak, while he holds her with the other. But before making this temporary home the two promenade amicably for an hour or more up and down, holding hands the while. Domestic life is, however, but short, for in most cases, Mr. Warburton informs us, the marriage festivities are ended by the female eating up her husband.

Mr. Warburton is also responsible for the section dealing with the spiders, whose anatomy is described with much detail and, like all other parts of this volume, with many and well-selected illustrations. Allied though the spiders are to the scorpions, the venomous bite is effected by the cheliceræ, which are mouth appendages, while in the scorpions the bite is non-venomous, but the poison is expressed through a sting at the end of the tail. The bite of the spider seems to be under the animal's control as to whether it shall be venomous or not. Mr. Warburton thinks that the varying reputation of the tarantula is accounted for by this. The "tarantula" is a spider whose name must in any serious work be written in inverted commas, since the term, like "mosquito," is of general application. Spiders of quite different families have been indifferently called "tarantulas." The panic caused by the appearance of a spider in the retiring chambers of a certain class of lady is not therefore without some justification. Many gruesome tales have been told of the effects of virulent foreign arachnids. A South European lycosid, which has perhaps as much claim as any spider of the district to be the tarantula, bit a mole which died 36 hours later. A bee struck in the right place died at once. Farm labourers have died or been seriously invalided by the bite of a latrodectes. and numerous stories can be got together of the dangerous qualities of many species of spiders.

Space does not allow of further extracts from this entirely readable work, but enough has been said to show the nature of a part of its contents. The more technical details are, as is the case with all the other volumes of this indispensable treatise, in most competent hands, skilled not only in the actual facts dealt with but in their presentment to the reader in an easily assimilable form. The only complaint which we have to make is that the groups are in some cases rather shortly treated. This seems to us to be especially the case with the crustacea, and among the crustacea with the isopods and amphipods. But to cover all the allotted ground in a volume which must at least roughly correspond in size

with foregoing volumes could not have been an easy task, and compression and even omission have proved to be necessary. It may be fairly said, however, that nothing of really first-rate importance has been omitted. The volume is a worthy close to an entirely admirable series; and we offer our congratulations to all concerned in its production.

A Text-book of Special Pathology for the Use of Students and Practitioners. By J. MARTIN BRATTIE, M.A. N.Z., M.D. Edin., Professor of Pathology and Bacteriology, University of Sheffield; Honorary Pathologist to the Sheffield Royal Infirmary and Royal Hospital; and W. E. CARNEGIE DICKSON, M.D. Edin., B.Sc., F.R.C.P. Edin., Lecturer on Pathological Bacteriology and Senior Assistant to the Professor of Pathology in the University of Edinburgh; Assistant Pathologist, Royal Infirmary, Edinburgh. With 191 illustrations and two coloured plates from original preparations. London: Rebman and Co. 1909. Pp. 599. Price 17s. 6d. net.

THIS book forms a companion volume to the text-book of general pathology by the same authors, of which we have recently published a review.\(^1\) Like its predecessor, it aims at presenting the teaching of the Edinburgh school and the authors acknowledge their indebtedness to Professor W. S. Greenfield, at whose suggestion the work was undertaken, for placing the notes of his lectures at their disposal and for his cooperation.

The book is divided into nine chapters, in which the pathological changes occurring in the various systems of the body are categorically considered. The general arrangement of the subject matter is convenient and easy of reference, while the classification of the lesions of each organ or system is good. The descriptions given are not exhaustive, but the salient features are clearly set forth and the principal objects of note are indicated in thicker type. The illustrations, which are numerous, are reproductions of photographs of actual specimens and are well executed, while the good quality of the paper used in the book renders them unusually clear and distinct. There are two coloured plates representing the various forms of normal and abnormal blood corpuscles. They are faithful reproductions of stained specimens, and they leave nothing to be desired in the matter of accuracy, while the descriptive notes are so arranged as to be clear and definite.

Diseases of the circulatory system are first considered, the morbid changes in the heart being succinctly described. In connexion with diseases of blood-vessels a clear account is given of atheroma, this term being taken to include arteriosclerosis and endarteritis deformans as well as the condition to which it is sometimes restricted. The second chapter. which treats of diseases of the blood and blood-forming organs, is worthy of special note, and contains a useful study of the changes in the bone marrow in disease. which is reproduced from a paper published by one of the The various cells found in the marrow are anthors.2 classified, and the reactions induced in this tissue by disease are divided into leucoblastic and erythroblastic, the latter being of either normoblastic or megaloblastic type in conformity with the Ehrlich terminology. A clearly written and up-to-date account is given of lymphadenoma or Hodgkin's disease, incorporating the work of Longcope, whose conclusions are given.

The third chapter is devoted to diseases of the respiratory system, and among these tuberculous disease of the lungs and pleura is considered at some length. The authors believe with Ravenel that the commonest mode of entry in the human subject, except in young children, is by way of

¹ THE LANCET, August 21st, 1909, p. 533.

² W. B. Carnegie Dickson in International Clinics, vol. Series xvii., 1907.

They mention the recent work in connexion with the intestinal source of infection. Their account of the lesions in pulmonary tuberculosis is clear, and their classification of the varieties is convenient. This section is illustrated by numerous reproductions of photographs of tuberculous lungs.

Diseases of the digestive system are dealt with in the next chapter, and although all the important lesions are mentioned and briefly described, the accounts given often err on the side of brevity. The diseases of the ductless glands are next considered, including the thyroid, thymus, pituitary and suprarenals. The sixth chapter includes a general description of the diseases of the genito-urinary system and of the mammary gland. Abnormal conditions of the kidneys are described at some length, and the descriptions are clear and to the point. Diseases of the nervous system are briefly described, and numerous reproductions of photographs of specimens prepared by the Pal-Weigert method are given. Some of the descriptions might here also be lengthened with advantage. The concluding chapter deals with diseases of the bones and joints. The account given of rickets is good and is well illustrated. An unusually complete index is added, rendering reference easy and convenient.

The book should be a useful work for students as an introduction to special pathology and as a companion to systematic works on medicine.

Clinical Studies. A Quarterly Journal of Clinical Medicine. By BYROM BRAMWELL, M.D. Edin., F.R.C.P. Edin., F.R.S. Edin., Physician to the Edinburgh Royal Infirmary; Lecturer on Clinical Medicine in the School of the Royal Colleges, Edinburgh. Vol. VII. Edinburgh: R. and R. Clark, Limited. 1909. Pp. 395.

In publishing the seventh volume of "Clinical Studies" Dr. Bramwell again records a number of interesting cases which were seen at the "Wednesday cliniques." Amongst these was a peculiar form of lead poisoning, with tremors and marked loss of vision, both for white and for colours, without any changes being apparent in the fundus oculi. The diagnosis rested between plumbism and intracranial tumour, but the occupation of the patient (employment in a paint manufactory), constipation, the state of the gums, attacks of colic, together with a fine muscular tremor in the right hand and arm were in favour of the former condition. This opinion was confirmed by a rapid recovery under sulphate of magnesia and iodide of potassium. Another case was that of spleno-medullary leukæmia with unilateral optic neuritis in which there was a rapid drop in the number of white corpuscles-440,000 to 10,400 per cubic millimetre. The case proved fatal. A particularly rare and interesting case was one of chronic pneumonia due to the pressure of a small aneurysm on the left bronchus. At the necropsy the left lung was found partially collapsed; it was of small size and lay at the posterior part of the cavity. At the end of the arch of the aorta there was a small aneurysm of about the size of a walnut projecting to the inner side and coming into contact with the main bronchus of the left lung, just below its point of origin from the traches. On microscopical examination of the lung the pleura was found to be much thickened and the interlobular septa and general framework showed well-marked fibrous thickening; the walls of the air vesicles also exhibited a similar though less-marked condition. The air-cells were filled up with catarrhal cells mixed with a few leucocytes and granular matter. places here and there were patches of semi-purulent material with interstitial thickening around—a chronic suppurative condition in relation to the small bronchi.

diagnostic and therapeutic value of lumbar puncture. enumerates the circumstances in which this procedure has been found of use, especially drawing attention to the differential diagnosis of the various forms of meningitis, soenabling obscure cases of cerebro-spinal fever to be recognised, in which isolation and serum treatment are indicated. An analysis is given of 42 cases of progressive muscular atrophy and also of 42 cases of pseudo-hypertrophic paralysis and myopathic muscular atrophy.

There is much that is interesting in this volume, the record of cases being especially valuable.

A Text-Book of Mental Diseases. By EUGENIO TANEL. Authorised translation from the Italian by W. FORD ROBERTSON, M.D. Edin., and T. C. MACKENZIE, M.D. London: Rebman, Limited. 1909. Pp. 820. Price 24s. net.

In his preface Professor Tanzi sets forth that he has endeavoured in this work, in due proportion, to reflect two tendencies that underlie modern psychiatry. On the one hand, there is the man who wants to know what psychiatry is; and on the other, the idealist who strives to ascertain what it will become. The one requires facts, and only those that are certain, harmonious, and of general practical value; the other is interested in hypotheses, in the direction that is being taken by an advancing science, in its past and in its future. It would appear that modern critics are indulgent to the man who collects facts uncritically, and unconsciously alters, exaggerates, and invents them, whilst they are implacable to him who guesses at the truth and naturally leaves his hypotheses undemonstrated, however rational, useful, and probable they may be. There are, nevertheless, alleged facts that are illusory and hypotheses that become verified. It would be better if there were more rigour in the examination of facts and less precipitation in the condemnation of hypotheses. This due proportion Professor Tanzi has preserved in a masterly fashion, and we know few works in which facts and hypotheses, placed alongside each other, are more judiciously blended, or in which the facts and hypotheses are more philosophically subjected to an impartial criticism.

As is now customary in psychiatrical works, the first few chapters are devoted to the general anatomical and physiological data of the normal and abnormal processes of mind. The account is good and adequate and not too long for a work which is not one of anatomy or physiology. In succeeding chapters sensibility, ideation, memory, the sentiments and the movements and other external reactions are considered, and it is with pleasure that we note that the physiology and pathology of these various conditions are placed in juxtaposition in the same chapters and are not divorced, as is too often the case, by being placed by themselves in different parts of the book. As regards our knowledge of structure, the author is of opinion that the facts of pathological anatomy, now definitely ascertained in cases of mental disease, considered in the light of experimental pathology, enable us to say whether certain lesions are diffuse or circumscribed, reparable or irreparable, recent or congenital, and hence also to connect them with some of the symptoms manifested during life, although they are very far from serving to reveal the psychical phenomena to which they correspond. We are enabled to arrive at a synthesis which makes it possible to regard a number of psychoses from a common point of view, and to refer their stages and clinical features to a definite series of material processes.

Professor Tanzi's theory as to the mechanism of hallucinations is interesting. The sensorial centres of vision are Dr. Edwin Bramwell is responsible for an article on the a looking-glass, those of hearing a resonator, those of

outaneous sensibility an instrument for instantaneous signalling, and nothing more. The mnemonic representations of external phenomena are built up in other centres in the form of symbols, and these are direct symbols. From the centres of representation the direct symbols can pass to higher centres in order to form more general and more abstract conceptions, and these are symbols of symbols. The sensorial centres are of themselves unable to give any complete images, but can only reflect them. In normal conditions they only reflect the external objects that actually present themselves. To reflect also the mental images of objects re-awakened within us they must be in pathological conditions, or there must be at least unusual conditions, such as those of sleep. In order to give a satisfactory explanation of all varieties of hallucinations it is sufficient to suppose that the homolateral and contralateral paths that pass from the centres of sensation to the centre of representation acquire the power, which they never possess in normal conditions, of allowing impulses to travel in the reverse direction. A hallucination may be considered as taking origin as an idea or symbol but instead of forming associations with other ideas it flows back, either by the same homolateral and contralateral fibres by which it came or in some other way vet to be determined, to the sensorial centres from which it proceeded when it was of the nature of a sensation. Thus it becomes what it originally was, a sensation. It is, however, a sensation of an unusual character, that is, of a pathological character. This power of retrogression forms the special morbid character that determines the individuality of hallucination both as a psychological phenomenon and as a clinical symptom. The sensorial centres are importers in relation to external objects, but exporters in relation to the internal demain of transcortical thought. If owing to a pathelogical inversion they import from within it is natural that they should react in the only way in which it is possible for them to react—that is, by the production of sensorial images. In whatever way the pathological reflux may be effected it is important to recognise that a hallucination consists exactly in this reflux. Thus understood, the physicnathological process of hallucination acquires features that are altogether special and befitting the indisputable fact of its unique character. It is no longer simply an extreme intensification of a representational image but the morbid degradation of a representation that was once a sensation, and which, through being broken up under abnormal conditions, becomes again a sensation.

In mental pathology the question of classification is more complicated than in ordinary pathology. The diseases with which it has to do are less distinct. Apart from a few forms, such as progressive paralysis, alcoholism, and infantile cerebroplegia, only syndromes are known, and the same syndrome may be the outward expression of the most diverse diseases. The conception of disease implies a constant and definite, or at least approximate, correspondence between the symptoms and the organic morbid processes. Owing to the absence of such correspondence or doubt as to its existence the phenomena of insanity cannot all be included in a single view. Each person sees them from his own standpoint, and classifications are consequently either fallacious or incomplete. There is, however, amongst the later authorities a distinct tendency towards greater uniformity founded upon the rational classification devised by Kraepelin. Professor Tanzi's classification has much to be said for it, and yet further simplifies the grouping of morbid entities and syndromes.

The translation appears to us to be faithful, while the English in which it is couched is so good that it has the merit of concealing the fact that the work was originally in

a foreign language. The work itself we regard as one of the best presentations of the science of psychiatry with which we are acquainted.

LIBRARY TABLE.

Diseases of Women. By J. BLAND-SUTTON, F.R.C.S. Eng., and ARTHUR E. GILES, M.D., B.Sc. Lond., F.R.C.S. Edin. Sixth edition. With 123 illustrations. London: Rebman, Limited. 1909. Pp. 554. Price 11s. net.—The appearance of the sixth edition of this well-known handbook shows that it has met with appreciation on the part of students and practitioners. The authors have made a considerable number of additions and have added several new sections. The first of these deals somewhat sketchily with injuries to the uterus, both gynæcological and obstetrical. Chapters have also been added on fibrosis uteri and adenomyomata of the uterus. By the former term the authors mean the condition of the uterus often associated with severe menorrhagia in which there is a marked overgrowth of the connective tissue in the wall of the uterus, the "arterio-sclerosis of the uterus" or "chronic metritis" of other authors. This change undoubtedly occurs in the uteri of all women after the menopause, but when it occurs prematurely and to an excessive degree it may give rise to very intractable hæmorrhage. The authors believe that it is produced by previous septic endometritis, sometimes puerperal in origin and sometimes the result of gonorrhœa. They maintain that the only treatment of any avail is hysterectomy, and for severe cases no doubt this is the correct treatment. Really severe cases of this disease are very rare, and Mr. Bland-Sutton has had exceptional experience since he has performed hysterectomy for fibrosis of the uterus no less than 67 times. It is a pity, therefore, that the description of the pathology is not given a little more fully; it would have been interesting to have had a microphotograph of the condition found in these cases with the elastic tissue shown by a differential stain. The account of adenomyomata of the uterus is short but good, although the authors express no opinion as to the origin of the glandular spaces and we are left ignorant as to which view they adopt. In consequence of the frequency with which the radical operation of total abdominal hysterectomy is being performed at the present day, the authors have devoted a chapter to injuries of the ureters. The description of Wertheim's operation itself would appear to have been written with little or no experience of the procedure, or otherwise the most difficult and important step of the operation, the wide removal of the cellular tissue at the base of the broad ligaments, would not be dismissed in such a description as, "The two layers of the parametrium are taken off as close as possible to the pelvic wall." Not a word is said about the use of Wertheim's clamps, one of the most important of the improvements introduced by him in his method of carrying out the operation, and one upon which he lays special stress in his latest writings on the subject. The statement that no trustworthy returns concerning the remote results are at present available is also only correct if it is intended to apply to the results of British operators only. Detailed results of Wertheim's first 120 cases in which five years had elapsed since the date of the operation, showing 51 cases, or 42 per cent., of complete freedom from recurrence. were published by Wertheim last year.

Dictionary of Ophthalmic Terms, with Supplement. By EDWARD MAGENNIS, M.D. R.U.I., D.P.H. Bristol: John Wright and Sons; London: Simpkin, Marshall, and Co. 1909. Pp. 67. Price 2s. 6d. net.—In the preface it is stated that many of the terms will "not be found in the ordinary medical dictionary." There are a good many medical dictionaries on the market, and it is not obvious

which is the "ordinary one," but if it has omitted some of the errors in Dr. Magennis's catalogue it is to the credit of the ordinary dictionary. To take two pages only: "canities" is not "a decoloration of the lashes"—it means a patchy decoloration of the hair anywhere on the head or body; similarly "chromidrosis" is not confined to the eyelids. By what perversion of Latin is the "nucleus caudatus" dubbed the "caudatum," and the "nucleus lenticularis" (unless the "ansa lenticularis" is meant), called the "lenticularis" tout court? The "caudatum" (sio) is described as "a ganglion or free ring of grey matter circling round the lenticularis of the brain." The Latin is incorrect, the description is misleading, and the connexion of the subject with ophthalmic terms is obscure. We cannot conscientiously commend this dictionary to our readers.

The Pocket Medical Dictionary. Edited by W. A. NEWMAN DORLAND, A.M., M.D. Sixth edition. London and Philadelphia: W. B. Saunders Company. 1909. Pp. 598. Price 5s. net.—It would be idle to question the utility of a work which has seen so many editions in so short a time. Many persons obviously require such a dictionary, and to those many this little volume must commend itself on account of its compact, neat form and its excellent paper and type. Tiny and portable as it is, the book is very full and complete-in fact, it is almost too complete in its inclusion of words not strictly medical but dealing with collateral sciences. It would be impossible to compile such a collection of definitions without errors, and equally impossible to enumerate many of such errors within the space at our command. To select an example at random, the term "Charcot's disease" is usually applied to the synovial destruction in locomotor ataxia and not to insular sclerosis. Charcot in his admirable historical note on the latter condition lays great stress on the fact that from 1835 onwards Cruveilhier, Carswell, Turk, and many others had described it before M. Vulpian and he himself placed new examples on record in 1862.

Ann Veronica: a Modern Love Story. By H. G. WELLS. London: T. Fisher Unwin. 1909. Pp. 352. Price 6s.-We have travelled far from the day, almost 50 years ago, when Mrs. Jolly Newboy, of Pocklington Gardens, horrified that faithful chronicler of contemporary manners, Mr. M. A. Titmarsh, by asking her husband for "The Chubb Key." The points of difference between the young woman of Mrs. Newboy's date and Mr. Wells's latest heroine are almost inconceivable. But Mr. Wells's careful study has resulted in a novel which is extraordinarily clever but which is in places deliberately unpleasant. The honesty of purpose which has inspired the author is transparent, but surely it would have been possible to produce the necessary impressions in a subtler manner—possible, at any rate, for so really brilliant a writer as Mr. Wells. Ann Veronica is a young woman with views, but by no means a fool. Her struggles, her circumscribed home life, the way in which she just missed being a lady, her acquaintances the Widgetts and the various weird persons with whom she came into contact when she went out into the world "on her own" are drawn with extraordinary skill. So are all the scenes at the Imperial College, where she studied biology. Mr. Kipling, we recollect, made two of his characters who were engaged (the man was in the Indian Canal Department) talk of "barrage and aprons and waste water" which, as their host remarked, was "their style of spooning." So Ann Veronica first knew that she was in love with Capes over "a ribbon of sections of the developing salamander." Perhaps the best part of the book is the description of all the people "in the van" who were trying to reconstruct things in general. Thus, "The Goopes were the oddest little couple conceivable, following a fruitarian

career upon an upper floor in Theobald's Road. They were childless and servantless, and they had reduced simple living to the finest of fine arts. Mr. Goopes, Ann Veronica gathered, was a mathematical tutor and visited schools, and his wife wrote a weekly column in New Ideas upon vegetarian cookery, vivisection, degeneration, the lacteal secretion, appendicitis and the Higher Thought generally, and assisted in the management of a fruit shop in the Tottenham Court Road. Their very furniture had mysteriously a high browed quality, and Mr. Goopes when at home dressed simply in a pyjama shaped suit of canvas sacking tied with brown ribbons, while his wife wore a purple djibbah with a richly embroidered yoke." Another delightful character, Miss Miniver, expressed herself thus: "When I am leading a true life, a pure and simple life, free of all stimulants and excitements, I think—I think—oh! with pelluoid clearness; but if I so much as take a mouthful of meat—or anything the mirror is all blurred." "Ann Veronica" will not commend Mr. Wells to any leaders of the ridiculous side of modern progressive movements, but the book should be read by all those who are striving towards an ideal for which the world is not ready, however desirable it may be. It should convince some of them that although they hold their views in all honesty those views may be unsound.

JOURNALS AND MAGAZINES.

The Edinburgh Medical Journal.—The October issue is a Special Educational Number, containing details of the curriculum at the Edinburgh Medical School, and a section on Medical Education in Scotland generally. Dr. Alexander James writes on the Infective Element in Consumption and seems inclined to believe that allies of the tubercle bacillus, such as the smegma bacillus and the grass bacillus, may be capable of assuming pathogenic rôles. Dr. H. A. Lediard discusses removal of the normal appendix as a routine measure comparable with circumcision. We trust that his views in favour of this procedure may not find general acceptance. Dr. G. H. Melville Dunlop contributes a brief paper on the Treatment of Constipation in Children and incidentally urges the advisability of giving them a more liberal allowance of cold water to drink than they usually receive.

The Caledonian Medical Journal.—The October number of this magazine commemorates the annual meeting of the Caledonian Medical Society at Lancaster in September last. The presidential address, delivered by Dr. David Blair, deals with some neglected problems in race preservation, among them the frequency of marriage between the unfit and degenerate, and the tendency to comparatively sterile unions between the more cultivated and provident members of society. Sir Dyce Duckworth sketches some incidents in the life of an old Stonehaven worthy, his own grandfather, William Nicol; and articles of literary rather than medical interest are contributed by Dr. H. McCalman on "The '15 and '45 in Lancaster," and by Dr. Lachlan Grant on "Books and Reading."

The Manchester Medical Review.—The August issue of this journal, which is now before us, contains an interesting account by Dr. Alexander Fraser of a visit to Lourdes and of the surroundings and features of this famous place of pilgrimage. A letter from Dr. J. H. Taylor reviews the unsatisfactory state of things prevailing at the Hope Hospital, Salford, which has led to an absence of medical candidates for the post of resident medical officer. More directly scientific matter is afforded in a paper by Dr. N. C. Haring on Operations on the Nasal Septum, in which the various procedures available are reviewed and the submucous operation is recommended.

Rew Inbentions.

A NEW ELECTRIC RECTIFIER.

WE have had an opportunity of examining a new instrument for rectifying alternating currents into uni-directional impulses. It is supplied by the Premier Ampero Electric Co., of Premier House, Dover-street, London, W., and will be found a most useful and efficient apparatus for charging accumulators, such as are used for motor ignition and various kinds of medical work, in those districts where the current from the main is an alternating one. The principle upon which it is constructed is somewhat the same as that devised by Dr. Batten some years ago, but it is more efficient and rather more silent in action. A great feature of this instrument is that the point on the pressure curve of the alternating supply, where the current is picked up and cut off, is adjustable and can be arranged to take place at the voltage of the cells. At such times as the charging current is at a lower voltage than that of the cells undergoing charge the circuit is open and no current can pass back through the rectifier. When properly directed which is adjusted, which is a very simple procedure, there is no visible sparking at the contacts. On our visit we saw the instrument converting an 85-cycle alternating current into direct current and charging some ignition cells, and also running a small direct current shunt-wound electric motor, which latter, as is well known, will not work with an alternating current. If the main supply should fail from any cause the instrument cuts itself out of circuit automatically. It will work on any periodicity in ordinary use, starts and runs on any load, requires no attention, and is efficient in any position. The makers claim that the instrument will go for six hours a day for six months without attention, and then all that is needed is a new set of platinum contacts at a trifling cost. The directions to be followed are extremely simple, and altogether we have seen no better instrument for its purpose.

THE LONDON SCHOOL OF TROPICAL MEDICINE.

THE winter session of the London School of Tropical Medicine was opened on Tuesday, Oct. 26th, in the presence of a representative company of officials and scientific workers by an eloquent address from Professor W. Osler, who appealed, under the title of "The Nation and the Tropics," for the adequate endowment by this country of tropical research.

Mr. WHITELAW REID, the American Ambassador, presided over the meeting.

Professor Osler's brilliant address, which will shortly appear in full in our columns, showed conclusively the need for a central scheme by means of which the various expeditions sent out as Commissions of the Government, of the Royal Society, or of universities could be all kept in touch with each other and with any later work in similar directions. He considered that the necessary organisation, though it would demand £2,000,000 for its initiation and support, for the equipment of laboratories and libraries, and for the payment of professorial salaries, was quite within the range of possibility.

The AMERICAN AMBASSADOR pointed out that the pursuit of tropical medicine was the only rational course of a nation possessed of tropical dependencies. He outlined the conditions met with and dealt with successfully both in Cuba and Panama, and said that these were instances where the study of tropical medicine had made possible national progress.

Professor W. J. R. SIMPSON proposed a vote of thanks to Professor Osler, which was seconded by Professor RONALD Ross.

Mr. NAIRNE, chairman of the Seamen's Hospital Society, proposed a vote of thanks to the Chairman, which was seconded by Sir PATRICK MANSON and briefly replied to by the AMERICAN AMBASSADOR.

THE ANNUAL DINNER.

The annual dinner of the London School of Tropical Medicine was held in the evening at the Savoy Hotel, Strand, Dr. A. G. Bagshawe, Director of the Sleeping Sickness Bureau of the Royal Society, presiding. A large company was present at the dinner, and the proceedings throughout testified to the great development of the work of the school

and the necessity there was for some proper endowment. The school has had admirable results, has passed 1000 of its students into all parts of the Empire equipped to fight diseases of the deadliest sort, and has a claim, not only upon the city at whose water-gate it is established, but upon the whole Empire. This claim has not yet been recognised at all, but it is hoped that the publicity given to the good record of the school will change the position of affairs. It should be mentioned that Lord Sheffield (Lord Stanley of Alderley) is defraying the cost of an expedition to Fiji this year out of a fund with which he has endowed the school in memory of his son, the late Honourable Edward Stanley, the Assistant Commissioner of Northern Nigeria, who died last year at the early age of 30 from hepatic abscess following dysentery. But this is an individual instance of generosity.

Dr. BAGSHAWE took the chair at the dinner, supported by Lord Sheffield and Principal H. A. Miers, and among others present were Sir Patrick Manson, Sir William Collins, Professor Ronald Ross, Mr. H. J. Read of the Colonial Office, Dr. F. M. Sandwith, Professor Simpson, Sir Francis Lovell, Sir William Treacher, and Mr. P. T. Michelli (secretary). After the loyal toasts had been duly honoured the CHAIRMAN proposed the toast of "The School" in an interesting résumé of the development of tropical medicine.

Sir Patrick Manson followed with a eulogy of Professor Osler, "the orator of the day," as lecturer, philosopher, and guide, to which toast Principal MIERS, in the unavoidable absence of Professor Osler, replied with some witty remarks which were very well received. But Lord SHEFFIELD made the speech of the evening in response to the toast of "The Guests." He placed the claims of tropical medicine before his hearers from the utilitarian and humanitarian side alike, and he urged upon all engaged in the work the necessity of bringing their just demands for endowment loudly and frequently before those in authority. Government officials, he pointed out, were men like themselves, anxious to be right, anxious to do right, and liable to make mistakes in circumstances which they did not understand. It was necessary to make those in charge of the business of the country understand that it is their duty, their common economical duty, to the Empire to see that the servants of the Empire in its far dependencies receive all the aid in their work and all the chances of health preservation which modern scientific methods can afford. Lord Sheffield's speech was punctuated throughout with the applause of the company, and was an effective exposition of the aims of tropical medicine.

The proceedings closed with the toast of "The Chairman," ingeniously given by Mr. CANTLIE and responded to by Dr. BAGSHAWE in a brief sentence.

THE ROYAL DENTAL HOSPITAL. — The Royal Dental Hospital and London School of Dental Surgery held a conversazione at the Royal Institute Galleries on the evening of Oct. 20th. Sir Victor Horsley distributed the prizes and eulogised the spirit of unity existing between medical men and dentists. He also spoke of the administration of anæsthetics by dentists, declaring that all dental students should be instructed therein. He suggested that they might be taught the administration of anæsthetics other than nitrous oxides in general hospitals. The chief prizes were Scholarship, Mr. H. D. Stephens; The Saunders Scholarship, Mr. W. L. Jackson; Alfred Woodhouse Scholarship, Mr. E. L. Fickling; Robert Woodhouse Prize, Mr. G. J. Harborow; and Ash Prize, Mr. C. G. Colyer. After the distribution, Mr. E. T. Reed delivered a lecture, illustrated by lantern slides, on Caricature in and out of Parliament. Various scientific exhibits were made by Mr. Richard Kerr, F.R.A.S., Mr. A. Hopewell-Smith, Mr. S. Henson, Messrs. Newton and Co., Messrs. Spencer and Sons, Messrs. Watkins and Doncaster, Messrs. J. R. Gregory and Co., and Messrs. Baird and Tatlock.—The annual dinner of the staff and past and present students will be held on Saturday, Nov. 20th, at the Hôtel Métropole (Whitehall Rooms), under the presidency of Mr. C. F. Rilot. Gentlemen either now or formerly connected with the hospital or medical school who may through inadvertence not have received special notice and who desire to be present are requested to communicate with the Dean at the Royal Dental Hospital, 32, Leicester-square, London.

THE LANCET.

LONDON: SATURDAY, OCTOBER 30, 1909.

Recent Advances in our Knowledge of Sleeping Sickness.

WE published last week an admirable address on the Recent Advances in our Knowledge of Sleeping Sickness, which was delivered before the Society of Tropical Medicine and Hygiene by Dr. ARTHUR G. BAGSHAWE, Director of the Sleeping Sickness Bureau of the Royal Society. In that address Dr. BAGSHAWE carefully limited himself to the consideration of work done during the past 12 months, especially such as had an immediate bearing upon prevention or cure, and his practical remarks on the administration of the arsanilates enable us to form a better idea than we have had before of the fatality of the disease.

We have now received the report of the German Commission on Sleeping Sickness, appointed in 1906 to proceed to East Africa with a subsidy from Imperial funds to cover the cost of the expedition. This report may well be considered in connexion with Dr. BAGSHAWE'S address, to which it supplies a very interesting back-Professor R. Koch, who had already had previous acquaintance with the disease while engaged in other work in Africa, was chosen as leader of the expedition, and with him were associated two colleagues-Professor KLEINE, of the Royal Prussian Institute for Infectious Diseases at Berlin, and Staff-Surgeon KUDICKE, of the East African Protectorate troops. Later, Professor BECK, of the German Imperial Health Department, was added to the Commission, as also was Dr. PANSE, of the German East African Government Medical Service. The expedition arrived in Africa in May, 1906, and returned to Europe in October, 1907. Before completion of the work Dr. PANSE at his own request left the Commission, and we regret to state that he died shortly afterwards. During the time, about two years, which had necessarily to be spent in preparing for publication the material collected by the expedition considerable advances had been made in the knowledge of sleeping sickness, and many points which were in doubt at the time when the German Commission were completing their observations have since been explained fully by the researches of other experts. In spite of this the report is a most interesting and valuable work; the investigations were carried out with characteristic diligence and zeal and with close attention to scientific details. The volume is profusely illustrated and contains about 100 reproduced photographs (most of which were taken by Professor KLEINE), several maps, coloured plates, and a considerable number of charts. It deals separately with the etiology of the disease, its diagnosis, clinical features, treatment, and prophylaxis. In the preface Professor Koch disclaims any idea of the book being regarded

as a monograph on sleeping sickness. Some important points, indeed, have not been dealt with, since the Commission, as is stated, had no special opportunities for inquiring into them. A part of the time of the expedition was spent in the study of the disease in British territory, more particularly in Uganda. Some of the islands in the great Victoria Nyanza afforded exceptionally favourable conditions for carrying out etiological investigations. On some of the smaller uninhabited islands of the Sese group it appears that although human beings are entirely absent, yet there are plenty of water-fowl, crocodiles, lizards, and snakes. Glossina palpalis is also present in overwhelming numbers. As no human blood is available for the food of the female insects it was expected that the glossinse would seek their nourish. ment by biting the wild birds. But, contrary to expectation, it was found that the blood which was present in the stomach and intestines of captured glossins was almost invariably that of crocodiles, and in this blood in some instances trypanosomes were found. The latter were of four types, none of which, however, closely resembled the trypanosoma gambiense. Occasionally on careful examination trypanosomes were found in the salivary glands of the insects, and this circumstance was regarded as supporting the view that a developmental cycle of the parasite had taken place in the body of the glossina. To answer the question whether or not man was the only host of the trypanosoma gambiense, many other animals were examined, including cattle, goats, sheep, dogs, monkeys, wild pigs, hippopotami, and antelopes. Most of these animals are found on the shores of the Victoria Nyanza and most of them suffer from the onslaughts of blood-sucking flies like the glossina. In none of these animals, save in a single monkey, were any trypanosomes found by the Commission. From this observation it was concluded that these animals, excepting perhaps the monkey and the dog, were insusceptible to this form of trypanosomiasis. Large numbers of wild birds were also examined, including cormorants, herons, kingfishers, wild geese, weaver birds, and the like, but without result, except that in a rhinoceros bird some trypanosomes, not resembling the trypanosoma gambiense, were discovered. Fishes were also investigated but without finding traces of any trypanosomes in their blood. The inquiry was then extended to reptiles, including turtles, lizards, and crocodiles, and in the blood of these trypanosomes were not infrequently found. Of 12 full-grown adult crocodiles which were very carefully examined trypanosomes were discovered in four, the parasites, however, not being present in any great number. It cannot be taken as proved that these trypanosomes were related to trypanosoms gambiense, but nevertheless Professor Koch regards these reptiles as a grave source of danger in the spread of sleeping sickness since they probably serve upon occasion as hosts for the specific parasite. Experiments to inoculate artificially young crocodiles under four years of age with the trypanosoma gambiense were entirely unsuccessful. The female crocodile lays from 60 to 70 eggs in her nest. Professor Koch himself found 40 of these nests containing an aggregate of 2000 eggs, which he destroyed or used for scientific purposes. He recommends that the natives should be paid a reward

¹ Bericht über die Tätigkeit der zur Erforschung der Schlafkrankheit im Jahre 1906-07 nach Ostafrika entsandten Kommission, Berlin, 1909, Julius Springer.

for seeking out these nests and for destroying the eggs and that the carcasses of lambs or kids into which arsenic had been put should be used as poisoned baits to kill the adult crecodiles. It is concluded that the glossina prefers human blood for its food, but when that is not available it falls back upon the blood of the crocodile for its nourishment, at least in the region of the Victoria Nyanza.

Other measures recommended by the German Commission are already familiar to our readers, including the cutting down of bushes and undergrowth close to the banks of streams and lakes to destroy the haunts of the glossina, particularly in the vicinity of fords, ferries, and places from which the natives draw water. The collecting of rubber in these regions should be suspended according to the German Commission, and boating and fishing on the Victoria Nyanza should be forbidden to the natives for the present; the villages should be removed from the localities infested by glossina to fly-free areas back from the lake. Early treatment by atoxyl is strongly urged by the German Commission, the dose to be repeated every tenth day, not only with the object of curing the disease, but also to keep the trypanosomes out of the circulation and thus avoid infection of fresh glossinse. The limitations of atoxyl and soamin indicated by Dr. BAGSHAWE must here be borne in mind, for their efficacy in any but the earliest stage in the disease is doubted by Dr. BAGSHAWE as a result of the examinations of the most recent work. Early treatment requires early diagnosis of the disease, and for this purpose, after careful consideration of the value respectively of examination of gland juice, cerebro-spinal fluid, and blood, the German Commission recommends blood examination as the safest, simplest, and speediest method of arriving at a definite diagnosis, and Dr. BAGSHAWE says in so many words that the diagnosis cannot be established unless the trypanosome is found in one or other of the body To secure systematic treatment by atoxyl and for other reasons the German Commission considers it advisable to have as many sufferers as possible collected in camps located outside the fly area, and in order to prevent the spread of aleeping sickness into adjoining territories international regulations for restricting the movements of natives and establishing examination stations on the frontiers should be carried out. In this way any infected natives endeavouring to escape could be detained and transferred to a camp for treatment and observation. These are matters to which our Colonial Office must already have had its attention drawn, and they illustrate once again the fact that scientific medicine is bound to become in the future the great argument for international amity.

Hair-balls.

MASSES of hair are not very rarely found in the stomach and intestines of animals, though they are unusual in the human gastro-intestinal tract. The habit of licking the surface of the skin, so common and so salutary in many animals, is mainly responsible for these collections of hair, whose formation is also greatly facilitated by the character of the hairs of many animals which are rough on the surface from the projections of the superficial cells. When hairs such as

these are rubbed or beaten together they become matted-in other words, they "felt"-for the projecting teeth interlock, and this felting process takes place much more readily with the hairs of some animals than with those of others, the difference of behaviour being entirely due to the difference in the surface of the hair. In human hair the external roughness, so apt for the production of felting, is not present, but hair-balls are occasionally found in human stomachs, and their presence must enter into the category of possibilities in making an exhaustive diagnosis. A valuable paper on this rare condition is contained in the issue of the Journal of the American Medical Association for August 21st, by Dr. W. W. BUTTERWORTH of New Orleans. In this article the observer records a case which was under his own care, and the details may be usefully recapitulated. The patient was a girl, eight years old. She had been sickly for the first two years of her life, but later she had been in better health, though she was pale and ansemic. Rather more than a year before her death she became very weak and had frequent vomiting, while the stools contained much mucus. For several months prior to this last illness she was known to be in the habit of eating sand, a fact which might have caused her immediate relations more anxiety if they had realised the serious omen of this sort of perverted appetite. She was taken ill with abdominal pain near the end of October, 1908, and a firm, crescent-shaped swelling in the epigastric region was found by Dr. N. W. FOUNTAIN. The temperature was 104° F., the respirations were 40, and the pulse was 148 per minute. The temperature fell after free catharsis. On the fifth day the blood showed tertian malarial organisms, and in the stools many uncinaria ova were found. She was treated with quinine and phenacetin. She was admitted into hospital a few days later, but the general condition was so bad that an exploratory incision was not considered advisable. The temperature remained between 100° and 102° F., at times she had paroxysmal abdominal pain, and she grew weaker and died on the twenty-seventh day of her illness. At the necropsy the stomach was found to contain a firm mass of hair moulded to the shape of the interior; many of the hairs of which it consisted were 15 inches long. The mucous membrane of the stomach was normal except near the pylorus, where there was a chronic ulcer one inch in diameter.

This story furnishes a good example of the symptoms produced by hair-ball in the human body, though complications in the form of malaria obscured the diagnosis. Moreover, the patient, though known to swallow sand, was not known to swallow hair. The pathological accident is much more common in girls and women than in men, and of the 42 recorded cases which Dr. BUTTERWORTH has succeeded in collecting 39 were females; this preponderance is doubtless due to the fact that girls wear their hair long and it is therefore much easier for them than it is for boys to get the ends of the hair into the mouth. The taste once acquired may persist for years, and the hair may be torn from the scalp and swallowed, but at first it is probable that only the tips of the hairs are bitten off. In the majority of cases the practice appears to commence in girlhood, and it is sometimes associated, but by no means

always, with the practice of eating sand and dirt-"pica," as it used to be called. Human hair-balls never form the compact, rounded masses which are found in cattle, for the hair has little tendency to felt. The age of the patient varies greatly, the youngest, eight years old, being the case described by Dr. BUTTERWORTH, and the oldest an insane man aged 43 years. Insanity is not commonly present, only four of the 42 cases being described as mentally unsound. The quantity of hair varies; in the case described above the mass weighed when dry 3\frac{1}{2} ounces; but a hair-ball removed by PAUL SWAIN, and now in the museum of the Royal College of Surgeons of England, weighed 5 pounds 3 ounces. The hair is usually little affected, even after years' exposure to the action of the gastric juice; it is probable that the alkaline pancreatic juice would speedily erode it, or even disintegrate it, for keratin is soluble in alkalies. The general health suffers very little, but eventually pain and vomiting appear. The mass of hair is rarely vomited, and only when lit is quite small, but dyspepsia is very common. In a fair proportion of the cases the mass can be felt through the abdominal wall, and a correct diagnosis has in five cases been made; more commonly the swelling has been thought to be a malignant growth. The diagnosis is much facilitated if the patient is known to have, or to have had, the practice of eating hair, or if portions of hair are noticed in the stools. When a mass is found in the upper part of the abdomen of a child, especially if the patient is a girl, the idea of a hair-ball should enter the surgeon's mind. The only treatment is removal, and the operation has been very successful, only 1 dying out of 17 on whom an operation was performed. The prevention of hair-ball is probably not very difficult. Any child who shows a disposition to eat sand, or the wool of carpets, or to bite her hair, should be watched and care should be taken by means of nauseous substances smeared on or mixed with the abnormal article of diet to render it unpalatable to the child. The practice of eating sand is very liable to give rise to the presence of entozoa, and it should be checked at the earliest possible moment, and evidence of the presence of intestinal worms should be sought for and steps should be taken to remove them.

The Workmen's Compensation Act, 1906: A Year's Statistics.

THE Home Office has recently issued a Blue-book which deals with a new series of workmen's compensation statistics for 1908—this being the first complete year during which the extending Act of 1906 has been in operation. The volume is edited by Mr. MALCOLM DELEVINGNE, who in an introductory note explains that under the Acts of 1897 and 1900 statistics were published annually, but that these were limited in scope, referring to only seven of the chief groups of industries. The Workmen's Compensation Act of 1906 greatly extended the field of compensation. In the first place it includes, with few exceptions, all occupations, whether the employment is by way of manual labour, clerical work, or otherwise; secondly, it reduces from a fortnight to a week the period of disablement entitling to compensation; and thirdly, it extends compensation to injuries caused

by certain industrial diseases, of which a list is appended. Mr. Delevingne's work will doubtless be valuable for official purposes to certain members of the medical profession, but the statistical tables therein contained will hardly be appreciated by general medical readers without frequent appeal to the text of the statute, or preferably to a short analysis thereof, such as that which appeared in The Lancet of Jan. 12th, 1907. A translation into ordinary language of the Workmen's Compensation Act, giving a summary of its most important provisions and paged references to its several clauses and subsections, is required by medical practitioners who have no leisure to wade through the original statute.

By a statutory Order of the Secretary of State, dated Jan. 15th, 1908, returns are required concerning mines, quarries, railways, factories, harbours, docks, and shipping, these being the industries from which returns can most readily be obtained. But, with respect to the most important of the industries not included in the statutory Ordernamely, those of building, agriculture, inland transport, sea-fishing, and domestic service—no trustworthy returns are available because of insuperable difficulties in their collection. The present volume contains (1) statistics as to compensation cases in the above-mentioned Order; and (2) general statistics respecting the administration of the Act. statistical matter in the present work is presented in six tables. From Table I., which exhibits the general results, we learn that about seven and a half millions of persons in the aggregate are employed in the seven groups of industries above specified, and that in the year 1908 no less a sum than £2,080,672 was distributed among them in compensation for 3473 cases of death and 325,484 cases of disablement. These figures relate exclusively to compensation paid under the Act of 1906 to which the powers in Section 12 are limited. They do not include compensation paid under contracting-out schemes or under other Acts, or any costs or damages incurred at common law. The figures do not, therefore, represent the total charges upon the different industries in connexion with payment of compensation to persons employed in respect of injuries received. Speaking generally, we read that as regards the highly organised industries-such as mines, railways, shipping, and factories—the returns are substantially complete, whilst in other industries, more especially docks and works of construction, a margin of error must be allowed for. With reference to the administration of the new statute, we gather that only a small proportion of the claims thereunder became the subject of litigation in the courts. The returns show that among the compensations granted in the seven selected groups of industries only 1852 fatal cases and 2763 disablement cases were taken into court, a large number of which were either withdrawn or settled out of court. The number of fatal cases in which compensation was awarded by the courts was 750, or less than 22 per cent. of the total included in the returns; and the compensation awarded amounted to £123,579, or about 23 per cent. of that included in the returns. In 83 fatal cases and 311 disablement cases judgment was given for the respondent.

With reference to claims by domestic servants the

tables show that compensation was awarded by the courts in 33 fatal and 112 disablement cases, and that agree. ments for compensation were registered in respect of 61 fatal cases and 1019 cases of disablement. As regards socalled "industrial diseases," it appears that before a claim can be made respecting disablement from such disease, the workman must either have been medically certified to be suffering from and disabled by the disease, or else to have been suspended from employment under the rules of the Factory Acts on account of having contracted the disease. A table is presented summarising the returns of the certifying surgeons; it covers all the occupations to which the Act applies, and classifies the figures by the different occupations. The present volume also contains a list of 24 kinds of industrial diseases which are included under the Workmen's Compensation Act. During 1908 compensation was paid in 26 cases of death and in 2260 cases of disablement. Of these cases 1550 occurred in the mining industry; of which 386 were cases of nystagmus, 6 of ankylostomiasis, 459 of beathand, 537 of beat-knee, 67 of beat-elbow, and 87 of inflammation of the synovial membrane of the wrist-joint and tendon sheaths. Of the remaining cases lead poisoning accounts for 421, anthrax for 23, arsenic poisoning for 15, chrome poisoning for 20, and compressed-air illness for 10. No cases were returned of poisoning by carbon bisulphide, by nitrous fumes, by nickel carbonyl, or by African boxwood, nor was glanders returned as a cause of death or of disablement. Although 117 cases of lead poisoning among workers in earthenware were reported under the Factory Acts, only 100 of these were compensated during the year. A probable explanation of this discrepancy is this: that a worker suffering from lead poisoning is not necessarily entirely disabled, for in many works other employment is found for such workers, and so the mischief is stayed. Again, it is stated that although 32 cases of anthrax were reported by the factory inspectors in 1908, only 15 of these were compensated during the year. Possibly this arises from the circumstance that under the earlier Acts anthrax was held by the courts to be an injury by accident; accordingly some cases of that disease may now have been included among the accidents instead of among the diseases, as they should have been.

The section relating to medical referees appears to be one of considerable importance in view of their new relations to the question of compensation as between employers and employed. For the purposes of the Workmen's Compensation Act the number of medical referees appointed up to the end of 1908 was 344, of which 215 were for England, 83 for Scotland, and 46 for Ireland. The principal duties of a medical referee under the Act are as follows: (a) To report in cases referred to him by a judge, or by an arbitrator or committee; (b) to certify as to the condition of a workman and his fitness for employment, or as to his permanent incapacity for work; (e) to sit as medical assessor to a judge when required so to do; and (d) to decide, on appeal, against the decision of a certifying surgeon, who gives, or refuses to give, a certificate of disablement on account of industrial disease. From a series of tables relating to services rendered by medical referees we learn that 272 references were made during the year, of which 136 were made by judges, 43 by arbitrators, and 93 by committees. 35 appeals to medical referees took place against the decision of certifying surgeons, in 20 of which the decision was confirmed, and in 15 it was upset by the referee.

Annotations.

"Ne quid nimis."

THE CALENDAR OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE edition of the Calendar of the Royal College of Surgeons of England which has just been published contains some new features. A list of those who have given or bequeathed sums of money to the College is now included in the Calendar. The earliest sum mentioned is that which was paid to the Company of Barbers and Surgeons by Mr. Edward Arris in the year 1646 "for the use of the new publique anatomy." Upon the dissolution of the Barbers and Surgeons in 1745 by an Act of Parliament the Barbers were allowed to retain the whole of the corporate property, with the exception of the Arris bequest and Gale's Annuity (the latter being founded in 1655), which trusts the Act vested in the Company of Surgeons. Coming to much more modern times, it is noted that a contingent bequest of a sum of about £5000 was to become payable to the College on the death of a lady for whom the late Sir Erasmus Wilson provided an annuity. This lady has died recently and steps are being taken regarding the payment of the money to the College, but whether these steps are successful or no, the famous dermatologist will be one of the greatest benefactors of the College over which he presided, for his bequests to it, which fell in at Lady Wilson's death, amounted to some £200,000. Altogether, excluding the three sums voted by Parliament at various times, the donors and benefactors to the College number 14. Lists of the masters of the Company of Surgeons and of the members of the Court of Assistants and of the Court of Examiners from 1745 to 1800 are now included in the Calendar for the first time. The number of Fellows of the College now amounts to 1457, which number includes 1415 by examination, 28 elected as Members of 20 years' standing, 13 "by election," and 1 "elected" ad cundem. oldest Fellow is Mr. G. Carrick Steet, who was formerly chief medical officer at the General Post Office. The list of Members contains 16,957 names. The "father" of the Members of the College appears to be Surgeon-Major H. B. Hinton, late of the Bengal Medical Staff, who resides in Glenelg, South Australia, and who, in a recent letter to the secretary of the College, says: "I was born at Portsmouth on March 7th, 1813, and being at the present time in perfect health, walking for pleasure five miles or more a day. am ambitious of living to be one hundred," an ambition of which we hope to record the fulfilment.

THE BUDGET AND THE DRUG INDUSTRY.

WE referred a short time ago to the influence which the new taxes upon alcohol would exercise upon the drug industry and so upon the general practitioner who makes up his own medicines and upon hospitals and dispensaries. A notable object lesson is afforded by a price-list of one of the largest metropolitan druggists which is now before us, a list containing alterations in prices since the publication of the firm's general price-list in July. From this list we note that apparently all preparations of which alcohol forms a part, or in the preparation of which alcohol is used, have advanced

in price. Thus absolute alcohol has gone up from 4s. 4d. per pound to 5s. 5d., all the concentrated "aque" have advanced by 6d. or 9d. per pound and of course all the tinctures; the extracts also, with the exception of the watery extracts, have advanced from 3d. to 6d. per pound. It is easy to see how this advance will press hardly upon medical men and hospitals. And the medical men who will be most affected are not, be it said, men with good town practices and Cabinet Ministers for their patients, but that hard-working class of practitioners who have large contract practices and whose patients belong to the poorer section of society. This alcohol tax, too, does not touch the drinker or the publican, neither is it simply an increase of 3s. 9d. per gallon, but one of 6s. or 7s., for the alcohol used in the preparation of tinctures and the like is of 60 per cent., 70 per cent., or 90 per cent. of strength, and not ordinary proof spirit. This point was one which appealed strongly to the late Member of Parliament for Bermondsey, Mr. George J. Cooper. The manufacturer naturally recoups himself by increasing his charges to the consumer-i.e., to the medical man in a very large number of cases, but the medical man cannot as a rule increase his fees, especially in the case of club practice. Some clubs pay for their own drugs, and these clubs will feel the pinch very keenly, but it is unlikely that this fact will move the managements of other clubs to raise the salaries of their medical officers.

THE HAND AND ITS CUNNING.

PERHAPS some people would be embarrassed for a moment if they were asked to describe the ideals which led to the creation of a Philomathic Society, or at least until they had had time to reflect that the word "Mathematics" signified to the Greek in the first instance the whole field of learning. It is then only fitting that a society banded together by its common love of learning should now and then bid as the chief guest to its yearly banquet a distinguished exponent of medical knowledge. When the Liverpool Philomathic Society invited Sir Frederick Treves last week to the chair of honour it paid its homage to art no less than to science, and their guest, whose art has been shown with pen as well as scalpel, devoted his address to the praise of handicraft and in some measure to a lament for its decline amongst men. He reminded his audience that the surgeon is above all the man who uses his hands, and after asking whether mankind is, as a whole, losing that wonderful function he felt constrained to answer Yes. In spinning, weaving, sewing, carving, writing, countless human hands have been for ages employed, with the result that works of surpassing excellence and variety have been produced. None will deny that the advance of handicraft since the days when it was confined to the shaping of flints and the preparation of hides for garments has been so amazing as almost to stagger contemplation. But, says Sir Frederick Treves, with the perfection of mechanical skill the zenith of human handicraft has been passed. We are losing as a race the capacity for the finer movements of the fingers now that the loom, the sewing-machine, and the typewriter have reduced the products of a million hands into a soulless level of uniformity. Many instances present themselves to support the thesis. Metal, instead of being wrought, is cast in moulds, furniture is decorated by stamping-machines, the camera and the electric bath have well-nigh killed the engraver's art, and if there still be such craftsmen amongst us as were at once the wonder and the glory of the Middle Ages, their hands find no similar expression for their capacities, for there is only here and there a purchaser for slow-wrought and therefore costly wares. Sir Frederick Treves sighed for the day of hand-made lace and hand-made boots,

crafts of paper-making and bookbinding when carried on by hand. From his own profession he drew a striking instance of how the progress of invention may trend towards the decline of handicraft. He could imagine few phases of activity more difficult or more subtle than that displayed by the facile operator in the pre-anæsthetic days. Now there is no call to be brilliant, for the surgeon can proceed with easy deliberation, and "in place of the flashing of a blade is an action as studied as a movement on a chass board." . (We quote from the report of his speech in the Liverpool Courier.) He acknowledged that surgery has gained more than it has lost, but thought that nevertheless it no longer attains to its former perfection as a handicraft. We cannot wholly endorse Sir Frederick Treves's view here. The modern surgeon is called upon to perform manipulations in the depths of the abdomen, the pelvis, and even in the brain itself that never tried the hand and eye of the dexterous men whose exploits of amputation or lithotomy were timed by the second-hand of the watch. And in any general indictment of machinery it must be remembered that the machine may be regarded as the extension of the human hand called into existence by the exercise of the highest faculties of the brain. But we agree with much of Sir Frederick Treves's lament. The hand-made thing is almost always an honest thing, being what it professes to be, and often possessing a character and beauty that no machine can ever imitate because it depends upon a human individuality. On the other side, art will never perish from the world, even though it be less and less applied in common craftsmanship. When, for instance, China has "occidentalised" herself her artists will doubtless desist from the carving of concentric hollow spheres in patterns of bewildering intricacy and will turn to more fruitful occupations, but we cannot think that the cunning spirit made manifest in the ivory will fail to find new expression amongst the people who gave it birth. Rather we believe that men of the crafts which have produced lovely things for many centuries will find the artistic energy that directed their fingers passing into new forms of usefulness and beauty.

ORGANO-THERAPY IN ADDISON'S DISEASE.

It is a curious fact, for which no explanation has been given, that while organo-therapy has been perfectly successful in myxcedema, in no other disease supposed to be due to failure of an internal secretion has it given a similar result. The evidence of its value is unsatisfactory. This fact is well illustrated by the adrenal in treatment of Addison's disease, which has proved disappointing. However, a few cases have been recorded in which the disease seems to have been cured. At a meeting of the Académie de Médecine of Paris on Oct. 5th M. E. Boinet read an important paper on the organotherapy of Addison's disease and reported 8 cases in which he had adopted it, with the following results: 1 case of cure, 3 cases of considerable improvement, and 4 cases of failure. In the first case a pedlar, aged 34 years, was seen in April, 1898, with all the classical symptoms of Addison's disease. There were characteristic marked melanodermia and brown spots on the internal surface of the lips and cheeks, on the gums, on the palate, and on the tongue. The patient was very feeble and was fatigued even when at rest. He was very wasted, weighing only 60 kilogrammes. Organotherapy was at once begun and consisted in the daily ingestion of two fresh suprarenal capsules of the sheep and in the subcutaneous injection of a glycerine extract of the suprarenal capsules of the calf, at first every fourth day, then every second day. In order to obtain a more rapid result the patient tripled and even quadrupled the does and every book-lover will join with him in his eulogy of the This was followed by tremors, a result which M. Boines

has shown to be due to overdose of adrenalin. the end of six weeks nervous troubles appeared, and there was continuous tremor, increased by movement and most marked in the upper limbs, particularly in the hands. In November, 1899, 120 injections had been given and there was considerable diminution of all the symptoms. The improvement continued, and now, at the end of 10 years, the melanodermia is scarcely perceptible and the spots in the mouth have almost disappeared. The patient weighs 100 kilogrammes and can walk all day without fatigue. Béclère has recorded a very similar case. The patient was a man, aged 24 years, who had suffered for 15 months from typical Addison's disease, which was progressing rapidly. ingested daily four suprarenal capsules of the sheep weighing from 10 to 15 grammes. A month later 1 cubic centimetre of the glycerine extract of the suprarenal capsules of the calf was injected daily. After four and a half months' treatment he had gained 10 kilogrammes in weight and had almost completely recovered. Now, 11 years later, he is in good health. M. Boinet suggests that in such cases the adrenalin causes hypertrophy of portions of the suprarenal capsules which have remained sound. It sounds to us more probable that by supplying the deficient internal secretion it improves the health of the patient and allows the vis medicatrix natura to produce the hypertrophy. In one of the cases of improvement reported by M. Boinet the patient was a woman, aged 66 years, with the characteristic pigmentation of the skin and mouth. She was very weak and was fatigued by the slightest effort, and suffered from lumbar pain and gastro-intestinal troubles. She took by the mouth daily extract of the suprarenal capsules of the calf. After some months she had almost completely recovered from the weakness, but the pigmentation was unchanged, and she also had tremor of the fingers. She still remains in this state nine years after the commencement of the treatment. In the other cases of improvement the result was similar. In the cases of failure some temporary improvement was obtained, but symptoms of acute suprarenal insufficiency eventually supervened and rapidly proved fatal. M. Boinet has described under the name of "Addisonism" a group of symptoms consisting of pigmentation and debility falling short of those of Addison's They are not undisease due to suprarenal inadequacy. common in pulmonary tuberculosis, thus differing from true Addison's disease, which is a primary tuberculosis of the suprarenal capsules. In this condition the suprarenal capsules are sclerosed, but not completely destroyed. Suprarenal treatment is very successful. M. Boinet therefore suggests that the cases of recovery from the symptoms of Addison's disease under adrenalin may be cases of "Addisonism" and not of true Addison's disease.

THE PATHOLOGICAL ANATOMY OF MONGOLIAN IDIOCY.

THE pathology of this common form of imbecility is still not clearly determined. While some consider it due to an agenesis of the nervous centres, others think the maldevelopment is secondary to the ordinary processes of meningitis or chronic meningo-encephalitis. In the Archives de Médecine des Enfants for July will be found a carefully described examination of the central nervous system of a case of the disease by Dr. Babonneix, working in the laboratory of Professor Raymond in Paris. The child, who presented the usual anatomical stigmata, and in addition had symmetrical syndactyly of the middle toes and double cryptorchidia, died at the age of five years from tuberculosis. The convolutions of the brain were simple and the fissures shallow, but no obvious anomaly was otherwise visible. The pia was thickened and somewhat adherent, but it could be stripped without decortication. Scattered irregularly over the surface of the brain

were small areas of meningitis, with unmistakeable vascular alterations in the shape of dilatation of vessels, interstitial hæmorrhagic foci, and peri- or paravascular inflammatory nodules. Microscopical investigation of the cortex showed that in some places it was sclerosed and demyelinised, while the cellular elements were often rarefied, sometimes disarranged, staining badly, and exhibiting granulation of the protoplasm. Many nerve cells were seen embedded in the white matter. The systems of tangential fibres had almost entirely disappeared. cortical neuroglia was intensified and unusually rich in spider cells. Throughout the brain the blood-vessels were congested, with dilatation of the perivascular sheaths; deposits of pigment were seen frequently in their neighbourhood. In the lower nervous centres only minimal changes were observed. The pyramidal tracts were agenetic. From a correlation of the work of others Dr. Babonneix considers the view incontestable that the agenesis of the nervous centres is secondary to a process of chronic meningitis. The nature of this meningitis remains sub judice.

THE OPENING OF THE ROYAL EDWARD INSTITUTE AT MONTREAL.

On Oct. 21st the Royal Edward Institute, which has been erected at Montreal for the study and treatment of tuberculous disease, was opened by the King, who was at the time four and a half thousand miles away. The ceremony consisted in the hoisting of the Royal Standard, the opening of the main doors of the institute, and the switching on of its lights, the necessary machinery being set in motion by a weak electric current transmitted across the Atlantic from Chichester, where His Majesty completed the circuit at West Dean Park. He pressed the necessary button at 9 o'clock P.M. Greenwich time, and within a second the ceremony had been performed at Montreal, the time there being 4 P.M. Sir Charles Fitzpatrick, Deputy Governor of Canada, attended the ceremony in the unavoidable absence of Lord Grey, and addressed a large and brilliant assembly who also heard speeches from Sir George Drummond, chairman of the institute, and Dr. R. W. Philip of Edinburgh, its designer. The King telegraphed the following message to the chairman immediately after the opening had taken place :-

"I have much pleasure in declaring the Royal Edward Institute, Montreal, now open. The means by which I make this declaration testifies to the power of modern science, and I am confident that the future history of the institute will afford an equally strong testimony to the beneficent results of that power when applied to the conquest of disease and the relief of human suffering. I shall always take a lively interest in the institute, and I pray that the blessing of the Almighty may rest upon all those who work in and for it, and also upon those for whom it works.

EDWARD R. AND I."

THE DIAGNOSIS OF TUBERCULOUS MEDIASTINAL GLANDS.

WE published in our columns last week a note by Dr. John Allan on the importance of the early recognition of tuberculous mediastinal glands. The possibility of latent pulmonary tuberculosis in children is now generally recognised. The etiology has been further explained by researches which prove that the pathogenic bacilli may pass through the walls of the healthy intestine and become lodged in the mediastinal glands, so that infection through milk from a tuberculous cow may thus take place. Dr. Allan points out that in the study of latent pulmonary tuberculosis we are confronted with a difficult problem, and many points have to be carefully considered in the endeavours to deal correctly with it. He deals mainly with

the diagnosis. The symptoms are numerous and often vague; loss of weight, ansemia, afternoon fever, and cough are the commonest, likely to mislead if occurring singly, but of much significance when combined. The physical signs in some instances may be obvious, but in the majority of cases are ill-defined. By a careful study of these points a presumptive diagnosis may often be arrived at. Dr. Allan then draws attention to the auxiliary methods of diagnosis. which may be of the greatest aid, but unfortunately require, for the most part, the assistance of a colleague in the laboratory or an X ray installation. The value of the Roentgen rays in diagnosis has been much disputed. Dr. C. W. Cunnington has pointed out that in the "right oblique" position an excellent view may be obtained of the posterior mediastinum, which appears as a triangular light space, which in health is clear and becomes markedly luminous on deep inspiration. He finds that when the retrocardiac glands are enlarged the space remains dark and is of opinion that children presenting this condition should be considered tuberculous. French authorities have long recognised the possibility of such early diagnosis, and institutions for tuberculous, or "tuberculous-prone," children are more numerous in France than sanatoriums for adults.

THE LATE OUTBREAK OF CHOLERA IN THE PRESIDENCY GENERAL HOSPITAL, CALCUTTA.

THE Lieutenant-Governor of Bengal, as we announced last week in a leading article, has issued an official report describing the outbreak of cholera which occurred in the Presidency General Hospital, Calcutta, in July last, and embodying the results of bacteriological examinations carried out by Professor Haffkine. The first case, that of one of the nursing staff, occurred on the morning of July 30th. and was followed by ten other cases during the day and on the subsequent day. Six deaths resulted among the nursing staff, the other fatal cases being those of three children, who were in-patients of the hospital, and a native sweeper. All the cases occurred within 30 hours of the first, and so virulent was the infection that, although treatment was adopted immediately, death followed in the fatal cases within 24 hours from the first symptoms. No case occurred after midday on July 31st and the epidemic stopped as suddenly as it began. Careful investigations showed that those affected all partook of the evening dinner on July 28th and that the infection was carried in some article of food supplied at this meal, prob. ably a custard served with stewed fruit, of which they had all eaten. On July 31st Professor Haffkine isolated comma bacilli in pure culture from the stools of five of the patients, thus eliminating the possibility of ptomaine poisoning, which was at first suspected. He also took 127 samples of food and water, and on bacteriological examination 14 were found infected with comma bacilli. The uniformity of infection led him to suspect the kitchen servants as possible sources of the infection, and of 12 servants examined two masalchies (natives who wash up dishes, plates, &c.) employed in the nurses' kitchen yielded positive results, comma bacilli being actually found on their hands. One of these just before examination had visited the latrine and washed at the place set apart for servants. This circumstance suggests that the men, or some of them, were actually harbouring comma bacilli and acting as "carriers," as has been proved to be the case in enteric fever. Contaminations could be conveyed from their hands to the dishes and in this way to the dining room. Professor Haffkine segregated these men and examined their excreta. finding comma bacilli, of which he is still engaged in working out the cultural properties. If the custard was inoculated in the morning with comma bacilli and allowed to stand at the temperature of a July day in Calcutta it

would present a teeming mass of virulent bacilli before evening time, when it was partaken of by those who contracted the disease; and the incident serves as a most tragic illustration of the dangers run by tropical residents whose servants exhibit any uncleanliness in the preparation of their food. It also seems to prove beyond dispute the dangerous existence of cholers "carriers."

ISOLATED FRACTURE OF THE TRANSVERSE PROCESS OF A LUMBAR VERTEBRA.

OF the exact pathology of the condition termed sprain of the back little is known, and its diagnosis from lumbago, which, as is well known, may be of very sudden onset, is sometimes difficult. The X rays have recently thrown some light on this injury and, as in other regions, have revealed the existence of fractures previously unsuspected. In March, 1908, Ehrlich described what he thought was the first case of isolated fracture of the transverse process of a lumbar vertebra which had been diagnosed during life.1 Three cases in which this injury was found post mortem had previously been recorded. In December Haglund added seven other cases.2 In all these cases the diagnosis was made by means of the X rays. In the New York Medical Journal of Oct. 9th Dr. S. Lange, radiographer to the Cincinnati Hospital, has reported two other cases. In the first the patient was a muscular man, aged 50 years, who said that four months previously, while lifting a heavy tray out of a trunk, he felt something give way in the small of the back. pain followed and he had to cease work. Next morning, while bending over the washstand, he felt excruciating pain in the same place and fell to the floor, from which he could not rise for a few minutes. Since that time he had been unable to follow his occupation of commercial traveller because of the pain, which was especially marked on stooping, riding on cars, and walking fast. At night, when in bed, he occasionally felt twinges of pain. On examination all that could be found was an area of acute tenderness of about the size of a dollar to the left of the last lumbar vertebra in the angle between the crest of the ilium and the spine. To this spot the patient referred all his pain. It resisted all the usual methods of treatment, including rest in bed, strapping, salicylates, and potassium iodide. rays revealed a fracture of the left transverse process of the fifth lumbar vertebra. The process was tilted up at an angle and an irregular fissure separated its tip from its base. Some union of the fragments seemed to have occurred. It appeared that the patient's powerful erector spinæ in contracting broke the transverse process. In the second case a man, aged 35 years, was admitted to hospital complaining of severe pain in the right lumbar region, which began two days previously after a sharp blow in the small of the back from a heavy, rapidly revolving crank-handle. Examination showed rigidity of the lumbar muscles on the right side and great tenderness on pressure to the right of the first lumbar vertebra. Skiagraphy revealed a fracture of the right transverse process of the first lumbar vertebra, with upward displacement of the fragment. The causes of the fracture in the cases reported by Haglund are instructive. In one case a coal bucket fell upon the lumbar spine: in two the back was "sprained" while riding a bicycle; in a third instance a man sprained his back whilst lifting his son; another fell downstairs; and the last patient was an athlete who had many times fallen on his back but could not say which fall had caused the fracture. Before the application of radiography to this class of injuries these fractures must have been diagnosed as sprains. The diagnosis

Deutsche Zeitschrift für Chirurgie, Band xeil., p. 413.
 Ibid., Band cxvi., p. 321.

may be based upon the history of the accident, tenderness on pressure over the seat of fracture, slight muscular rigidity, and pain of varying severity, which is increased by movements of the trunk, especially walking and stooping, and relieved by lying down. If the case is seen late the diagnosis can be made only by radiography. The diagnosis is of medico-legal importance, for in many obscure cases claims for compensation are made for injuries to the back. In the past objective signs could not be found in cases of this fracture, but now radiography may prove useful.

THE REMUNERATION OF MEDICAL MEN SUMMONED ON THE ADVICE OF MIDWIVES.

IT will be remembered that the recommendations of the Departmental Committee appointed by the Lord President of the Privy Council to consider the working of the Midwives Act, 1902, are as follows:-

Act, 1902, are as follows:—

A secure expectation of payment should be given to a medical practitioner summoned on the advice of a midwife in a case of amergency. The Poor-law authority should be responsible for the payment and should be empowered to charge the fee paid as "relief on can" to the patient. The scale of fees should be fixed by order of the Local Covernment Board on a systematic basis, having due regard to local conditions. In emergency cases the system of a uniform fee, which should cover any ordinary after-attendance, is recommended for adoption, with the addition, perhaps, in scattered rural areas, of some allowance for mileage. The medical practitioner, in applying to the public authority, should be required to state that he has been unable to obtain payment of his fee from the patient or her representatives. A list of practitioners willing to respond to a midwife's call should be prepared and circulated in every area.

The Council of the London and Counties Medical Protection Society has just approved the following recommendation of its Midwives Committee :-

That having regard to the proposed payment by boards of guardians of the doctors called in to assist midwives, the London and Counties Medical Protection Society recommends the medical men in each union to meet and confer on the subject, and to agree as to what fee or fees they will accept, and then combine to insist on such fee or fees being paid (or guaranteed) by the guardians, and paid on the statement of the medical man that he is unable to obtain payment of his fee from the patient or her representatives.

DISEASE OF THE PITUITARY AREA AND CHANGES IN BODILY NUTRITION AND DEVELOPMENT.

RECENT studies, based on a consideration of clinical and pathological material, of the question of the relation of disease of the pituitary gland and its appendages to disturbances of bodily nutrition, arrest of bodily development, defective appearance or absence of secondary sexual characteristics, and so on, have served to show that the subject is a highly complex one, and its complexity seems to increase with advancing knowledge. The inter-relation of the various ductless glands and their cooperative function in the bodily economy are matters which are far from being fully elucidated. The well recognised and familiar condition known as acromegaly, in which the extremities in particular are overgrown, is frequently associated with tumours of the hypophysis, but not necessarily so. Some cases of that disease are sexually infantile, and in them secondary sexual characteristics are undeveloped. Loss of sexual appetite is apparently a symptom of early establishment in pituitary disease, though it is common in many intracranial growths. Further, there is a well-differentiated type of somatic and sometimes mental infantilism in which the body becomes fat, pubic and axillary hair does not grow, the testicles remain atrophic (degeneratio adiposo-sexualis), and this type is associated with pituitary disease—it is supposed defective function of the anterior lobe. In some cases of gigantism—a condition distinct from acromegaly disease in the region of the sella turcica has been found. In the skeleton of the Irish giant Magrath, described by the late Professor Cunningham, the cranio-pharyngeal canal is patent. Some giants are also sexually infantile. secondary sexual characteristics of the female, have sometimes been associated with bitemporal hemianopia and primary optic atrophy-indications of disease in the pituitary neighbourhood. It is evident we have not as yet reached the stage at which a pathological diagnosis can be made with certainty. In the Wiener Klinische Wochenschrift of April 29th Dr. Formanek describes the case of a girl, aged 18 years, who from early childhood had been backward physically and mentally; her bones were thin and small, the mammæ were undeveloped, and she had never menstruated. When she came under observation she complained of headache and inordinate sleepiness. Apparently no definite sign of intracranial disease was discovered. There is no mention, however, of the visual fields. Under observation she became steadily weaker, mentally and physically, and began to lose weight in a remarkable way. Just before her death, some months later, her weight was only 42 pounds. At the necropsy a cystic tumour was found growing from the base of the skull, impinging on the third ventricle, and bounded anteriorly by the chiasma, posteriorly by the cerebral peduncles, and laterally by the temporal lobes. The clinoid processes of the sella turcica were flattened, but the pituitary body itself was of normal size and in its normal position. The tumour was a squamous-celled epithelioma and grew from the epithelium lining what had been the duct from the pharynx to the hypophysis. In other words, it was of ectodermic origin, springing from the "rest" of that part of the stomatodæum of the embryo which passes upwards and backwards to the base of the skull. The ovaries and the genitalia were infantile. The interest of the case is obvious, but it leaves many problems as far from solution as before.

THE NORFOLK AND NORWICH HOSPITAL.

EXCELLENT work has been done by the physicians and surgeons of the ancient city that will always be honoured as the birthplace of Sir Thomas Browne, and the present practitioners in Norwich live up to their great traditions. Here for 140 years Norfolk has had its county hospital, the existence of which has been of the utmost benefit to medicine no less than to the sick poor of a wide area, and this institution has enjoyed the special patronage of the King and Queen since Their Majesties, when Prince and Princess of Wales, became residents in the easternmost county. His Majesty laid the foundation-stone of the present buildings 30 years ago, and visited the buildings in 1884, the year after they were opened by the Duke and Duchess of Connaught. Since that time the work of the hospital has greatly increased, there being at present over 200 beds available for occupation. In 1907 the honorary medical staff prepared at the request of the board of management a report setting forth the additions and improvements which they considered necessary for the maintenance of the hospital at a proper level of efficiency for modern treatment, and just a year ago this scheme was presented to the general board of management, showing that the improvements chiefly needed were as follows: the provision of new isolation and septic blocks, the present accommodation for infective cases being in the oldest part of the building and quite inadequate; new operating theatres; alterations in the out-patient and casualty departments; and additional quarters for the nurses and ward-maids. With some smaller requirements the estimated cost of these improvements was nearly £44,000, and the governing body, which is only able to meet current expenses with the help of legacies, recommended that no part of the work should be undertaken unless an endowment was forthcoming at least equal to the cost of building that part: A Cases of "feminism," where the male takes on the vigorous appeal during the past year has resulted in

sufficient funds being raised to satisfy this condition so far as concerns the isolation and septic blocks, which together will cost some £5600. The interest of the King was aroused in the scheme, and on Oct. 25th His Majesty visited Norwich, where he was received in state by the city fathers in their old St. Andrew's Hall, and was acclaimed with the utmost heartiness during his drive through the city. After reviewing and presenting colours to the Norfolk Regiments and the Royal Norfolk Yeomanry, he proceeded to the Norfolk and Norwich Hospital, where he was received by the Earl of Leicester, its president, who at the close of a religious service presented with a loyal address of welcome. In replying, the King paid a warm tribute to the memory of the late Lord Leicester, and expressed his gratification at being able to inaugurate the necessary extension of the hospital, the needs of which he commended to the support of the charitable. He concluded with these words: "The encouragement you give to your nurses to join the Nursing Service of the Territorial Forces meets with my most cordial approval. In matters of life and death the services of the trained nurse are no less essential than those of the physician or surgeon. I pray that the blessing of God may rest upon your labours." foundation-stone was then "well and truly laid" by His Majesty, who took his leave after a benediction had been pronounced by the Bishop of Thetford. We trust that the work begun under such fortunate auspices may not be hampered for lack of further funds, the more especially as there has been a suggestion of forming an adequate ophthalmic department by amalgamation with the Norfolk Eye Infirmary, which, if carried out, may necessitate an expenditure considerably beyond the present estimates.

THE DANGER OF FAST DRIVING.

THE sentence of eight months' hard labour recently passed upon Arthur Saytch at Devizes by Mr. Justice Phillimore cannot be regarded as undeserved. It is not necessary to describe the manner in which he drove into the rear ranks of a battery of Territorial artillery on the march in the early morning on Salisbury Plain, killing one and injuring others, as the inquest, the hearing before the magistrates, and the trial have been fully reported. It is satisfactory that conviction should have followed upon the proceedings taken by the Treasury, for a coroner's jury had failed to find a verdict of manslaughter, and acquittal might have given rise to the feeling that the action rightly taken on behalf of the Crown was oppressive and vindictive. Other drivers of motor-cars will do well to consider the futile nature of the excuses raised in his own defence by the prisoner, of which the most plausible no doubt was that he drove suddenly into thick mist which prevented him from seeing the soldiers in front of him in time to pull up. All motorists are aware of the almost amazing rapidity with which a motor-car in good order can be stopped in favourable circumstances, and those who do not drive motorcars will not contradict them. What motorists, however, apparently fail to realise is that the human as well as the mechanical element in the operations necessary to stop a motor-car have to combine in the consecutive performance of their functions in a space of time which leaves no margin for the correction of errors. The motor-car which is being driven without infringing the letter of the law as to speed at the rate of 20 miles an hour traverses, roughly speaking, 10 yards in a second, and consequently the driver who first comes in sight of an obstacle when it is at a distance of 10 yards approaches 2 yards nearer to it in every fifth part of a second occupied in appreciating the situation, in making up his mind what is to be done.

and in performing the physical acts necessary before any diminution of speed commences. Similar considerations apply to foot passengers, and at the recent inquest upon an elderly retired naval officer, who was run over at the bottom of Regent-street, it was made apparent that there was no excessive or dangerous speed on the part of the vehicle which caused his death, but that the accident was due to momentary hesitation on his part. There was time for him to have passed into safety, but there was none in which to correct an error once made. Subways are sometimes suggested as a preventive of street accidents of this kind, but it is doubtful whether they would be of great practical utility, even though they were to be adepted on a large scale. The young and active would not welcome the delay and extra trouble entailed by using them, and the descent and ascent of flights of stairs are irksome to the elderly and infirm; whereas young and old alike have a perfect right to use the highway and to have their safety considered by those driving along it. The punishment of those whose want of such consideration is proved against them should act as a warning to reckless and callous persons. A considerable, and indeed extraordinary, increase of street accidents within the metropolitan area due to vehicles of all kinds is recorded, and it will be interesting to observe whether they diminish or not during future years, as drivers and pedestrians alike become accustomed to the new conditions under which an augmented and accelerated vehicular traffic is conducted.

THE FRANCO-BRITISH EXHIBITION AND KING EDWARD'S HOSPITAL FUND FOR LONDON.

THE honorary secretaries of King Edward's Hospital Fund for London have received a cheque for £4775 from Sir Charles Hardinge, together with a letter, in the course of which he states: "According to Clause VIII. of the Articles of Association of the Franco-British Exhibition, Incorporated, any surplus remaining after the liquidation of that association is to be devoted to some public object or objects, charitable or otherwise, to be determined by the Secretary of State for Foreign Affairs for the time being, and the Minister whom the association shall select as holding similar office in the French Government for the time being. A cheque for £4775 has been forwarded to the French Ambassador, and I am now directed by Secretary Sir E. Grey to transmit to you herewith a cheque for a similar sum, representing the other moiety of the present available surplus, which the Secretary of State desires to place at the disposal of King Edward's Hospital Fund for distribution to British hospitals in London."

OCCUPATION NEUROSES.

THE statement that nervous disease is on the increase has become somewhat of a commonplace, although a distinction is not always properly drawn between the actual multiplication of cases of a disease and its better recognition. The number of patients who attend out-patient departments complaining vaguely of "their nerves" is noteworthy. malaise of indeterminate origin is attributed to the nerves, and the task of dissecting the imaginary from the real frequently calls for the most exemplary patience on the part of the examiner. There is a vast field of minor nervous disorders, of which the remark of Pitres is profoundly true, that "les maladies les plus faciles à observer ne sont pas toujours les mieux connues." Among these the so-called professional cramps occupy a foremost place. A professional cramp is an affection characterised by tonic or clonic convulsive movements, or by trembling or tremors, or paresis or palsy, which occur solely during the execution of a particular professional act, and are localised in some or all of the muscles which cooperate synergically in the performance of

that act. Professional dyskinesis, or occupation neurosis, is a preferable term. For the production of the condition the combination of a congenital predisposition with frequent repetition of the same functional act is essential; neither by itself is capable of establishing an occupation neurosis. It is more than 40 years since Duchenne of Boulogne ascribed the trouble to some central disturbance, and more than 30 since the late Dr. Vivian Poore advocated the peripheral theory in the pages of THE LANCET. Whichever be the view adopted, the importance of the mental factor must not be lost sight of. Mild local affections, such as arteritis, synovitis, myositis, and neuritis, have been noted, but they are inadequate to explain the specialisation of the neuroses. If we say that certain nerve cells concerned in the coördination of professional acts, and excited or exhausted by overwork in a predisposed individual, undergo a dynamic alteration whereby they respond to further calls on them by spasms, tremors, or paralyses, we have expressed all that is at present likely to be learnt of the pathogeny of the occupation neuroses. Yet they are being added to almost daily; automobilists' cramp appears to be the latest arrival. In a series of articles which have been furnished to the Nouvelle Iconographie de la Salpêtrière, M. Macé de Lépinay has given an admirable study of them. consideration of the all-important question of prognosis M. de Lépinay says must be based on four factors: the exciting cause, the presence or subsequent development of other neuroses, the patient's mental condition, and the duration of the affection. Prophylactic treatment is, of course, often impossible. Treatment by drugs is mostly immaterial. Physical treatment consists in professional rest, which is neither sufficient nor indispensable in M. de Lépinav's opinion, in local or general applications of electricity, massage, local and general hydrotherapy, and in particular in the "hydromineral cure," a method much vaunted in France at present. Psychical treatment is the necessary complement of the physical, and consists in patient, methodical, progressive muscular re-education or kinesitherapy. Combine with this the efficacious action of psychotherapy, and the physician has a weapon at his disposal in the guise of psycho. motor discipline with which occupation neuroses can often be most successfully combated.

PLAGUE shows no abatement in Mauritius. The Governor has notified the Secretary of State for the Colonies that 25 cases with 11 deaths were reported during the week ending Oct. 21st.

Dr. Norman Moore, physician to St. Bartholomew's Hospital, has been elected to an honorary Fellowship of St. Catherine's College, Cambridge.

MEDICAL SICENESS AND ACCIDENT SOCIETY.—
The usual monthly meeting of the executive committee of this society was held on Oct. 15th, Dr. de Havilland Hall being in the chair. The accounts presented showed a great falling off in the sickness claims, both in number and duration, during the summer months as compared with the experience of the winter. In a society formed for the most part of medical men in general practice, and therefore liable to exposure to bad weather, it is clear that such a result as this must be looked for. The financial results of the year's working have so far been very satisfactory, and, as in every previous year of the society's history, a substantial addition has been made to the invested reserves. Prospectuses and all further information may be obtained on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

SOME CONSIDERATIONS OF MEDICAL EDUCATION.

II.1

The One-portal System.—The Introductory Examination in General Subjects.—The Examination in Preliminary Scientific Subjects.

THE state of the medical education of the country is dependent equally upon two things: the opportunities for the acquisition of learning and practice offered at the centres of medical instruction, and the methods of testing the knowledge of the students which are employed by the various degree- and diploma-granting bodies. To report upon these opportunities and methods in complete detail would be entirely without the scope of these articles, for such a programme would imply the description of the state of every dissecting-room, of the standard demanded by every examiner in every subject, of the ability displayed by every lecturer on medical matters, and so on. Some such complete dealing with the subject was possible 30 or 40 years ago, both the number of medical centres and the number of subjects included in the medical curriculum being so much smaller. Now it is no longer possible, but fortunately there is no need whatever for it, as there are many easily accessible sources for much of this varied information, while there is good evidence to show that the medical education of the student at all the different centres presents many similar features, and the controlling power of the General Medical Council makes it certain, as we have seen, that the examinations which close these similar curriculums will themselves be similar. This fact has seemed to many to be in itself a fairly complete answer to those who advocate the institution of a one-portal system, under which all men would enter the medical profession after passing one State examination. The essential features of such a system, they say, are already present in our scheme of medical education, for, whatever the educational body under whose ægis the student decides to enter the medical profession, his examinations will be arranged upon a common plan and brought up to acommon standard by the central authority. But the answer does not meet the case in all directions. When medical education was a much simpler affair and when almost every medical man in England (for example). became qualified as a Member of the Royal College of Surgeons of England or as a Licentiate of the Society of Apothecaries of London, or as both, as far as England was concerned, something like a one-portal system did exist, the presence on the Register of the names of an inconsiderable number of graduates of three or four universities not giving rise to any grave feeling of class distinction between the membersof our learned profession. Certainly the English diplomates sometimes displayed a little acerbity with regard to the privileges allowed to Scottish graduates in medicine whose training was in no way superior to their own, a feeling whichwas faintly shared by Irishmen; but, roughly speaking, the vast majority of medical men entered the medical profession in the same way, and the only graduation in rank recognised among themselves was due to the class of their work. Now this is all altered. The methods of entrance to practice are not only numerous but dissimilar to an extent which the supervising authority of the General Medical Council cannot alter, though maintaining a good general standard; and the departure from a one-portal system has become very complete.

The part of supervision played by the General Medical Council is to admit the student to the roll of the profession when he is successful in obtaining the necessary qualifications, and to see that those qualifications are adequate. The

¹ No. I. was published in THE LANGET of Oct 23rd, p. 1232.

part played by the qualifying body is to examine him at different stages of his career, guaranteeing that he does not enter for those examinations until after the attendance at certain classes, and the expiry of certain time. The first step in the education of the medical student is his registration, and the registration of a student is not compulsory. The General Medical Council has laid down regulations in reference to the registration of students which are very precise, but there is nothing in the Medical Acts making it incumbent upon the student to enter his name with the Council at the commencement of his studies. It is sufficient for his name to be enrolled by his qualifying body upon passing one of the statutory preliminary examinations; that body becomes responsible for not admitting him to his final examination until five years later. It is important to remember exactly how the matter stands, as upon this very point of registration some quite acute differences of opinion

The preliminary examination, as provided for by the General Medical Council, supposing the student not to begin his studies by passing any recognised test at his university or corporation, is of fair scope, though it might be made harder, and the degree- and diploma-granting bodies have shown their readiness to comply with the modest requirements by instituting tests at least as rigorous as the statutory recommendations enjoin. The matriculation of the University of London is harder than the examination which opens up the career of medicine at other centres, but of recent years that examination has been modified, and exemption from it has been granted to medical students who have passed easier tests. But far more application is required from the student to pass the matriculation examination at the University of London than is required to pass any of the other entrance examinations, and the student who has passed it should be able to assimilate with greater ease the subjects of the purely professional examinations, but this depends a little upon the way in which he has learned his work. A number of those who matriculate at the University of London have been most laboriously coached; they can reproduce answers to many questions, but it seems to be a general opinion that in too many instances they acquire habits of working which do not tend to make of them practical medical men. The General Medical Council might well insist upon an all-round raising of the standard of general education, but in so doing it is necessary that any premium on cram should be avoided. Elasticity in the educational curriculum is more and more wanted as we grow to perceive that there is room in the ranks of the medical profession for workers of every kind.

The next step in the education of the medical student brings us to a point around which discussion rages. It is difficult enough to decide what subjects are strictly professional and what subjects are preliminary to the study of medicine, but it is doubly hard to arrive at a definite opinion how far it is well that the student should have acquired any knowledge of the preliminary subjects before beginning his curriculum of five years' study as a medical student proper, registered or unregistered. For the proper teaching of anatomy and physiology a medical school is required, but for instruction in zoology, chemistry, and botany, supposing botany still to be required as a compulsory subject apart from morphology, no medical institution is necessarily demanded for the student's work. Theoretically, as we said in the previous article, the preliminary scientific examination, the subjects of which are chemistry, botany, biology, and physics, should be passed at the end of the first year of the curriculum, leaving the student free to devote two full years to the study of anatomy and physiology and two full years to work in the wards, with the chance of obtaining his qualifications as a

qualified medical man within five years. The questions which immediately arise are: Can a knowledge of chemistry, botany, biology or zoology, and physics be acquired in a year with sufficient fulness to be of permanent value to the student? Is there not a risk either that mere smatterings only will be. learnt or that the student in his desire to enter more fully into the subject should fail to be ready for his examination at the end of a year; in other words, should encroach upon time which ought to be, or is designed by the General Medical Council to be, devoted to purely professional subjects? Some observers, those who are best satisfied with the position of things as they are, and are the most certain that progress in medical education is taking place along the right lines, will say that a year is quite sufficient time in which to obtain familiarity with the principles of chemistry, botany, biology, and physics if the instruction in those subjects is given only with direct reference to medicine, it being, of course, understood that the examiners in testing the knowledge of the students will be careful to observe the same limitation. authorities conceive that to ask the student to spend only a year on these subjects is to invite him to obtain a verbal acquaintance with things which he does not understand, and must tend to divorce the practice of medicine from its proper adherence to the sciences with which it should be indissolubly blended. The importance of the difference of views thus expressed is accentuated by the fact that each party would logically desire a different course of proceeding in the mechanism of medical education, and though the truth may lie between the two extreme points of view it is not easy to advise an intermediate course of action which should correspond with that intermediate truth. Those who desire that the medical student should be educated in the preliminary scientific studies solely with the eye to his use of those studies in the practice of medicine will naturally hold that he should study those subjects in a medical school. Those who consider that the medical student, especially, for example, in such subjects as biology and chemistry, should receive thorough and systematic teaching on general lines-any medical application of what he has learned being allowed to reach him afterwards—would wish that the systematic teaching should be given at a scientific institution or as part of a general university curriculum, and not at a medical school. Now, although it is possible to devise a schedule for the examination of medical students in the preliminary scientific subjects which shall on the one hand be fairly general and systematic, and shall on the other have obvious applications to medicine, it is not easy to devise an institution for the teaching of these subjects which is both a medical school and not a medical school. For this reason those who desire that the lad should learn his preliminary scientific studies at school before beginning his professional course and those who wish him to learn them at medical schools cannot agree, for the strong points in the arguments of each are not open to compromise.

And the whole situation is further complicated by the fact, to which allusion has been made already, that the registration of the medical student not being compulsory the General Medical Council, the central authority of medical education, has no hard-and-fast jurisdiction over the beginning of the course. If registration as a student were compulsory upon the medical student it would be easier for the General Medical Council to ensure that instruction in these preliminary subjects was only acquired at certain places where the standards and facilities for learning appeared to the Council as the central authority to be satisfactory, but registration not being compulsory the duty of the Council is confined to registering the student as

a practitioner when he has passed all the necessary tests, it being left to the particular educational body by which he is entering the profession to ascertain, by any system which seems good, whether he has spent the necessary time upon his curriculum and to guarantee to the Council his due observation of the statutes. It follows from this that a student can learn his preliminary scientific subjects either at a medical school, or at a public school, or at a university, exactly as he likes, if the body under whose ægis be intends to enter the medical profession is satisfied with the place where he has obtained his instruction. The position thus arrived at may appeal by its flexibility to those who find that our educational courses have in every walk of life a great tendency to become too confined by regulations and too cramped by syllabuses, but it is not a universally fair one. Thus one student may enter, say, in October, 1909, at the medical school attached to one of the metropolitan hospitals with the expectancy of becoming a qualified medical man at the end of 1914. He then proceeds to learn at the medical school his preliminary scientific subjects. Another student of the same age may learn his preliminary science subjects at a public school where the course is approved by the Conjoint Board of the Royal College of Physicians of London and the Royal College of Surgeons of England. He need not enter a medical school at all till 1910, and will do so having passed not only his entrance examination but his examination in preliminary science subjects. He will have enjoyed the advantage of one more year in the sheltered life of a public school and will possibly have learned his preliminary scientific subjects better from a general point of view than he would have learned them at many of the London medical schools, which schools labour manfully under great disadvantages in instructing their pupils. Until quite recently the student under the English Conjoint Board who entered the medical school in 1910, having done his preliminary scientific course at school, was able, like the student who entered in 1909, to sit for his final examinations in 1914, the last year of his school life counting as the first year of his medical curriculum, and of the two students he was probably the more likely to obtain his qualifications in 1914. The Conjoint Board has now made a concession in that the last year spent at a public school only counts to the student as six months of his curriculum.

(To be continued.)

MOTORING NOTES.

BY C. T. W. HIRSCH, M.R.C.S. ENG., L.R.C.P. LOND.

The New 14-16 h.p. Darraoq Car.

Following the unmistakable tendency that there is towards four-cylinder cars of more moderate power, and of considerably lower price, the Darracq Motor Company, Limited, of Walnut Tree Walk, London, have introduced a new model, which, both in price and design, should meet the present demand. As it will be shown at Olympia in a few days, it struck me that the medical profession visiting the exhibition might appreciate some facts about this car, which is four-seated, of light weight, sufficient power, reasonable speed, and is turned out complete at the moderate figure of £225. Of course, if a firm of no previous reputation brings out a vehicle of original features, the prudent man will think twice before considering a purchase, but in this case the innovation is vouched for by a company with an established name, and seems to me to imply a good deal as to the future policy of Messrs. A Darracq and Company Limited

Now to describe the car both briefly and clearly. The four cylinders have each a bore of 85 mm. and a stroke of 100 mm., and are cast in one piece; the valves are all on one side, so as to be worked by one cam shaft; and this shaft projects, so that if a supplemental ignition is ordered, a coupling can be attached and the commutator

so driven. The valve-lifters are fitted with rollers where they receive the impact of the cams on the two-to-one shaft, and the guides are cast in the upper part of the crank case. Standard ignition is by a high-tension Sims-Bosch magneto, with fixed timing. It is driven by gearing, and the spindle also works the water-circulating pump. The magneto is held by a single nut to the top of the crank case. I prefer a stirrup for holding the magneto to its bed. I found that I was able to undo the nut, but it was very inaccessible and troublesome; undoing a nut underneath a projection and needing contortions of the hand to get at, may also be damaging to the professional look of the practitioner's cuffs. The carburettor is both simple and accessible; the petrol enters the top of the float chamber by gravity, and passes to the jet, which stands up in an open tube, leading to the inlet valves by a throttle, with an automatic air-intake. Through the open lower end of the tube air is sucked, petrol comes up the jet, and the amount that reaches the engine is regulated by a foot-controlled throttle. Slacken one exposed nut and then the jet can be pushed up and withdrawn. If there were not other inducements, and as a matter of fact there are many, this convenient petrol jet would be enough to make me think highly of the car. I have a recollection of once having to take down a carburettor, so as to clear a blocked jet, and, in that case, to get the carburettor off necessitated removing inlet pipes and hot exhaust pipes, so the accessible jet appealed greatly to me. Lubrication is automatic, but without any visible apparatus on the dash. Inside the crank case is a plunger pump driven off an eccentric on the cam shaft, and thus lubricant is supplied to the crank case, gudgeons, and main bearings. Under the crank case is a sump from which the pump feeds and to which all surplus oil is returned. The oil is introduced by a pipe projecting from the crank case, and a float stands out of this pipe from the height of which the quantity of oil can be judged, and the time for replenishing the supply gauged. To make sure that the oil pump is performing its work, a little tap is screwed into the crank case near the carburettor, with the engine running; if the pump is operating, oil will shoot out of the tap when it is opened. The pump can also be fairly easily got at. The chassis, which is of pressed steel, forms the underframe and shield, but in the centre there is an opening through which, standing in a pit under the car, a plug in the lower half of the crank case can be taken out, and then with a long screw-driver the pump can be extracted.

The cooling system is worked by a gear-driven pump, and a large fan behind the gilled tubed radiator further ensures ample cooling. On the trial run of two hundred and odd miles the cooling was ample to enable the engine to develop its full power for very long periods. The trans mission is by a leather-covered cone clutch, the engagement of which is made easy by buffer springs, through a short shaft with squares at each end to a gear box, in which provision is made for three speeds forward and a reverse. These are effected by double-sliding pinions, controlled by one lever working in a gate quadrant. From the gear-box a cardan shaft with a universal joint at either end conveys the power to the live axle. The back axle revolves with the wheels and is encased in a steel sleeve, an enlargement of which forms the differential case, and in this the crown wheel meshes with the bevel at the end of the cardan shaft. The side thrust is taken up by ball-bearings. In the gearbox as well as for the wheels plain bearings are employed. Provision is made for increasing the tension of the clutch spring. Another characteristic is the comfort of the car's suspension, which is the result of semi-elliptic springs in front and three-quarter elliptic at the back. The steering pillar is well raked, and provision is made for closing up the bearing surfaces, so as to avoid play or backlash as they wear. The control is by a foot accelerator, working the throttle in the induction pipe, and it is certainly preferable to a hand-worked control; the only trouble that I had in this particular instance was that the spindle on the mushroom was rather short, and I found it rather a stretch to keep the pedal down. The makers, of course, could easily fit a longer spindle in accordance with the driver's length of limb. An extra control is fitted to a sector attached to the dash, which is useful for starting the engine; an agitator is also attached to the carburettor for flooding, and so obtaining a richer mixture, an advantage for starting, especially in cold weather. Instead of a switch a small button projects on the dash, by

which the electricity is earthed and cut off from the engine. Internal expansion brakes are fitted to the hubs of the rear wheels and a foot-brake of similar design is mounted behind the gear-box. Artillery wheels are supplied with 810 \times 90 tyres.

Messrs. Darracq usually fit a four-seated double phaeton body to this car, but the chassis would do well with a two-seated body and front glass and hood for the practitioner who is his own chauffeur, while with a landaulette body it would make an ideal carriage for the medical man who does not drive himself. The makers had such confidence in the car, or the writer, perhaps in both, that they handed me a new one from stock, with the request that I should take it for a drive without any representative of their firm, and use it for any trial I considered proper. I certainly took them at their word, and though the weather was unfavourable, with three passengers I used it for a holiday tour, over Kentish hills, through London traffic, via Kingston, Staines, Maidenhead, Henley, Beaconsfield, up the 1 in 11 Studley Green Hill, down Cockshoot Corner, and so by Oxford. Blenheim Palace, Shipston-on-Stour, Stratfordon-Avon, Warwick, Leamington, and home by Daventry and Towcester, with a good test for the brakes on West Hill, Highgate. In all it was over a 200-mile run, and as a result I find that this little four-cylinder car has the merits of silence, flexibility, and smooth running, and power enough to ensure a good average speed up hill and down dale. In fact, with four passengers it took many hills of 1 in 14 easily on the second speed, and did a test hill of 1 in 6 without a murmur on the first speed. It seems to meet the requirements of the average medical man who is seeking for a fair-sized car of the orthodox type but only desires to pay a comparatively small sum for possession and upkeep. It is certainly as simple and free from complications as a car can be, and should be inspected by all medical men attending at Olympia in search of a motor.

Chauffeurs and their Liveries.

A recent case at the West London police-court is of interest, as evidence of what chauffeurs may try to obtain by virtue of common custom. In the case in point the owner of a car who had dismissed his driver sued the latter for the return of livery supplied while in the plaintiff's service. The defendant contended that the custom was for the livery to be given to the driver, but the learned magistrate properly held that such custom was not established and made an order for the return of the overcoat in question.

MORTALITY FROM "CONSUMPTION" IN DUSTY TRADES IN THE UNITED STATES OF AMERICA.

We have received from the Government Printing Office at Washington Bulletin No. 79 of the Bureau of Labour, which contains an important report by Frederick L. Hoffman on the mortality from consumption in dusty trades. Whether or not the writer is a member of our profession we are uncertain, but it would appear as though this were the case, for in the present report he refers to his own contributions on tuberculosis and other allied topics to various American medical periodicals and medical societies. But in either case the salient points of this report are well worthy of comment.

The use of the term "consumption" in such a work seems to us unfortunate, for the reader is left to decide for himself whether it is meant to indicate pulmonary tuberculosis exclusively, or whether it applies to all forms of tuberculous disease. From the context, however, we gather that the former is the sense in which the term is employed; and in what follows the term "consumption" will be regarded as synonymous with tuberculous phthisis. In order to determine approximately the loss of life from phthisis in the various occupations, several statistical expedients are resorted to in the United States. Among these the most trustworthy method is obviously that of ascertaining the true rate of mortality-i.e., the number of deaths occurring in every 1000 persons in any particular industry. This is the method adopted by Dr. John Tatham in his successive supplements to the reports of the Registrar-General of England, to which frequent reference is made in the present work. But in America it is seldom employed;

in the first place, because of the want of accurate information regarding the numbers found to be engaged in the several employments at the last census, and in the second place because of want of uniformity in the classification of workers adopted by the several Boards of Health. The expedient most favoured in the United States is that of calculating the proportion of deaths from a particular disease as a percentage of the total deaths at specified periods of life. The result is termed the "proportionate mortality figure," and this has been extensively employed in the present report with the object of utilising the valuable insurance mortality statistics which in America are generally available for the purpose.

In this connexion a warning is desirable against confounding the term "proportional mortality figure" as used in this report with the term "comparative mortality figure" as employed in the supplements to the reports of the English Registrar-General, the latter term having an entirely different meaning. In America the insurance mortality statistics are derived from the experience of a large and representative company which has from time to time published the facts of its experience. The insurance proportional mortality returns, however, obviously indicate a phthisis death-rate which is below the normal, since the figures are affected by medical selection. In other words, the true loss of life from consumption at specified ages would have been higher had no medical selection of the lives been effected. The method of applying the proportional mortality figure to workers at successive ages in the various occupations may be illustrated as follows. At ages 25 to 35 years, out of every 100 deaths from all causes in the United States registration area during the last seven years 31 were from phthisis; the corresponding proportion of deaths in the industrial insurance mortality experience was 71 per cent for grinders, 67 per cent. for compositors, 59 per cent. for upholsterers, and 53 per cent. for potters, &c. The difference between the normal proportional phthisis mortality for the entire area on the one hand, and that of the individual occupations on the other, measures approximately the hazard to health and life in the several industries.

Without attempting to follow the author in his detailed descriptions of occupational mortality, which occupy 240 pages of an octavo volume, we proceed to summarise some of the more interesting of his conclusions. For the purposes of the present investigation careful analysis has been made of nearly 23,000 deaths from all causes occurring among workers of various ages in the principal industries of the United States. Taking together all the occupations for which information is available, the proportional mortality from consumption at all ages above 15 years appears to average 28 per cent. of the mortality from all causes. Among individual industries the proportion ranges from the highest, 37 per cent., in those occupations which are exposed to metallic dust, to the lowest, 24 per cent., in occupations exposed to organic dust. Extending the analysis to divisional periods of life, we find that at ages 15 to 25 the proportional consumption mortality was highest (viz., 50 per cent.) in occupations exposing to the inhalation of animal and mixed fibre dust, and next highest (viz., 47 per cent.) in occupations exposing to metallic dust. In occupations exposing to organic dust it was 41 per cent; to street dust, 40 per cent.; to vegetable fibre dust, 39 per cent.; and to mineral dust, 32 per cent. At ages 25 to 35 the proportional consumption mortality was highest (viz., 57 per cent) in occupations exposing to metallic dust; in occupations exposing to vegetable fibre dust it was 53 per cent; to organic dust and to animal and mixed fibre dust, 50 per cent.; and to street dust, 44 per cent. At ages 35 to 45 it was highest (viz., 43 per cent.) in occupations exposing to metallic dust; in occupations exposing to animal and mixed fibre dust and to vegetable fibre dust it was 40 per cent; to mineral dust, 36 per cent.; to organic dust, 36 per cent.; and to street dust, 35 per cent. At ages 45 to 55 it was highest (viz., 28 per cent.) in occupations exposing to mineral dust; in occupations exposing to metallic dust it was 24 per cent.; to animal and mixed fiore dust and to vegetable fibre dust, 23 per cent.; to organic dust, 22 per cent.; and to street dust, 14 per cent. At ages 55 to 65 it was highest (viz., 16 per cent.) in occupations exposing to mineral dust; whilst in occupations exposing to the inhalation of other irritating kinds of dust it averaged from 11 to 12 per cent. of the deaths from all causes.

With respect to that period of life in which pulmonary

phthisis is most prevalent in America the following particulars will be interesting. In the year 1900 the mortality from all causes among men in specified industries was 15.0 per 1000, and the consumption-rate was equal to 16 per cent. of that mortality. Among men in manufacturing industries the general death-rate was 13.8 per 1000, of which 18.8 per cent. was due to consumption. Among men in agricultural, transportation, and other outdoor occupations the general deathrate was 15.8 per 1000, and the consumption death-rate equalled 9.5 per cent. of the total. By contrasting the consumption mortality in these two groups of employment the enormous waste of human life becomes readily apparent. This will be even more clearly shown if we quote a few particular instances. Thus we read that the census mortality rate from all causes among stonecutters was 14.9 per 1000, 36.2 per cent. of which was due to consumption. Among printers and compositors the general rate was 12.1 per 1000, 36 per cent. of which was credited to consumption. On the other hand, among the strictly outdoor class—i.e., farmers and farm labourers—whilst the general death-rate was relatively high, viz., 17.6 per 1000, the consumption death-rate was only 1.1 per 1000, or 6.3 per cent. of the mortality from all

Adopting the author's estimate of about 32 millions as the number of the American wage-earning population above the age of 15 years, and assuming a consumption death-rate among them of 2·2 per 1000, the number of lives lost by consumption in this section of the population would approximate to 70,000. If by intelligent sanitary inspection and control, especially as regards ventilation, it were possible to eliminate most of the conditions injurious to health in factories and workshops, it is quite reasonable to hope that the consumption death-rate among wage-earners would be reduced to a ratio not exceeding 1·5 per 1000. Such a reduction would mean an annual life-salvage of more than 22,000 lives. The author goes on to calculate, by placing an arbitrary economic value on the net result of a year's life, that the annual financial value of such life-salvage would be colossal.

THE FIFTY-EIGHTH REPORT OF THE INSPECTORS OF LUNATICS, IRELAND.1

THE number of the insane in establishments was on Jan. 1st, 1909, 23,931, this being an increase of 213 upon the number recorded for Jan. 1st, 1908. The increase during 1908 was greater than that which took place in 1906 or 1907. It was, however, 200 less than the average increase for the preceding ten years. The numerical increase at the end of last year appears mainly to be due to the transfer to the asylums of the inmates of the imbecile wards of workhouses. As no certificates of insanity are required for the cases maintained in workhouses the vacancies caused by such transfers are quickly filled up by paupers suffering from the mental decay of old age, and these cases, which were not previously classified as insane, are then for the first time returned amongst the insane inmates of the workhouses, thus swelling unduly the number of the insane under care. During the year 1908, 816 cases were transferred from workhouses to asylums, being over 21 per cent. of the total number of admissions to the latter institutions. The percentage was higher than that of any year since 1904. Unfortunately, these transfers are included amongst the first admissions, and therefore, without the necessary correction, such admissions cannot be accepted as showing the amount of freshly occurring insanity in the community or as affording reliable data on which to draw conclusions regarding the increase or decrease of insanity amongst the population. In 1881 the admissions to district asylums numbered 2592 and in 1908 they amounted to 3798. In the case of the private asylums the numbers for 1881 were 145 and for 1908 they had increased to 269. The increase in the last as compared with the first year of the period amounted in the case of district asylums to 52 per cent. and in the case of the private asylums to 86 per cent. The number of the insane under

care has increased from 250 per 100,000 of the population in 1880 to 547 per 100,000 in 1908. The total number of patients discharged during the year was 1848. Of these, 1401 were discharged recovered, showing an increase of 30 on the number for the previous year. The percentage of recoveries on the admissions was 36.9. The number of deaths during the year was 1417. The death-rate per cent. of the daily average number resident was 7.1. In only 236 cases were post-mortem examinations made, and in two asylums no necropsy was made during the year.

It appears that complaints have recently been made by the medical superintendents of some asylums that the candidates for appointment as attendants and nurses are generally of a lower standard—physically and mentally than those who offered themselves for such posts in former years. It is manifest that to obtain persons physically and constitutionally sound, of good intelligence, and of kindly disposition and temper, it is necessary that the wages offered and the conditions of service should be sufficiently attractive. In so poor a country as Ireland it is not to be expected that the remuneration can be as high as that paid for similar services in some other countries. All that can be asked is that the wages offered to candidates entering the asylum service should not be lower than the usual rate of remuneration for skilled labour in the neighbourhood, and that the conditions of service—including accommodation, food, and hours of duty—should be made as attractive as possible. It appears, however, that although in some asylums the wages and conditions of service have been greatly improved, in others they remain as they were many years ago, and are below the average now paid for similar labour elsewhere.

We notice with regret that the inspectors have in a large number of the asylums to report on the defective character of the accommodation. In one asylum the wings of the institution provide very cheerless and prison-like accommodation. The day rooms are insufficient for the numbers who sleep there, and consequently some of the women have to sit in the flagged corridor during the day. In another asylum the want of day-room accommodation is especially noticeable; in fact, there is an almost total absence of day-rooms, the great majority of the patients having to be crowded together in corridors. In another the number resident is considerably in excess of the number for whom there is proper accommodation, and the overcrowding is so great that beds have in some cases to be laid down in corridors. In yet another the institution is so overcrowded that a great number of the males have no indoor accommodation in which to spend their days. The inspection of the workhouse accommodation for the insane has revealed conditions which are in several cases even more unsatisfactory.

Looking Back.

PROM

THE LANCET, SATURDAY, Oct. 29th, 1881.

To the Editor of THE LANCET.

SIR,—I have searched all the books to which I have access on diseases of the eye, but cannot meet with a description of any case attended with symptoms similar to the following, which has been under my care for the last fortnight, and an account of which I now send, for insertion in your much-esteemed Periodical, in the hope that some of your ingenious correspondents may be induced to favour the public with their opinion on it, and at the same time make known whether experience or reading has furnished them with any example of the kind, adding to their account a statement of the medical treatment and results.

John Frost, carrier, aged 48, of stout make and rather plethoric habit, on his return from Exeter market, was seized with such a dimness of sight that he could not discern any object at the distance of a few yards, and was unable to keep on the road without holding by the end of his cart, though it was only about three o'clock P.M., and the day quite fine and clear. Before reaching his home, however, he found that on closing, or covering, either eye with his hand, he could see sufficiently well with the other. I was sent for to his house next morning, and found that he could scarcely perceive even

¹ The Fifty-eighth Report of the Inspectors of Lunatics (Ireland) for the Year ending Dec. 1st, 1908. Dublin: Printed for His Majesty's Stationery Office by Alexander Thom and Co., Abbey-street.

the lines of a book when both eyes were open, but that on closing either of them he could read distinctly every word.

These symptoms were accompanied with considerable pain in the forehead, and a full, quick, and rather hard pulse; being a stout man, I took from the arm about 24 ounces of blood, gave him some compound colocynth pills, with a grain of calomel in each; two to be taken every three hours till the bowels were freely opened, and directe i a blister to be applied to the back of the neck at bedtime. Next day I found the pulse softer, the pain of the head gone, but no alteration in the sight, either for the better or worse. In this state he continues, entirely free from pain, but still under the necessity of wearing a bandage over one eye, without which he cannot even see to walk. Errhines, and a little spt. etheris sulphurioi, applied to the eyes twice a day since the application of the blister, always afford him temporary benefit. I cannot discover the slightest irregularity in the motions of the iris; the pupils seem neither more dilated nor contracted than they ought to be; the humours appear perfectly transparent and healthy, and there are no traces of either irritation or inflammation to be perceived. Whether the above anomaly portends the commencement of amaurosis, or is to be considered merely as resulting from a temporary weakness or relaxation of nervous power, I shall leave to the determination of the learned; but I cannot help thinking, that it strongly favours the opinion of those who advocate the existence of some fluid essence circulating in the course of the nerves, the influx of which, in this case, seems insufficient for supporting the action of both eyes at once, but enough when directed upon one of these organs to render vision complete.

I am, Sir, your most obedient servant,
WILLIAM REED, Surgeon.

Kentisher, near Collumpton, Devonshire, October 20th, 1831.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 8180 births and 3771 deaths were registered during the week ending Oct. 23rd. The annual rate of mortality in these towns, which had been equal to 12.9 and 12.2 per 1000 in the two preceding weeks, further declined to 12.0 in the week under notice. During the first three weeks of the current quarter the annual death-rate in these towns averaged 12 · 4 per 1000, and in London during the same period the rate did not exceed 11.9 per 1000. The lowest annual rates of mortality recorded in the 76 towns last week were 5·2 in West Hartle-pool, 5·6 in Ipswich, 5·7 in Walthamstow, and 6·5 in Willesden; the rates in the other towns ranged upwards, however, to 19·2 in St. Helens, 19·3 in Huddersfield and in Middlesbrough, 19 5 in Great Yarmouth, and 20 6 in Merthyr Tydfil. In London the recorded death-rate last week did not exceed 11.5 per 1000. The 3771 deaths in the 76 towns last week showed a further decline of 74 from the numbers returned in the two preceding weeks, and included 312 which were referred to the principal epidemic diseases, against numbers declining steadily from 849 to 387 in the eight preceding weeks; of these 312 deaths, 142 resulted from diarrhea, 46 from diphtheria, 36 from measles, 33 from scarlet fever, 28 from whooping-cough, 25 from "fever" (principally enteric), and 2 from small-pox. The 312 deaths from these epidemic diseases last week were equal to an annual rate of $1\cdot 0$ per 1000, against rates declining in the eight preceding weeks from $2\cdot 7$ to $1\cdot 2$. No death from any of these epidemic diseases was registered last week in Cardiff, Croydon, Willesden, Walthamstow, or in 12 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 2.8 in Salford, 3.0 in Hull and in Hauley, and 3.4 in Barnsley. The deaths attributed to diarrhee in the 76 towns, which had declined in the eight preceding weeks from 675 to 208, further fell last week to 142, but caused annual death-rates ranging upwards in the several towns to 1.6 in St. Helens, 1.7 in Wigan and in Hull, and 1.9 in Devonport and in Tynemouth. The deaths referred to diphtheria, which had been 28 and 51 in the two previous weeks, declined again last week to 46; they included 11 in London and its suburban districts, 6 in Manchester and Salford, and 3 in Hull. The 36 fatal cases of measles were fewer by 4 than

the number in the previous week, but showed proportional excess in Birkenhead and in Hornsey. The 33 deaths from scarlet fever showed a further decline from those returned in the two previous weeks; the 4 recorded in Blackburn were equal to an annual rate of 1.5 per 1000. The 28 fatal cases of whooping-cough exceeded those in the previous week by 1. Of the 25 deaths referred to "fever," 2 were returned in Wolverhampton, in Liverpool, and in Leeds, and 7 in London and its suburban districts. The 2 fatal cases of small-pox occurred in Hull. The number of scarlet fever patients under treatment in the Metropolitan Asylums and London Fever Hospitals, which had steadily increased in the eight preceding weeks from 2347 to 2810, had declined to 2799 on Saturday last; 345 new cases of this disease were admitted to these hospitals during last week, against 324 and 371 in the two preceding weeks. The Metropolitan Asylums Hospitals contained 2 small-pox patients on Saturday last. Of the 1067 deaths registered in London last week, 174 were referred to pneumonia and other diseases of the respiratory system, against 186 and 167 in the two preceding weeks, and were 25 below the corrected average number in the corresponding week of the five years 1904-08. The causes of 37, or 1.0 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death registered during last week were duly certified in Bristol, West Ham, Bradford, Newcastle-on-Tyne, Portsmouth, and in 50 other smaller towns; the 37 uncertified causes of death in the 76 towns last week included 7 in Liverpool and 6 in Birmingham.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 886 births and 470 deaths were registered during the week ending Oct. 23rd. The annual rate of mortality in these towns, which had been equal to 12.0 and 12.8 per 1000 in the two preceding weeks, further rose to 13.1 in the week under notice. During the first three weeks of the current quarter the annual death-rate in these Scotch towns averaged 12.6 per 1000, and exceeded by 0.2 the mean rate during the same period in the 76 large English towns. The annual death-rates last week in these Scotch towns ranged from 10.2 and 10.4 in Paisley and Edinburgh, to 14.8 in Glasgow and 17.0 in Perth. The 470 deaths from all causes in the eight towns last week showed a further increase of 14 upon the numbers returned in the two previous weeks, and included 54 which were referred to the principal epidemic diseases, against 45 in each of the two preceding weeks. These 54 deaths were equal to an annual rate of 1 5 per 1000, against a mean rate of 1.0 from the same diseases last week in the 76 English towns. The 54 deaths from these diseases in the Scotch towns last week included 28 from diarrhoea, 11 from diphtheria, 5 from measles, 5 from whooping-cough, 3 from scarlet fever, and 2 from "fever," but not one from small-pox.. The deaths attributed to diarrhoea, which had been 18 and 15 in the two previous weeks, rose to 28 last week, and exceeded the number in any week since the early part of September; 14 occurred in Glasgow, 5 in Dundee, 3 in Aberdeen, and 2 in Edinburgh and Leith. The 11 deaths from diphtheria were within one of the number returned in each of the two preceding weeks, and included 6 in Glasgow and 3 in Edinburgh. The 5 fatal cases of measles showed a decline; 3 were returned in Glasgow and 2 in Edinburgh. The 5 deaths from whoopingcough exceeded the numbers in recent weeks, and included 2 in Greenock; and the 3 fatal cases of scarlet fever occurred in Glasgow. The 2 deaths referred to "fever" were fewer than in any recent week, and were both certified as cerebro-spinal meningitis; 1 each was returned in Glasgow and in Edinburgh. The deaths referred to diseases of the respiratory system in the eight towns, which had been 59 and 58 in the two preceding weeks, rose to 84 last week, and exceeded by 28 the number in the corresponding week of last year. The causes of 17, or 3.6 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 1.0 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated

population of rather more than a million, 613 births and 325 deaths were registered during the week ending Oct. 23rd. The mean annual rate of mortality in these towns, which had been equal to 15·1 and 15·2 per 1000 in the two preceding weeks, declined to 14·8 in the week under notice. During the first three weeks of the current quarter the annual death-rate in these Irish towns averaged 15.0 per 1000, whereas the mean death-rate during the same period did not exceed 12.4 in the 76 largest English towns and 12.6 in the eight principal Scotch towns. The annual deathrate during last week was equal to 15.2 in Dublin (against 17.5, 16.8, and 16.0 in the three preceding weeks), to 12.9 in Belfast, 21.2 in Cork, 16.9 in Londonderry, and 19.5 in Waterford; the mean rate in the 16 smallest Irish towns was equal to 14.5 per 1000. The 325 deaths from all causes in the 22 town districts last week showed a decrease of 9 from the numbers in the previous week, and included 22 which were referred to the principal epidemic diseases, against 42, 37, and 29 in the three preceding weeks; these 22 deaths were equal to an epidemic diseases, against 42, 37, and 29 in the three preceding weeks; these 22 deaths were equal to an annual rate of 1.0 per 1000, corresponding with the rate from the same diseases last week in the 76 English towns. The 22 deaths from these epidemic diseases in the Irish town districts last week included 12 from diarrhea, 5 from whooping-cough, 2 from diphtheria, and 1 each from measles, scarlet fever, and "faver" but not one from small-nox. The deaths and "fever," but not one from small-pox. The deaths attributed to diarrhoea in the 22 towns, which had been 22 and 14 in the two previous weeks, further declined to 12 last week, and included 5 in Belfast and 2 both in Dublin and in Cork. The 5 fatal cases of whooping-cough were within one of the number in the previous week, and included 2 both in Cork and in Limerick and 1 in Dublin. Of the 2 fatal cases of diphtheria, 1 occurred in Ballymena and 1 in Clonmel. A fatal case of typhus was registered in Dublin. The 50 deaths referred to pneumonia and other diseases of the respiratory system last week in the 22 towns corresponded with the number returned in each of the two preceding weeks. The causes of 14, or 4.3 per cent., of the deaths in the 22 town; last week were not certified by a registered medical practitioner or by a coroner; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 1.0 per cent., but in the eight Scotch towns the proportion was equal to 3.6 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified: -Fleet-Surgeons: M. L. B. Rodd to the Niobe, and to the Kent on recommissioning; E. R. D. Fasken to the Argonaut. Staff-Surgeons: J. O. Rowan to the Mars; P. H. Boyden to the Fisgard; and E. T. P. Eames to the Endymion. Surgeon: E. Cameron to the Argonaut.

ROYAL ARMY MEDICAL CORPS.

Colonel Maclean officiates as Principal Medical Officer, 8th (Lucknow) Division, vice Surgeon-General Ellis, on leave. Colonel Anderson has reverted to his permanent appointment as principal medical officer, Allahabad and Fyzabad Brigades.

Lieutenant-Colonel G. E. Hale, D.S.O., has been appointed medical inspector of recruits in the Eastern Command, and Lieutenant-Colonel T. Du B. Whaite has been appointed to the Eastern Command. Major C. K. Morgan has been

appointed to the Belfast District for duty.

Captain Francis S. Irvine, from the Seconded List, is restored to the establishment (dated Oct. 13th, 1909).

Indian Medical Service

Major H. G. Melville officiates as Principal, Medical College, Lahore, vice Major Sutherland, going on one year's leave; and Captain Macgilchrist officiates as Professor of Materia Medica, Lahore Medical College, vice Major Melville. The services of Major Smith are placed permanently at the disposal of the Punjab Government. Captain E. C. Hepper has been appointed to the substantive medical charge of the 51st Sikhs (Frontier Force), vice Captain H. Halliday. Captain G. W. Maconachie has been appointed to the sub-

Captain W. C. Hamilton. Captain R. F. C. Talbot has been transferred to the temporary half-pay list from July 24th.

TERRITORIAL FORCE.

Royal Army Medical Corps.

3rd Lowland Field Ambulance: Lieutenant James H. H. Pirie to be Cuptain (dated Oct. 1st, 1909).

1st South Midland Field Ambulance: Lieutenant Hans Frederick William Boeddicker, from the 2nd South Midland Field Ambulance, Royal Army Medical Corps, to be Lieutenant (dated Sept. 29th, 1909).

1st North Midland Field Ambulance: Captain William J.

Reid to be Major (dated April 19th, 1909).

THE PHYSICAL EFFECTS OF THE ALLOWANCE FIELD SERVICE RATIONS.

An officer with 20 volunteers of the 1st Battalion Loval North Lancashire Regiment, none of them specially selected, have recently been the subject of an experiment for the purpose of determining the quality and quantity of the field service rations in relation to the clothing and equipment of the soldier. The company were instructed to march for 12 days a distance of at least 14 miles under service conditions. The valies equipment with field service kit was carried together with 150 rounds of ball ammunition, weighing altogether, with rifle, more than half hundredweight. For the first six days the food consisted wholly of biscuit and preserved meat and vegetables. Subsequently fresh meat and bread were issued in lieu of preserved rations, and this was followed by a noticeable improvement in the physique and spirits of the men. A report will be made for the information of the Army Council by Lieutenant-Colonel Melville, R. A. M.C.

Correspondence.

"Audi alteram partem."

THE DANGERS OF THE DRY SHAMPOO.

To the Editor of THE LANCET.

SIR,-My absence in America has prevented me from following in detail the proceedings arising out of the accident in July last in consequence of the use of carbon tetra-chloride as a "dry shampoo." I learn, however, on my return that by what has since taken place the public and the trade concerned have been duly warned of the dangerous character of this particular chlorinated compound, carbon tetrachloride. I learn further from the answer returned yesterday by the Home Secretary to a question by Sir William Collins that "the matter is receiving his serious attention and the question whether legislation ought to be undertaken will be fully considered."

I should like at this stage to point out a further consideration that in my opinion is of sufficient gravity to call for prompt decision as to the prohibition or not of the use of carbon tetrachloride and similar poisons for toilet purposes. Carbon tetrachloride, chloroform, ethylene chloride, ethylidene chloride, &c., are all more or less anæsthetic and stimulant, just as in lesser degree ether and alcohol are anæsthetic and stimulant. In my experience the physiological equivalence between chloroform and alcohol is approximately 100 to 1, and a few drops of chloroform or of carbon tetrachloride rubbed in the palm of the hand and inhaled as a "refresher" or a "sedative," are quite as effective, pleasant, and insidious as a glass of brandy. More or less carbon tetrachloride is necessarily inhaled in the course of a "dry shampoo," and there are in existence numerous other chlorinated compounds of similar properties. Chloroform is scheduled as a poison. Carbon tetrachloride, which is more poisonous than chloroform, and allied substances that are more or less poisonous, are not so scheduled.

Ought the use of these substances to be left at the discretion of the more or less enterprising hairdresser? Or ought not the public to be protected by the scheduling as poisons of substances that are more dangerous to life than chloroform and more insidious than alcohol? According to the evidence given by one of the witnesses at the inquest held last July the number of persons taking the dry shampoo with carbon tetrachloride averaged between 90 and 100 per stantive medical charge of the 73rd Carnatic Infantry, vice day at one establishment alone (or between 20,000 and

30,000 for the year, with the total consumption of 14 tons I am, Sir, yours faithfully,
A. D. WALLER. of the liquid).

Physiological Laboratory, University of London, Oct. 21st, 1909.

EDRIDGE-GREEN'S THEORY OF VISION AND COLOUR VISION.

To the Editor of THE LANCET.

SIR,-The question of the meaning of the structure of the retina is the latest one in physiological optics—i.e., from the subjectival standpoint held by E. Hering, Mach, and myself. As Edridge-Green has found for the distribution of the visual purple, so I, Hering, Hess, Garten, and others, have found only gradual quantitative differences in the sight between the foveal and extrafoveal area. The phenomenon of Purkinje, the alteration of optical white equations by the state of light- and dark-adaptation, the colourless interval for spectral lights of increasing intensity, the different phases of the after-image,—all these subjective reactions exist, not only in the extrafoveal, but also (only gradually diminished) in the foveal region. The analogy between this behaviour and Edridge-Green's objective statement about the visual purple

As principia, I believe that it is absolutely necessary for the classification of colours to start with sensation analyses, from the statement of the simple effects by some definite but individually different lights, homogeneous or mixed. It is also necessary to note the changes produced in each case by varying states of light- and dark-adaptation. We must ascertain the position of pure green, pure yellow, pure blue in the spectrum, and of pure red in mixed light, and of the corresponding neutral points in the colour-blind. It is totally wrong to conclude from the constitution of physical stimuli (composition, wave-length) that the physiological effect or the psychological sensation are similarly constituted. Therefore all colour theories based on light mixture (colour mixture is a very bad expression), as the theory of Young-Maxwell-Helmholtz, A. Fick, J. v. Kries, are fallacious.

Hering holds that for the regular cases of colour blindness there is a defect of red-green or yellow-blue or red-yellow-green-blue perception. The antagonistic correlation between red and green and yellow and blue is founded in the nervous apparatus; the regular cases of colour blindness are therefore nervous anomalies. On the other side, I believe that alone or combined with a nervous anomaly there are many cases in which photo-chemical anomalies in the retina exist. I believe that the visual purple could be one of the photo-chemical stimulus-transformers for the nervous apparatus, especially the stimulus-transformer for the white sensation in the dark adapted eye. There may be a large number of such photo-chemical substances, at least six (for red, yellow, green, blue, and two for white sensation), the absorption spectra of which coincide partially, for p.e. the point of pure green varies according to the state of adapta-tion of the eye. As a pupil of Hering I may say that Hering has always objected to the association of his theory with the photo-chemical processes of the retina as it is only concerned with the central processes.

I am, Sir, yours faithfully,

A. VON TSCHERMAK,

Oct. 25th, 1909.

Professor of Physiology in the University of Vienna.

THE TREATMENT OF ADDER BITES.

To the Editor of THE LANCET.

SIR,-The recent correspondence on adder bites has prompted me to report a case which came under my care last year.

A boy, aged 11 years, was brought to me by his mother on July 15th, 1908, at 1.10 P.M., the history being that he had been bitten by a grass snake which he had caught the previous day, and which he had handled freely until 12.55 P.M. on the 15th, when it had bitten him. When I examined him, only one-quarter of an hour after he had been bitten, I found a small pin-prick wound on the dorsum of the right index finger from which a little serum was exuding. The skin around the wound was discoloured, and the whole finger and dorsum of the hand were very cedematous. There menon is found with small portions of the retina, and

was slight lymphangitis of the forearm, and the axillary glands formed a lump of the size of a pigeon's egg. The boy was evidently in great pain. He was pale; his pulse was 60 and of very low tension, and his temperature 98 2° F. He had vomited twice on the way to my house. I asked the mother to fetch the snake, which turned out to be a female viper, and in the meantime put on a tourniquet, and I made a deep incision an inch long through the site of the bite. The tourniquet was then slightly loosened and the patient sucked the wound for half an hour. As the boy had fainted twice and again vomited I gave him 1-100th grain strychnine hypodermically, dressed the wound with permanganate of potash crystals and wet boracic lint, and having removed the tourniquet I ordered that he should be taken home and put to bed. He was there wrapped in blankets and kept warm with hot-water bottles, brandy being administered in drachm doses every half hour until 5.30 P.M., when I visited him. He was then in much pain, the whole hand and arm greatly swollen, and the axillary glands so much enlarged that the arm could not be adducted to the side. The glands in the anterior triangle were also enlarged and tender. The pulse was 80 and very soft; his temperature was 99°. I stopped the brandy and gave another 1-100th grain strychnine, together with 1-12th grain morphia. At 7 P.M. the swelling had slightly decreased, but there was still much pain. His pulse was 48, low tension, and his temperature 100°. 20 cubic centimetres of Burroughs and Wellcome's polyvalent antivenom serum were injected into the flank.

At midnight the condition was as before, and as the patient complained greatly of pain in the arm and also at the seat of inoculation I gave him 10 grains of Dover's powder. On the following morning the boy was slightly more comfortable, the arm was less swollen but much discoloured, the glands had not decreased in size, and the whole of the right side of the thorax resembled a large black bruise. The pulse was 72, normal tension, and the temperature was 98.4°; the wound looked dirty and was discharging much clear serous fluid. I therefore ordered him to use a hand-bath thrice daily, consisting of one drachm of tincture of iodine to a pint of hot water. From this moment the swelling and glandular enlargement quickly subsided and the wound became healthy; the discolouration on the chest-wall persisted, however, for several days. It is difficult to say from a single case whether any benefit follows the use of antivenom serum, but I am inclined to agree with Dr. Sapwell that it certainly does no harm.

The points of interest in the case were: (1) the rapidity of the glandular swelling; (2) the collapse as evidenced by the low tension of the pulse, together with vomiting and fainting; (3) the extreme discolouration of the chest wall; and last, but not least, the adder's tractability during the first 24 hours of its captivity. This may, I think, be accounted for by the fact that she "struck" several times at the boy's boots while he was capturing her, and that she had thus more or less exhausted her stock of venom.

I am, Sir, yours faithfully,
MAURICE AMSLER, M.B., B.S. Lond. Eton, Oct. 23rd, 1909.

MALARIA TREATED WITH INJECTIONS OF QUININE.

To the Editor of THE LANCET.

-In THE LANCET of Sept. 11th Dr. G. W. Young quotes three cases of malaria treated with injections of quinine, apparently being under the impression that this is a new form of treatment. I would point out that not only is this method fully described in Sir Patrick Manson's "Tropical Diseases," but also that several thousand injections are given during the year in India, as it is a favourite method of treating malignant cases, especially in the army. —I am, Sir, yours faithfully, A. H. SAFFORD, Captain, R.A.M.C.

Fyzabad, India, Sept. 26th, 1909.

THE BENHAM TOP.

To the Editor of THE LANCET.

SIR,—In reply to Mr. C. E. Benham's letter in THE LANCET of Oct. 23rd, I may say that the fact which I have discovered is that the Purkinje phenomena.

this should be so if the explanation of the Purkinje phenomenon which I have given be the correct one. Every acute observer knows that as the day progresses and twilight approaches reds become darker and darker, and greens, blues, and violets become brighter. This is the Purkinje phenomenon. The answer to the question is that the increased sensitiveness of a portion of the retina to the green rays cannot be evident until it is stimulated by light. The three black lines do not stimulate it. The portion of the retina on which the image of the black disc falls becomes because of the altered photo-chemical action more sensitive to the green. When the top revolves the image of the first part of the white half of the disc is formed on this portion of retina and stimulates it, with the exception of the first three black lines. These black lines therefore appear red through This effect is only momentary. As the top revolves the retina becomes more and more sensitive to the red end of the spectrum, and so when the light is suddenly cut off by the three last black lines the portion adjacent to them becomes blue from contrast, the exact colour depending on the light adaptation produced.

I am, Sir, yours faithfully, Hendon, Oct. 23rd, 1909.

F. W. EDRIDGE-GREEN.

CHROMIDROSIS.

To the Editor of THE LANCET.

SIR, -On p. 1221 of the last issue of THE LANCET appears a reprint of an article published in your columns on Oct. 22nd, 1831, in which an account is given of a case of "The Morbid Transpiration of Blue Colouring Matter through the Skin.' The case is a very good example of a very rare cutaneous affection, now known as "chromidrosis." The first case on record seems to have been one described by Yonge of Plymouth in the year 1709, and from time to time other similar cases have been recorded. It is probable that two different conditions have been confounded under the same name; in one of these the coloured excretion is undoubtedly sweat, for it has been seen to be excreted directly under observation. To this class those cases belong in which the colouration is rapidly formed, but there is another group in which a powdery greasy deposit forms on the skin. The cases in this latter class are probably examples of a coloured sebaceous secretion, for the pigmentary matter cannot be easily removed by means of water, but it is easily got rid of by ether or spirit, and it is readily proved to be composed largely of fatty material. In these cases the excretion is more gradual.

As to its etiology we know little, though here it may be mentioned that some cases of pigmentation of the skin are certainly factitious, as in the well-known epidemic at Brest. where the pigment appeared on the superficial surface of a layer of varnish with which the face had been painted. Of the genuine cases of chromidrosis it is worthy of note that the large majority are women; in one series 41 cases out of In most of the cases the patients have been young unmarried women, though in one instance the patient was 57. There seems little doubt that a neurotic temperament is a great predisposing cause, and various neurotic manifestations have been described in many of the instances. The chief concurrent symptom appears to be chronic and obstinate constipation, and it has been recorded that in some cases the amount of colouration present definitely varied with the degree and duration of the constipation. Sometimes it varies at different times of the day, and there seems some reason to think that some relation exists between it and menstruation, for it has been seen to be more wellmarked just before a catamenial period, diminishing in severity after it.

As to the exact pathology of the condition, there is not much to be said, but as in some cases at least the pigment has given the chemical reaction of indigo. it is not improbable that the condition is sometimes caused by the absorption of indican from the alimentary canal. Stott has described two cases in one family who suffered from pink perspiration sufficient to stain the clothes; in these cases he isolated a yeast, but it is probable that these cases belong to an entirely separate class. The case reported in THE LANCET in 1831 was in a girl of 16 years, and the pigmentation was of a beautiful blue colour. Curiously the account does not mention whether the patient suffered from constipation or not.

The treatment to be followed in these cases is practically limited to relieving any constipation that is present and correcting any menstrual irregularity. If there is any foundation for the idea that the colouration is due to the absorption of decomposition products from the alimentary canal, it is clear that treatment directed to ameliorating the bacterial condition of the bowel would be likely to be followed by an improvement in the condition of the skin. ondition of the sam.

I am, Sir, yours faithfully,

F.R.C.S.

Oct. 25th, 1909.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The University.

FOLLOWING the example of older universities honorary degrees have been conferred upon a number of gentlemen and one lady eminent in science, literature, statesmanship, medicine, and other walks of life. The ceremony was to have taken place when the new buildings were opened by the King last July, but it was decided that the two functions should be separated. The ceremony on Oct. 20th was of sufficient importance to stand on its own basis. The degrees were conferred by the Vice-Chancellor, Alderman Beale, in the absence of the Chancellor, Mr. Chamberlain. The customary oration was made by the Principal. Sir Oliver Lodge, in making the various presentations. The six honoured members of our profession were: Sir Richard Douglas Powell, Bart., President of the Royal College of Physicians of London; Mr. H. T. Butlin, President of the Royal College of Surgeons of England; Dr. J. S. Haldane, Reader in Physiology to the University of Oxford; Professor B. C. A. Windle, President of University College. Cork; Mr. C. S. Tomes, the distinguished dental surgeon; and Dr. Arthur Shadwell, the well-known writer on economics. The other honorary graduates were: The Chancellor (in absentia), Mr. W. N. Atkinson (H.M. Inspector of Mines for South Wales), the Right Hon. A. J. Balfour, the Bishop of Birmingham, Professor Bosanquet, Mr. Andrew Carnegie, Sir William Crookes, Mr. Maurice Fitzmaurice, C.M.G., Sir Archibald Geikie, the Right Hon. R. B. Haldane, Dr. J. Rendel Harris, Sir Charles Holcroft, Bart., Mr. G. J. Johnson, Sir Alexander Kennedy, Professor Sir Joseph Larmor, the Right Hon. Walter Long, Professor Gilbert Murray, Sir William Ramsay, Lord Rayleigh, Professor Rutherford, Mrs. Sidgwick, Lord Strathcona and Mount Royal, Professor Silvanus Thompson, Professor Tilden, Sir J. J. Thomson, Dr. T. H. Warren (President of Magdalen College, Oxford), and Viscount Wolverhampton.

City And Society.

In the annual report of this society which has just been issued the question of cooperation with the hospitals has been considered, especially with regard to the better means for distributing hospital tickets and the method of dealing with out-patients. In conjunction with representatives from the chief hospitals the method of advancing the following principles has been discussed-viz., (1) the elimination of applicants well able to pay for medical assistance; (2) discrimination in the number of those whose ailments would be more suitably treated by a provident dispensary, the Poor-law, or some other agency. It was decided, as a practical start, that, when possible, this society should appoint an almoner to attend at one of the hospitals and take charge of such cases as may be referred by the medical staff as being cases which could be attended to efficiently at home or by some other institution.

Oct. 26th.

WALES.

(FROM OUR OWN CORRESPONDENT.)

Additions to the Cardiff Infirmary.

WHEN the Cardiff Infirmary was founded in the year 1837 the population of the town was a little over 10,000. In the early days of the institution about 80 in patients and 1000 out-patients were dealt with. By 1880 these numbers had increased to 500 and 7000 respectively and the population of the town was considerably over 80,000. It was therefore decided to erect new buildings, and in 1884 the present

buildings were opened with accommodation for 108 patients. The rapid increase in the size of Cardiff, where in 20 years the population was doubled, together with the large increase in the population of the surrounding colliery districts, has necessitated further enlargements of the institution in which there is at the present time accommodation for 194 patients. When it is remembered that the infirmary patients. serves not only the town of Cardiff but a population greater in the aggregate than Cardiff itself dwelling in the Rhondda, Aberdare, and Merthyr valleys it is not surprising to find that the number of patients seeking admission far outnumbers the accommodation available. It became, therefore, advisable some two years ago to erect an additional wing to accommodate 78 beds, and the estimated cost of £30,000 was contributed within nine months of the appeal for it having been made. The foundation-stone of the new wing was laid on Oct. 20th by Mrs. John Nixon, who has contributed 10,000 guineas for the endowment of one ten-bed ward. It is gratifying to find that not only has the entire cost of the new building been provided, but a sufficient sum has already been contributed to maintain nearly one half of the additional 78 beds, and before the completion of the building it is confidently anticipated that many more beds will be endowed.

Housing in Monmouthshire.

The sanitary condition of the colliery districts of Monmouthshire has received a great deal of attention from the medical inspectors of the Local Government Board during recent years, but in spite of the recommendations which from time to time have been made by the Board to the various district councils concerned very little improvement appears to take place in the housing conditions. A report has recently been made by Dr. D. Rocyn-Jones, the county medical officer of health, to the sanitary committee of the county council upon the conditions which prevail in Abersychan, a district with about 20,000 inhabitants adjoining Pontypool. The story which has been related of other parts of the county is repeated with regard to Abersychan: houses are built back to back, or, worse still, back to earth, without damp courses and without proper rainwater gutters, so that dampness of the dwelling is doubly ensured; cellar dwellings and basement houses which it is impossible to ventilate properly are still in occupation, and in some instances overcrowded. The district council has been sufficiently progressive to appoint a lady health visitor, but she must find the difficulties of her work very considerably increased in the presence of the large number of structural defects which are enumerated in Dr. Rosyn-Jones's report.

Barry Accident Hespital.

The urban district council of Barry has provided for the inhabitants of that town not only the ordinary municipal institutions such as public slaughter-houses, a refuse de-structor, and isolation hospitals, but for some years has supported out of the rates a small accident hospital. Until recently the premises used for this purpose were an ordinary dwelling house slightly altered to suit the particular purpose to which it was put, but there has now been erected a special building suitably arranged and well equipped so that the usefulness of the institution will be very much increased. In the old building the surgical staff included a few of the medical practitioners in the town who gave their services without any remuneration, but after much discussion on the subject the district council has now decided that the whole of the medical men in the town shall be on the staff of the new hospital, four being on the rota for four months. It is proposed that each shall be paid an honorarium of £10. Oct. 26th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Late Professor D. J. Cunningham's Library.

IT was intimated at the last meeting of the Edinburgh University Court that the late Professor Cunningham had by his trust deposition and settlement directed his trustees to make over to the University of Edinburgh all his medical and scientific books to form the nucleus of a library for the anatomical department.

The Liston Victoria Jubilee Prize.

The Royal College of Surgeons of Edinburgh have awarded

Liverpool. The prize was awarded by the council to the Fellow or Licentiate of the College "for the greatest benefit done to practical surgery since 1905."

The Teaching of Surgery in Edinburgh.

The University Court has appointed Professor H. Alexis Thomson, professor of surgery in the University, a lecturer and examiner in clinical surgery. This is the continuance of the arrangement made during the later years of Professor J. Chiene's tenure of the chair of systematic surgery. By the older arrangement the holder of that chair, although he had wards in the Royal Infirmary, was not allowed to teach clinical surgery. This curious rule was the survival of an old order of things which should have been broken through long before it was. The chains which bind the Scottish universities are seen in the necessity to formally appoint the professor of systematic surgery to a lectureship of clinical surgery to make his wards available for clinical instruction.

The Royal (Dick) Veterinary College, Edinburgh.

For some time past a scheme has been on foot for the transference of the Royal (Dick) Veterinary College, Edinburgh, from the premises it has occupied in Clyde-street for many years. These premises have long been inadequate for the modern developments in the teaching of veterinary medicine, but the difficulty in finding a suitable site for the school and the want of funds have been a heavy drag upon those who were interested in the efficiency and development of the College. It has just been announced, however, that the Scottish Education Department had decided to recognise the College as a central institution under the Education Act of 1908 and to provide £25,000 towards the cost of new buildings, a similar amount requiring to be raised locally. It is intimated that a site which has been spoken of for some time as suitable, and which is situated at the north-east corner of the Meadows, has been secured and plans of the proposed buildings have been prepared. The site is conveniently near the University and the medical buildings. It is hoped that the requisite money will soon be found for a scheme which is so thoroughly deserving of generous support.

A Memorial to Professor Liston.

A memorial window to Professor Robert Liston, who died in 1847, has been unveiled in the parish church of Ecclesmachan, his birthplace, by Professor Alexis Thomson. The window is the gift of members of the great Scottish surgeon's family and of members of his profession.

The Fate of Sidlar Sanatorium.

A meeting of the directors of the Sidlaw Sanatorium was held on Oct. 21st, when the position brought about by the intimation that most, if not all, of the directors contemplated resigning was under review. There was a full attendance, and it was resolved to hold a meeting of the supporters of the institution next month, when its whole affairs will be discussed and future action resolved upon. It is understood that for several years the institu-tion has been carried on at a considerable loss, the deficiency until now being met by one of the directors, who has specially interested himself in the institution. financial position is said to have suffered through the late agitation for the municipalisation of the sanatorium, and the situation with regard to its maintenance and continuance under its present constitution has reached an acute stage.

Handsome Gift to Montrose Infirmary.

A special meeting of the managers of Montrose Asylum and infirmary board was held in the town buildings on Oct. 21st. The treasurer submitted a letter from Mrs. Wyllie, 3, King's gardens, Hove, Brighton, intimating a donation to the funds of the infirmary of £5000 in memory of her husband, who was a native of Montrose. convener of the infirmary house committee moved that they record their heartiest thanks for the gift. It was the largest donation the infirmary had ever received, and the quiet and unostentatious way in which it had been made added to its value. A number of years ago they had a bequest from Dr. David Wyllie, and now they had the widow of a brother remembering them in that way.

The New Principal of the University of Aberdeen.

The King has been pleased, on the recommendation of the Secretary for Scotland, to approve the appointment of the Rev. George Adam Smith, M.A., D.D., LL.D., Professor of Old Testament Language, Literature, and Theology at the United the Liston Victoria Jubilee prize to Mr. Robert Jones of | Free Church College, Glasgow, to be Principal of the University of Aberdeen, to fill the vacancy occasioned by the death of the Very Rev. John Marshall Lang, D.D. The new Principal is a son of Dr. George Smith, C.I.E., at one time editor of the Friend of India. He was educated at the Royal High School, Edinburgh, and at the University of Edinburgh, where he graduated M.A. in 1875. In 1892 he was appointed to the professorial chair which he now vacates. In April, 1893, the University of Edinburgh conferred on him the honorary degree of D.D., and in 1895 he received from the Senatus of the University of Aberdeen the honorary degree of L.L.D. Principal Smith has made many valuable contributions to ecclesiastical literature, and the appointment will be a very popular one in Aberdeen. Principal Smith is married to a daughter of Sir George Buchanan, F.R.S., late medical officer to the Local Government Board.

Dingwall Isolation Hospital.

The new Isolation Hospital, erected at Dingwall in connexion with the Ross Memorial Hospital, has been formally opened by Lady Munro of Foulis. The usefulness of this institution has grown steadily since the erection of the first group of buildings in 1873, the extension now opened being rendered necessary by the number of fever cases sent in by the local authorities. Dr. W. Bruce, medical superintendent, introduced Lady Munro, and stated that since its opening, 3000 cases had been treated in the institution, including 140 major surgical cases, and 626 fever cases. The hospital depends entirely on public recognition for its support, but excepting £600 due on account of the balance of the cost of the new isolation building it is free from debt, with an endowment fund of £3000.

Oct. 26th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

University College, Dublin.

The Dublin Commissioners who were appointed by the Irish Universities Act, 1908, held a meeting on Oct. 23rd in the Senate Room of the Royal University Buildings, Dublin, to consider the appointments to the vacant offices in University College, Dublin, and the representatives on the governing body of the College. The names of certain Fellows of the Royal University were selected and recommended to the Joint Committee for appointment, in accordance with the Act, to the various professorships and lectureships in the new University. The list of names of those who have just been recommended to or appointed to professorships in the Medical Faculty is as follows, and in many instances coincides with anticipation: Dr. George Sigerson, zoology; Dr. E. P. McLoughlin, anatomy; Mr. J. S. McArdle, surgery; Dr. B. J. Collingwood, physiology and histology; Dr. E. J. McWeeney, pathology and bacteriology; Dr. J. N. Meenan, hygiene and medical jurisprudence; Dr. Martin Dempsey, materia medica and therapeutics; Sir Christopher Nixon, medicine; Dr. Alfred J. Smith, midwifery and gynæcology; Mr. J. J. Dowling, physics; Mr. J. Bayley Butler, botany; Dr. L. Werner, ophthalmology; Mr. E. L. Sheridan, dental surgery; and Mr. J. L. Potter, dental mechanics. Dr. Collingwood, who has been lecturer on physiology at St. Mary's Hospital, London, is the only imported professor.

The Women's National Health Association of Ireland.

Nearly 100 members of this flourishing association from all parts of the country attended the recent autumn meeting in Dublin at which the Countess of Aberdeen took the presidential chair. Reports of the various sections of the association's work showed, among other details, that babies' clubs, known elsewhere as schools for mothers, have been established at Dublin, Belfast, Cork, and Londonderry, and that in connexion with the clubs classes in home nursing and sick aid have been largely attended by the elder girls. A pasteurised milk depot has been established in Dublin showing most excellent results in saving infant life. Schemes for providing and distributing pure milk from healthy cows have been carried out in various parts of the country, including Belfast, Armagh, Carlow, Killarney, and Cork. Five regular health lecturers have given courses of lectures in all parts of the country, in addition to those provided by local branches and lectures provided by the kindness of

the medical profession. 32 extra district nurses have been appointed in Ireland during the last 18 months through the means of the Women's National Health Association. The Samaritan and Nourishment Funds have done useful work, and the first of the disused Coastguard stations taken over by the association was opened as a health home for preventive cases on August 4th, and since then has received 34 inmates who have all much improved in health. They come from families where they have been exposed to infection from tuberculosis, but are certified free from the disease themselves before admission. In the early part of the year the Tuberculosis Exhibition visited several districts in Ireland, closing with visits to three different quarters in Dublin, where it was visited by enormous crowds of people and where the lectures were so crowded that hundreds had to be turned away every evening. The Tuberculosis Exhibition caravan, designed to meet the need of outlying places too poor to undertake the expenses of a visit from the exhibition, has proved a very successful scheme. It has travelled all round Donegal and is now working in the west of Ireland. A refreshment van selling pasteurised milk and other nourishing and wholesome foods and drinks has been established by the association in the Phœnix Park. Dublin, during the last few weeks especially for the benefit of the football players and has met with a very hearty welcome. About 3,000,000 leaflets, pamphlets, pictures, posters, and literature of all kinds have been published and distributed during the last two years. A series of three volumes entitled "Ireland's Crusade against Tuberculosis," and containing a collection of valuable lectures by leading medical men and other experts on subjects connected with the prevention and treatment of tuberculosis, has been published by Messrs. Maunsel at 1s. each, and copies of the same have been sent free to a large number of persons who are in a position which enables them to promote the anti-tuberculosis campaign. A generous donation for the publication and distribution of these educational volumes and other similar literature has been given by the Vice-President and Council of the Department of Agriculture and Technical Instruction. Siainte, a monthly magazine dealing with health subjects in a popular way, is also published by the association., and has helped to disseminate valuable hygienic information.

The Late Professor Cunningham.

A meeting of friends and former pupils of the late Professor D. J. Cunningham will be held by permission of the Provost in the Medical School, Trinity College, on Nov. 3rd, at 4.30 o'clock, to take steps to establish in the school a memorial of his connexion with Dublin University.

The Health of Belfast.

At a meeting of the public health committee held on Oct. 21st it was reported that the death-rate from all causes was 14.0 per 1000. There is an increase in the notifications of scarlet fever. It was announced that the Belfast corporation is about to promote an improvement and reconstruction scheme under the Housing of the Working Classes (Ireland) Acts, 1890-1908. The main object of the scheme will be to clear certain unhealthy areas and to provide suitable sites for building houses for the working classes. These houses need not necessarily be built by the corporation; in fact, it is probable that the corporation will let the land for building purposes. In these circumstances the Belfast corporation asked the Local Government Board whether it would admit a claim on the part of the corporation to a share in the Irish Housing Fund referred to in Sections 4 and 5 of the Housing of the Working Classes (Ireland) Act of 1908. In reply, the Local Government Board said that it had not had an opportunity of examining in detail the proposals of the corporation, and that, further, it was not in a position to determine whether the scheme contemplated was of such a nature as would entitle the corporation to a contribution from the Irish Housing Fund in accordance with the sections of the Act quoted by the corporation.

Floods in Belfast.

for providing and distributing pure milk from healthy cows have been carried out in various parts of the country, including Belfast, Armagh, Carlow, Killarney, and Cork. Five regular health lecturers have given courses of lectures in all parts of the country, in addition to those provided by local branches and lectures provided by the kindness of

Hall, where a meeting was being held on Saturday night, the people had to leave within half an hour of the opening by a backway, owing to a great part of the buildings being surrounded by water. At the Hippodrome Music Hall the orchestra was swamped and the bandsmen's seats had to be placed on boxes, while the stage door was unapproachable.

A Liberal Workhouse Officer.

At the weekly meeting of the Lisnaskea (county Fermanagh) board of guardians held on Oct. 23rd, the master said the members would be surprised to hear that a female patient drank ten glasses of champagne, three glasses of a medicated wine, and two glasses of brandy in one day. She also took two eggs and three pints of milk on the same day. She died shortly afterwards. The guardians agreed that the medical officer had full power to order whatever he liked for a patient in hospital and the chairman said no pains were spared to save this woman's life. But the amount of stimulants seems very large. Oct. 26th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Sanitary Regulations regarding Oysters.

With a view to preventing the sale of unwholesome oysters the Under-Secretary of State for the Navy has ordered a commission appointed under the presidency of the Inspector-General of Fisheries to draw up sanitary regulations regarding oyster culture. The regulations will define the condition in which the beds, pools, and reservoirs used for this purpose must be kept. Owners of oyster beds not complying with the prescribed conditions will only have permission to deal in half-grown oysters; in other words, they will not be allowed to supply consumers. In places where oysters are brought to maturity the licence granted by the Minister of Marine will be withdrawn if the regulations are not observed.

Albuminurio Bronchitis and Pulmonary Catarrh.

At a meeting of the Société Médicale des Hôpitaux held on Oct. 8th M. Bezançon and M. de Jong called attention to the confusion which existed between the conditions known as pulmonary catarrh, albuminuric bronchitis, and even pulmonary cedema. In their opinion, the expectoration in these diseases was of three types—namely, (1) the true sero-albuminous expectoration of pulmonary œdema; (2) hydro-mucous expectoration consisting of water and mucine; and (3) mixed expectoration with pre-dominance of the hydro-mucous type, occasionally containing albumin and leading to confusion with pulmonary cedema. In reality the question was one of bronchial hypersecretion in relation to chronic bronchitis. This bronchial hypersecretion occurring in patients suffering from emphysema associated with cardio-renal disease had perhaps some connexion with urinary elimination. In a patient whose case was followed for a year M. Bezançon and M. de Jong were able to observe a complete parallelism between the quantity of hydro-mucous expectoration and the quantity Under a chlorine-free dietary the expectoration diminished but it increased again when a diet containing chlorides was tried, and at the same time there was free elimination of a chloride in the sputum. Under the influence of digitalis the urine and the sputum increased. When theobromine was given there was an increase of the expectoration only, this being accompanied by cough and dyspnosa, which caused so much pain by irritation of the bronchial glands that the drug had to be stopped.

Etiology and Treatment of Vertical Displacement of the Stomach.

M. Gayet has had an opportunity of observing very marked vertical displacement occurring in a man, aged 50 years, who had for a long time suffered from gastric pain, and this case formed the subject of a paper read by M. Gayet at the twenty-second French Congress of Surgery held at Paris from Oct. 4th to 9th. The pylorus descended to the pubes on the left of the abdomen. The patient, who was the subject of tetany and delusions of inanition, vomited continually and was very emaciated. A complicated operation

was performed, consisting in transmesocolic gastro-enterostomy, completed by jejuno-jejunostomy. After gastroplication, in which the stomach was folded and kept in position by a series (surjet) of silk stitches, its anterior surface was sutured to the abdominal wall in such a way as to restore the organ to its normal position (gastropexy). patient made an uneventful recovery; when seen eight months afterwards it was found that he had become fat, had gained 17 kilogrammes in weight, and digested his food quite well. In the course of the operation it was noticed that the thorax was narrowed in a wasp-like shape, that the liver was small and in the middle line, and that the normal hepatic space was occupied by a portion of the transverse colon. From all this it might be concluded that the wearing of corsets, so often said to be the cause of downward displacement of the viscera, was not always to blame, and that congenital defects had much to do with the pathogenesis of the condition. The treatment was unavoidably complicated, with a special necessity for attention to the sutures in the upper part of the abdomen.

International Congress for the Repression of Fraud.

The Second International Congress for the Repression of Fraud was held in Paris from Oct. 17th to 24th. The first Congress, an outcome of the Universal Society of the White Cross, was organised in Geneva in 1907 and was held in that city in September, 1908. Its object was to promote international action for the prevention of fraud in connexion with food and drugs, and in the realisation of this ambitious programme to bring together manufacturers, merchants, producers, and men of science. Its work commenced with an attempt to define products which were commercially pure. This first Congress received from all countries a welcome so hearty that 21 Governments replied to the invitation of the White Cross, and about 600 members met at Geneva. During this Congress there was only time to define commercial purity as regards alimentary substances, and the examination of the processes requisite for the preparation of food was adjourned to the following Congress which has now closed. The general opening meeting took place in the large amphitheâtre des travaux pratiques of the Faculty of Medicine under the presidency of the Minister of Agriculture, who in a speech which was much applauded expressed an earnest hope that the Paris Congress would worthily continue the work which had been begun in Switzerland. He dwelt on the necessity for conscientious producers and merchants coming to an understanding with persons possessed of technical knowledge for the purpose of defining commercial purity as regards alimentary substances and of drawing up a list of the legitimate processes necessary for their further preparation. In the next place commercial requirements had to be adjusted to the claims of public health. In conclusion, the Minister reminded his audience that it was necessary to appeal to legislators who would complete the work of the Congress by making its conclusions the basis of international arrangements. M. Vuille, President of the Universal Society of the White Cross, then thanked the members of the French Government and the Presidents of the Municipal Council of Paris, and the General Council of the Seine, who had taken the Congress under their patronage. In the next place he gave an account of the work undertaken by the White Cross from the closing of the last Congress up to the present time. M. Bordas, President of the Second Congress, explained the details of the official programmei.e., the examination of the processes necessary in the preparation of alimentary substances in a state of commercial purity and the definition of the primary materials of pharmaceutical and chemical products. The Paris Congress would therefore do what it had been necessary to leave undone at Geneva, and would undertake the drawing up of a list of legitimate operations for the preparation of food. For instance, as a definition of pure wine, it was not enough to say that it was the product of fermented grape juice, but the various processes employed by the producers before delivering the fermented grape juice to the consumers must be enumerated. The French Section of the White Cross of Geneva asked all the mercantile and manufacturing associations to supply it with definitions in respect of each of the alimentary substances prepared or manufactured in France, and after a very careful examination of these documents a series of resolutions would be drafted and submitted for the approval of the Congress.

Oct. 26th

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Infantile Paralysis.

INFANTILE paralysis has for some time been assuming an epidemic character in certain districts of the Rhenish province and Westphalia, as mentioned in this column on Oct. 2nd, and the disease has now increased so much that the Government has asked Professor Krause, the director of the Medical Clinic of the University of Bonn, to inquire into the matter. Epidemics of the disease have already been observed in Norway, Sweden, New York, and Vienna, while in Germany sporadic cases, sometimes occurring in groups, have happened every year. In his report, which has been published in the Deutsche Medizinische Wochenschrift of Oct. 21st, Professor Krause deals especially with the present epidemic in Westphalia. He states that the first case occurred in the town of Hagen in the beginning of the month of June, from which date the number of patients increased till August, and since that time recent cases were also met with in September and October. Oct. 5th, in the very populous district of Arnsberg, including large manufacturing towns such as Bochum, Dortmund, and Hagen, 436 cases and 66 deaths were registered. The age of the youngest child attacked was 4½ weeks and that of the eldest was 15 years, but the majority of cases occurred in children of 2 years of age and of the female sex. Professor Krause recognised two stages of the disease. The first was that of general symptoms, in which pyrexia, perspiration, and troubles of the gastrointestinal canal were the principal features; diarrhœa was more frequent than constipation, and it was remarkable that at the same time diarrhoea usually attacked other members of the same time different stages at the same time the family. It is impossible in this stage to say whether paralysis will develop or not. The children, however, complained of pains in the vertebral column, the neck, and the limbs. On puncture of the spinal canal the cerebro-spinal fluid was discharged under high pressure (from 135 to 140 millimetres of mercury). It was limpid, alkaline, and showed an albuminous reaction. The second stage was that of paralysis; it began, as a rule, with high fever lasting for one or two days, together with acceleration of the pulse and respiration. The paralysis affected first the muscles of the neck, so that the head was drawn backwards or to one side; then the dorsal or abdominal muscles were implicated, so that both the erect and the sitting position became impossible; and finally one or both arms or legs, and sometimes also one side of the face, were paralysed; once an isolated paralysis of the abducens nerve was observed and paresis of the respiratory muscles was present in severe cases. The sensorium was, as a rule, not affected. The paresis might disappear within a relatively short time—from several days to three weeks, but a paralysis of one or both of the limbs usually persisted; in a number of cases, however, the paralysis completely disappeared. The paralysis was of a completely atonic kind; only once a spastic contraction of the right leg was observed; the tendon reflexes had disappeared, whilst the cutaneous, abdominal, and cremasteric reflexes were present. Sensibility was impaired in only one case in which complete anæsthesia was present for two weeks. Post-mortem examination was made in eight cases, the result being that a relatively slight leptomeningitis with circumscribed dull foci was observed. The most striking alteration was, however, present in the gastro-intestinal canal, which showed hyperæmia and swelling of the mucosa, together with enlargement of the mesenteric glands and of the spleen. With regard to the place of entrance of the virus into the system, Professor Krause was of opinion that it must be the gastro-intestinal canal. The nature of the virus is not yet known and nothing has been ascertained as to the manner in which infection is conveyed; it is probably carried by the food, although a great many suckling infants were among the patients. Fruit was alleged by some to be the cause of the disease, and others attributed it to insect pests, but without any apparent ground in either case. A remarkable incident was that together with the epidemic of paralysis an enormous

said to have occurred but to have subsequently disappeared; the post-mortem examination of this bird showed nothing abnormal. The disease may certainly be communicated from one person to another by healthy carriers of bacilli. In the acute febrile stage isolation of the patients is necessary and also disinfection of their dwellings, as in several instances the disease broke out in a family when they had moved to a house where cases of paralysis had happened. To remove the virus from the gastro-intestinal canal the administration of castor-oil or calomel was advisable and the diet must be regulated. Against the general infection inunction of Credé's ointment containing silver might be tried; sometimes the paresis disappeared after puncture of the spinal canal in the lumbar region. The bacteriological examinations made by Professor Krause, in conjunction with Dr. Meinicke, chief of the Hagen municipal laboratory, had no result. Micro-organisms of various kinds were found in the bowels and the urine, but proved to have nothing to do with the virus. The other organs and the fluids of the body were free from bacteria. Attempts were also made to communicate the disease to animals by the inoculation of pieces of organs or fluids obtained from the patients. Mice, guinea-pigs, chickens, and pigeons remained quite healthy, but rabbits were killed in several instances by the inoculation of brain, spleen, or blood; the death occurred sometimes with cerebral symptoms and after a relatively long period of euphoria.

Prosecution for Misdescription in a Medical Certificate.

A medical man in Berlin has recently brought himself into serious trouble while intending to do a kindness to a patient. He attended a girl who was employed in the State telephone service and became pregnant, but had an ordinary miscarriage. As she had therefore to be off duty for some time it became necessary for her to produce a medical certificate. She implored her medical attendant to conceal her state, as otherwise she would at once lose her appointment, and for this purpose to enter some other cause of illness on the blank form. This he accordingly did, stating that the patient suffered from influenza. By accident the truth became known to the authorities, and the medical man was prosecuted on the charge of having wilfully given a false medical certificate, an offence punishable by imprison-Before the court it was stated that the dement. fendant had been induced to commit this irregularity by his good nature only and not for any financial profit, but he was nevertheless found guilty and sentenced to the minimum punishment of one month's imprisonment. case was discussed in the daily press and it is expected that the Sovereign will exercise his prerogative of mercy. In some newspapers it was argued that the present law should be altered because it does not make any difference as to the motives of the defendant, punishing equally a medical man who acted from generous motives and one who made a trade of giving false certificates for money. Regret has also been expressed that the accused did not come before a jury who would certainly have found a verdict of not guilty, but came before three judges who, according to the strict terms of the law, found that he had committed an illegal action. It is hoped that the Berlin medical chamber will petition the Crown to pardon the culprit who is known as a respectable medical man of good standing.

Oct. 25th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Typhoid Fever Iraced to Milk-supply.

canal. The nature of the virus is not yet known and nothing has been ascertained as to the manner in which infection is conveyed; it is probably carried by the food, although a great many suckling infants were among the patients. Fruit was alleged by some to be the cause of the disease, and others attributed it to insect pests, but without any apparent ground in either case. A remarkable incident was that together with the epidemic of paralysis an enormous mortality was present among chickens, especially the younger ones. A man reported that two of his chickens had died with paralytic symptoms, in a third one the paralysis was

accidental infection of two large dairy farms as the probable cause of the sudden outbreak. Dr. Schiller adds that unless certain defective sanitary conditions now existing in the district be corrected, a repetition of this accident may be expected, in spite of the fact that the water-supply is of good quality. The official bacteriological analysis of this water made at brief intervals during the last six weeks or more points to nothing that would suggest the water in any way to be faulty. The investigation of the milk-supply showed that households which afterwards suffered from typhoid fever since August 15th had in most cases purchased their milk from the same dairyman. Two cases of typhoid fever are known to have developed at his home. As milk is one of the best vehicles for the conveyance of the infection of typhoid fever, it is reasonable to suspect that the disease in the district in question was due to the use of milk accidentally infected on the premises of the dealer in whose family a case existed. As to the general sanitary condition of the towns in Hungary, the Chief Sanitary Superintendent says that many of the houses have no connexion with the street sewers, their facilities for drainage and disposal of waste being over the surface and into the cesspools located in the back yards. There is also a conspicuous lack of sewage facilities in some parts of Budapest. A number of streets have no sewers under them, particularly in Buda, the ancient part of the capital, and in a very large number of houses located in many instances on streets having sewers the house-drains are not connected with the sewers. With the continuation of condi-tions of this kind it would be surprising if epidemics did not occur from time to time.

The Use of Gelatin as a Hæmostatic.

Dr. Pfeiffer has published his recent clinical experiences in the treatment of hæmorrhage by rectal injections of gelatin. The cases which he has observed were 23 in number, comprising 16 of hamoptysis in pulmonary tuberculosis, 4 of gastric ulcer, and 1 each of epistaxis, pulmonary infarct, and purpura hæmorrhagica. The method was as follows: A solution of 15 grammes of gelatin in 150 cubic centimetres of hot water was allowed to cool to the temperature of the body and then injected under slight pressure as high as possible into the colon. These injections were given from one to three times daily and were usually well retained, no evidences of gelatin being visible in the stools. Even after the bleeding has stopped it is well to continue the enemata once daily for several days. The results in many of the cases were quite remarkable. In some of them the bleeding came on again, when the treatment was stopped too soon, but on its being resumed, the bleeding ceased at once. In a few cases the results were negative and in some the effects were not well marked. This uncertainty was also found when the gelatin was injected subcutaneously. The rectal injections are not, however, attended by unpleasant complications; they are free from the dangers of infection and are quickly and readily applied. These advantages may be considered of sufficient importance to warrant the substitution of the rectal for the subcutaneous method.

Oct. 25th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Plague.

THE plague returns for the week ending Sept. 18th show 2353 deaths, compared with 2096 in the preceding week. The Bombay Presidency reported 693, Madras 185, Bengal 58, the United Provinces 353, the Punjab 68, Burma 42, the Central Provinces 596, Mysore State 169, Central India, 109, and Rajputana 60.

The Health of Bombay City.

As was to be expected, the return of rainy weather, driving the poorer people from the open air into their unwholesome houses to sleep, has checked the promising decline of plague in Bombay. The returns for the week ending Sept. 21st show a total of 12 deaths, as against 9 in the preceding week, and the daily figures show a slight upward tendency. Last year's record for the corresponding week was 26 deaths, and the quinquennial mean 34,

so there is still room for hope that we may achieve what has never happened yet since plague first appeared—a clean sheet in Bombay for a whole week. The deaths from cholera for the same week were 20, another figure which shows an upward trend, although there appear to be fewer imported cases than usual. The total mortality in the city shows a distinct improvement, having gone down to 578 for the week, as against 591 in the previous seven days. The improvement on the five-yearly mean of 640 is considerable, but last year's figure was only 561. The question of safe-guarding the milk supplies of the city is still far from being satisfactorily settled in Bombay. Several wise measures which the executive health officer has pressed upon the corporation are still unadopted, and Dr. J. A. Turner is now trying to solve the problem piecemeal by suggesting the establishment of municipal pure milk depôts, for the benefit of babies, as a beginning.

The Malaria Conference.1

In addition to the officers recently mentioned, the following will attend the Malaria Conference at Simla on Oct. 11th: Surgeon-General F. W. Trevor, Principal Medical Officer of His Majesty's Forces in India; Colonel C. P. Lukis, I.M.S., officiating Director-General, Indian Medical Service; Lieutenant-Colonel J. T. W. Leslie, I.M.S., Sanitary Commissioner with the Government of India; Lieutenant-Colonel D. Semple, R.A.M.C., Director of the Research Institute; Lieutenant-Colonel A. R. Aldridge, R.A.M.C.; Lieutenant-Colonel J. Thornhill, Indian Army, Inspecting Officer of Cantonments; Major S. P. James, I.M.S.; Captain S. R. Christophers, I.M.S.; Major C. Donovan, I.M.S., Professor of Philology, Medical College, Madras; Diwan Bahadur Narayane Murti Pantulu Guru and an administrative officer still to be nominated from Madras; Lieutenant-Colonel T. E. Dyson, I.M.S., Sanitary Commissioner; Mr. Lawrence, Collector of Sukkur; Mr. J. A. Wadia from Bombay; Mr. Maude, Commissioner, Patna; Major Leonard Rogers, I.M.S., and Rai Kissori Lall Goswami Bahadur from Bengal; Mr. Ferard, Commissioner, Allahabad; Major J. Chaytor White, I.M.S., Sanitary Commissioner; and the Hon. Pandit Sunder Lall from the United Provinces.

British Troops and Malaria.

Orders have been issued that British troops now in hill stations are not to move to the plains until Nov. 15th, and where malaria is reported in cantonments the movement is to be delayed until Nov. 30th. The extra time in the hills may be employed in local manœuvres, provided these do not interfere with subsequent divisional manœuvres. The troops should benefit materially by their longer stay in the more bracing climate of the hill stations.

Sept. 24th.

CHINA.

(FROM OUR OWN CORRESPONDENT.)

Journey through Shan-si.

I RETURNED last week from a journey of over 1000 miles by road, river, and rail in Shan-si, an important province in which, up to last year, the largest amount and the best quality of opium were produced. Shan-si opium was prized all over the Empire by smokers as well as for medicinal purposes. As the result of particular inquiries and observations, I am able to say that a determined campaign has been prosecuted by the officials and that the output has not only been very materially reduced but that the people are finding great difficulty in continuing their indulgence in the pipe. Itinerant merchants sell the drug, but under difficulties, and opium smoking is now become a vice that can only be followed out secretly and circumspectly instead of being, as before, a habit that was not regarded among the people as a vice. Some of the wealthier families have laid in a stock of opium that will last them for years, but the enhanced price is now beyond the means of the poorer classes, and there are no new smokers among the younger generation. In Shan-si until recently women smoked freely as well as men. One can still see in the sallow, anemic faces of many men in the towns traces of

¹ We published last week the outline of the recommendations arrived at by the Conference, which reached this country by telegram. (See THE LANCET, Oct. 23rd, p. 1231.)

their years of indulgence. The rough-and-ready cure of stoppage of supply was referred to feelingly by several natives to whom I spoke. Thus, as far as Shan-si is concerned, the predictions of those who had studied the question among the Chinese, and knew how deep was the narcotic hold the drug had taken of the people, appear to be falsified. But any relaxations on the part of the officials for some years to come will find the people ready to relapse, as they are non-smokers now only by force of circumstances. Anti-opium pills are in extensive use, and there is good reason to believe they are of the nature I have indicated in previous notes. The use the nature I have indicated in previous notes. of morphia in hypodermic syringes seems to be mainly confined to the coast ports, and it is almost unknown in the country towns and villages. Throughout the whole journey I did not remark a single case of alcoholic intoxication. In all this vast tract of country through which I travelled, with the exception of one town, Taiyuanfu, I did not meet any Europeans, missionary or otherwise, and there is here a wide field for foreign medical work. There were many demands for treatment, which I was rarely able to give. Rheumatism is not uncommon among the older people; there were many cases of dyspeosia, mainly due to intestinal parasites and the bolting of food; eczema and "itch" are common in the towns, and tuberculosis and trachoma are widespread. In every village there were many cases of this last disease, for which the native pharmacopœia has no antiseptic check. leaves in its trail blindness, entropion, and corneal opacities. In some of the larger towns, such as Kuei-hua-cheng, where there is a rich mercantile community in a population of over 80,000, a remunerative practice awaits the first foreign doctor, a knowledge of the dialect being, of course, a necessity. Foot-binding is de rigueur among Shan-si women and the feet are bound smaller than in other provinces. In most cases the binding is so tight that the women appear to be walking on amputated stumps. Harvesting was in progress and in every field could be seen the women hard at work reaping on their knees owing to the difficulty of supporting their body-weight for any length of time on their diminutive feet.

An International Medion-legal Case.

It is only a matter of a few years since the Chinese found out the powers of trade boycott, and it has in their hands become at times a weapon which has caused no little injury to the trade of the country against which it is enforced. Four years ago America was involved. During last year Japan suffered, and now England is in a fair way to become the chosen enemy-this time by the people of Kinkiang, who are banding themselves together to have nothing to do with British ships and commerce till they get "satisfaction," or, in other words, the heavy punishment of a consular constable and compensation for the so-called "murder" of a Chinese native. The circumstances were these. The constable was said to have administered a blow with his cane to a coolie who fell down and at once became very ill. No one actually saw the blow being given, but the man was close beside the constable (an Englishman) when he dropped on his knees with a groan. The constable went forward and on turning the man's face round found him ashy pale and had him at once removed to the British Consulate, where he was seen by Dr. Lambert, a Canadian, who pronounced his condition as very serious and gave him a stimulant and strychnine injection hypodermically. At the man's own request an attempt was made to remove him to his house but he died on the way. Dr. Lambert concluded that the man was suffering from internal hæmorrhage which might have resulted from other causes than a blow. He examined the body and found no signs of any blow. In his opinion death was due to internal hæmorrhage and to that only. Dr. Lambert said in his evidence that he had some conversation with the constable Mears which left a general impression that there had been a poke by Mears, but he could not make any positive assertion. As the judge in his summing up said: "It seems highly improbable that had Mears said he poked Yü (the dead man) Dr. Lambert would not have had much more than a general impression-such a statement could not but have made a definite and lasting impression on his mind. Dr. Lambert could not say that Mears had struck Yü and he could not say that death was due to a blow." The body was allowed to lie unburied on the road at the spot where death occurred for 11 days with only a slight covering of sand before a necropsy was undertaken by an American,

Dr. E. H. Hart, a medical missionary from a neighbouring port, who was called in by the Taotai (prefect) of Kinkiang as a result of an agitation amongst the Chinese. This necropsy was performed at 4 A.M. in the dark on the road by lamplight. In a temperature averaging 70° F. and a humid atmosphere it may be judged that the body was then in a state of general putrefaction. Dr. Hart stated in his evidence that the liver, spleen, and kidneys were normal in shape and size, but that he was not allowed to remove them, nor did he make sections into them and was unable for want of microscopical examination to say there had been no previous disease. On opening the abdomen there was an escape of gas and blood, and, in addition to the blood he found lying free in the abdominal cavity, there was also blood inside the intestines. The peritoneal surface of the intestines was covered with numerous petechiæ of extravasated blood. He found a mark on the left flank of the abdomen which was of a "purplish-black" colour, and though he did not incise this "mark" he stated his conviction that it was a contusion caused by a blow, and he eventually pronounced death as being due to hæmorrhage in the abdominal cavity caused by a blow without in any way indicating the source of that internal hæmorrhage. When asked by the Consul what were the signs of decomposition he said that "the first signs are the body becoming black." It is not in accordance with medico-legal experience that a contusion should remain "purplish-black" or, seeing that no marks of violence could be detected during life, that the discolouration in the peeling skin of an 11 days old body could be so well differentiated, especially by lamplight, as to enable anyone to attribute hæmorrhage to a blow. Dr. Hart admitted that he could not swear to the discolouration being the result of a blow and not simply due to decomposition. For lack of any expert cross-examination his evidence was allowed to go forward without criticism, and, needless to say, it gave the Chinese a handle to their cause which they have not been slow to take advantage of, with the result that, although the defendant was discharged, the British authorities have been placed in a difficult position. Meanwhile, the wheels of the boycott machinery having been set in motion, and local ill-feeling against everything British having been aroused, it will require tact and work on the part of both British and Chinese authorities to show the people that it is absurd for them to describe such a case as one of murder. Foreign medical evidence, however loosely given, is taken as being absolutely in accordance with fact; it would therefore have been better to have avoided making the deduction that death was the result of a blow from such a superficial necropsy. When the doctor who made the necropsy pronounced all the organs as healthy it would have made his evidence of more import if he had given due weight to the presence of petechiæ on the bowel surface—a sign indicative of some morbid hæmorrhagic condition during life. It would also have spared him the animadversions of the judge, who referred to it as "a most extraordinary autopsy which was not only useless but improper. It was also illegal." Peking, Sept. 29th.

University of Liverpool.—At a meeting of the Faculty of Medicine held on Oct. 22nd the Dean announced the entries for the winter session as follows:-Medical School: New entries for degree courses, 23; new entries for diploma courses, 8; total number of undergraduates registered, 132; new entries for the Diploma of Tropical Medicine, 19; new entries for the Diploma of Public Health, 13. Dental School: New entries for degrees and diplomas, 14; total number of dental students registered, 42.

THE DEWSBURY INFIRMARY.—On Oct. 19th Sir T. Clifford Allbutt visited his birth-place, Dewsbury, to open a new nursing home and operating theatre for the Dewsbury He delivered a retrospective address concerning Infirmary his medical and hospital experiences in Leeds and the neighbourhood, and made an appreciative reference to the progress of modern nursing. He also described how the improvement of the sanitary conditions of the country by preventive medicine had decreased greatly the malignancy as well as the frequency of infective disease. Sir Clifford Allbutt was

Obituary.

CESARE LOMBROSO.

ITALY, it has been said, is the only country in Europe besides Great Britain which offers a career to the Jewish race. Certainly she stands alone among her continental sisters in affording counterparts in politics to D'Israeli and Goschen; in law (international and civil) to Herschell and Jessel; in public health to John Simon. In this last-named field she is now mourning the loss of a conspicuous and, in many respects, most salutary worker, Cesare Lombroso, whose life, strenuous and public-spirited, was spent in applying nature study to the physical, mental, and social rehabilitation of Italians, and, indirectly, of the outlying Latin civilisation.

Born in Verona on Jan. 10th, 1836, he was the second son of Aronne Lombroso and Zefira Levi, from both of whom, particularly the mother, he inherited a bright intelligence and an instinctive devotion to the good of his fellow-man. As precocious as John Stuart Mill in linguistic aptitude, he had a working knowledge of Greek and Latin when most boys are learning the grammar of their native tongue, and when in his fifth year he would read aloud to his mother one of "Plutarch's Lives," and then at her bidding would give orally a detailed résumé of the "Life" just read. Sallust, Livy, and Tacitus were all, in his eleventh year, familiar to him in the original, and Dante, mainly through his father's encouragement and aid, he knew well-nigh by heart. In 1850 he was pursuing philological study under Paolo Marzolo, extending its application, thanks to that great scholar and teacher, to "comparative religion" and "comparative civilisation"; but, again at Marzolo's instance, he turned his attention to nature-study and found in it a yet more congenial outlet for his mental powers. He matriculated as a student of medicine in the University of Pavia in 1853 and continued at the classes till the outbreak of the War of Independence in 1859, by which time he had graduated with special qualifications in surgical pathology. On the army medical staff and in the field he acquitted himself with equal skill and courage, and shortly after the revindication of Lombardy to Italian unity he made accurate studies in mental disease, so utilising his opportunities in the lunatic asylums, urban and provincial, that his appointment to the chair of Psychiatry in the Scuola Pavese followed as a matter of course. In 1862, when Darwin's "Origin of Species," published three years before, had taken a hold on the Italian mind which it has never lost, there were few more convinced and enthusiastic students than young Lombroso. By this time he had applied experimental induction to the study and classification of insanity and its types, and from the observations then made and registered he proceeded to connect mental processes and developments with physical organisation, thus laying the first lines of what in later years became the science of which he was virtually the founder, that of "criminal anthropology." While still a teacher in the University of Pavia he became interested in that terrible scourge of rural Italy, "pellagra," and starting from the admirable work of Ballardini he traced it to a specific poison originating in the "corrupted maize" which enters so largely into the diet of the agricultural labourer. Following up his researches he noted the forms of mental disease supervening in the sufferers from pellagra and how these assume various characteristics in keeping with individual organisation. These findings were indeed side-lights on the theory he was gradually, and amid much opposition, both at Pavia and Milan, evolving as to the correlation and interdependence of somatic and mental pathology, afterwards to culminate in his "Uomo Delinquente" or "Oriminal-Né." "Crime," according to him, is the reflex, in the sociological field, of the organic anomalies of the delinquent-anomalies deep-seated, which, in their essential part, must be sought in the nerve centres, and in their accessory part in the other apparatus of the body, particularly in the osseous system. In as far as they are traceable to the nerve centres they produce psychical alterations quite characteristic and betray their degenerative nature in two ways: (1) in as far as they are the reproduction of an atavic character, corresponding to anterior stages of development of the human 'Psyche,' and reveal an

'arrest of development' which places the individual on a lower plane than his fellows; (2) in as far as they are the reproduction of an epileptic character and assimilate the 'delinquente' to a 'neuropathic'—epilepsy being one of the graver, more pronounced degeneracies known as 'neuropathiae.'" Such is the theory, the practical result of which is to recognise in the individual the "accessory anomalies" (of the osseous system, inter alia) as the organic cause of his "delinquency," and, further, to combat the tendency in the organic substratum of the race. Criminology, so conceived and applied, transfers crime from the sphere of traditional jurisprudence to that of anthropological and psychiatric

This is not the place to examine what elements-more or less—of truth the theory possesses, suffice it to say that the book in which it was set forth appeared in 1876 and at once commanded attention and provoked controversy often keen, sometimes embittered. That it was not without a considerable measure of acceptance may be inferred from the fact that "Criminal Anthropology" is so far recognised as a science as to number many votaries whose periodical congresses on an international scale, and held in the chief capitals of Europe, are now a standing feature in contemporary life, medical, forensic, and sociological. On the same lines as the "Uomo Delinquente" followed his treatises on the "Uomo di Genio" (written in conjunction with his sonin-law, the brilliant historian of ancient Rome, Guglielmo Ferrero), and his studies on "Delitto Politico," on the "Donna Delinquente," and, more especially in the psychological field, on "Mediumismo." Of these it is unnecessary to give an appreciation, standing or falling, as they do, with the initial work, "L'Uomo Delinquente." Called to the chair of Criminal Anthropology in Turina chair he may be said to have founded—he sent forth year by year relays of enthusiastic votaries of the science whose intervention at the International Congresses kept his theory in evidence, if not always in acceptance, before the delegates of all the other European schools. Among these Congresses the most animated and memorable was that held at Geneva in the August of 1894, in which Lombroso himself and his intrepid young henchman Enrico Ferri were the protagonists. He was, indeed, more effective in debate than in academic exposition in the professorial chair, when his digressions and parenthetical 'vindications" obscured the theme in hand to all but the initiated few.

Apart from his official duties and his provocative theories, no man was more beloved as a citizen or more respected as a publicist—his transparent honesty in address as in motive winning the sympathies of all who came in contact with him, inspired as he was with the purest philanthropy and belief in the progress of man. For years past his physique had begun to show signs of senile degeneration; cardiac trouble supervened, and though the end came suddenly at 5 A.M. on Oct. 19th, those near and dear to him were not unprepared for it. On the night before he had been particularly vivacious at dinner, discussing with his family and guests the "tragedy of Montjuich," the crisis in Spain, the Tsar's coming to Italy, and all the exciting topics of the hour. At 11 P.M. the party broke up and he retired to rest; but at 2 A.M. his wife became aware that he was suffering from severe cardiac spasm. Soon all the inmates of the house were at his bedside-his gifted daughters Gina and Paola, his son Ugo (assistant to Dr. Luciani, professor of physiology in the Roman School), and later, his two sons-in-law, Guglielmo Ferrero and Mario Carrara (professor of legal medicine in Turin). But he never regained consciousness and "entered into rest" three hours after the seizure. All Italy has joined in lamenting his loss—the leading journals appearing in black borders and commenting on his life and work, with singular unanimity extolling the tenor of the one and the value, theoretical and even practical, of the other. A public funeral, the largest and most conspicuously representative witnessed of late years in Turin, attested on Oct. 20th the esteem and affection in which he was held in the city and province, and among the oraisons functors customary on such occasions in Latin countries, those of Luigi Pagliani, Professor of Hygiene; of Teofilo Rossi, the Syndic; of Enrico Ferri, Professor of Criminology in the Roman School; and of his son-in-law, Guglielmo Ferrero,

man of letters and historian, went home to the hearts of the audience for their pathos and power.

As we write we are informed that a book on which the last years of his life were employed will soon be published at Turin, entitled "Ricerche sui Fenomeni Ipnotici e Spiritici" (Researches on the Phenomena of Hypnotism and Spiritism). A handsome octavo of over 300 pages and with 57 plates illustrative of the text, it forms the latest enrichment of a literature to which nearly every civilised country has contributed, the English-speaking world being represented by Crookes, James, Hislop, Lodge, and Wallace, whose work is criticised or supplemented in its pages.

WILLIAM CLIBBORN, B.A., M.D. DUB., L.R.C.S. IREL.

Dr. William Clibborn, who died suddenly from cardiac syncope on Oct. 13th at Earl's Court, was the son of John Clibborn of Dublin. He was educated at Stackpoole's College, Kingstown, and graduated M.D. of Trinity College, Dublin, in 1878, and also took the Diploma of the Royal College of Surgeons in Ireland in 1875. He held many public medical and hospital appointments in Dublin and Birmingham, and finally settled in Bridport, where he practised for 20 years and gained many friends and took a prominent part in local affairs. He held the posts of medical officer of health, Admiralty surgeon, and other appointments. He was one of the pioneers in the foundation of the Medical Sickness and Assurance Society, which has enjoyed such a great success. Five years ago Dr. Clibborn retired from active practice, finding the fatigue and exertion inseparable from a large and widely scattered country practice too great a strain, and since then he has been travelling abroad for the benefit of his health. His genial manner, good nature, and thoughtfulness for others endeared him to all who knew him. He leaves a widow and many friends by whom he will long be remembered.

DEATHS OF EMINENT FOREIGN MEDICAL MEN. - The death of the following eminent foreign medical man is announced: Dr. Xenophon Ch. Scott, Professor of Ophthalmology in the Western Reserve University, Cleveland.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated :-

in the subjects indicated:

Surgery.—N. B. Benjafield (Sections I. and II.), University College Hospital; H. S. Brown (Section II.), Birmingham; M. Graves (Section I.), London Hospital; A. W. Hansell (Sections I. and II.), Leeds; J. A. Jones (Section I.), Manchester; E. Newhouse (Sections I. and II.), Leeds; S. K. Poole (Section II.), Guy's Hospital; S. H. Seott (Section II.), London Hospital; and G. Tate (Sections I. and II.), King's College Hospital.

Medicine.—H. E. Battle (Sections I. and II.), Leeds and University College Hospital; H. S. Brown (Section II.), Birmingham; B. Robertshaw (Section II.), Manchester; S. H. Scott (Section II.), London Hospital; H. Stanger (Section I.), Leeds; and J. W. Williams (Section II.), Guy's Hospital.

Forensic Medicine.—H. E. Battle, Leeds and University College Hospital; E. G. Brisco-Owen, Cartiff and Royal Free Hospital; H. S. Brown, Birmingham; F. F. L. How, Middlesex Hospital; B. Robertshaw, Manchester; and H. Stanger, Leeds.

Midwifery.—C. S. Foster, Middlesex Hospital; A. W. Hansell, Leeds; D. M. Hunt, London Hospital; and A. H. Rich, University College Hospital.

The Diploma of the Society was granted to the following candidates.

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—N. B. Benjafield, H. S. Brown, B. Robertshaw, S. H. Scott, and G. Tate.

TRINITY COLLEGE, DUBLIN.—At examinations held recently the following candidates were successful:-

INTERMEDIATE MEDICAL EXAMINATION. Part I.—William O. W. Ball, William P. Croker, Walter Crane, Jane F. Colquboun, Maurice Horan, Marjory Chapman, Charles F. Judd, James N. G. Nolan, and Francis V. Agnew.

PRELIMINARY SCIENTIFIC EXAMINATION.

Physics and Chemistry.—Theodore Allen, Robert A. Flood, Reginald H. Jones, William Foot, Joseph Harvey, John W. C. Stubbs, John A. Mac Mahon, Rupert C. Lowe, Henry C. D. Miller, Hawtrey W. Browne, Kathleen D. Wallace, and Eleanor Taylor. Botany and Zoology.—Amos G. Varian, John T. M'Cullagh, George S. M'Conkey, Joseph Harvey, Ernest Bantry White, Hilda M. B. Marsh, Frederick R. Sayers, Michael J. Ryan, Bertram Sheridan, and Frederick A. Sparling.

PREVIOUS DENTAL EXAMINATION. Anatomy and Institutes of Medicine. - Henry Kirk.

FOREIGN UNIVERSITY INTELLIGENCE. Buenos Ayres: Dr. Faustino J. Trongé has been appointed Assistant Professor of Clinical Midwifery and Dr. Rudolfo Erauzquin Assistant Professor of Odontology. - Cologno (Academy of Practical Medicine): Dr. Kayser, docent of Surgery, has been granted the title of Professor. - Padua: Dr. Luigi Messedagalia has been recognised as privat-docent of Medicine. - l'alermo: Dr. Giovanni de Gaetani has been recognised as privat-docent of Internal Pathology, and Dr. Antonio Coletti as privat-docent of External Pathology.—
1 Prague (German University): Dr. Alexander Marguliés,
privat-docent of Psychiatry, has been granted the title of Extraordinary Professor.

Central London Throat and Ear Hospital..-Mr. Charles A. Ballance, M.V.O., will deliver an address on "The Lesson to be Learnt in London from the History of the Mastoid Operation" at the Central London Throat and Ear Hospital, Gray's Inn-road, on Monday, Nov. 8th, at 4.30 P.M.

LITERARY INTELLIGENCE.—"A Bibliography of Trypanosomiasis," embracing original papers published prior to April, 1909, and references to works and papers on Tsetseflies, especially Glossina Palpalis (Rob.-Desv.) and on Sleeping Sickness, has been compiled by C. A. Thimm, of the Sleeping Sickness Bureau, and is now in the press. The work will be issued under the direction of the honorary managing committee in a few weeks.

ORAL SEPSIS AND TETANUS.—At an inquest on the body of a woman, who died from tetanus last week at Southwark, it was given in medical evidence that the teeth were in a very bad state and the septic condition of the mouth might have been responsible for the entrance of the infection. There was a slight wound on the toe, but this had occurred within three days of the onset of symptoms and was therefore probably not responsible for the disease. Dr. F. J. Waldo, the coroner, took the occasion to warn the public on the dangers of neglecting the proper care of the teeth.

HEALTH OF CYPRUS. — Sir Charles King-Harman, K.C.M.G., High Commissioner of Cyprus, in his report to the Secretary of State for the Colonies for 1908-09. remarks that the public health of the island was not so good as in previous years owing to an outbreak of epidemic cerebro-spinal meningitis of an extensive and violent character, which occurred, almost simultaneously, in nearly every district. The number of cases reported was 558, and of these 280, or a little over 50 per cent., terminated fatally. The disease as a rule attacked the poorest class of persons living in damp insanitary dwellings, while those living in more comfortable and cleanly circumstances were, generally, immune. Malarial fevers also were more prevalent than in ordinary years, and large quantities of quinine were imported and distributed for their treatment. The deathrate from this cause was not heavy. Sporadic cases of typhoid fever and a considerable number of cases of influenza detracted also from the general good health of the island. The rural medical service was further extended during the year by the appointment of two additional medical officers. This branch of the service does good work among the villages and is greatly appreciated by the people. The number of inmates of the leper farm at the close of the year was 98, one more than at the end of the preceding year. The general health of the inmates was good; the number of deaths was four. The children of these unfortunate people are cared for and brought up in a separate institution. They number 11, of ages from 2 to 13 years, and up to the present time no sign of leprosy has developed among them. With the exception of a grave crisis in the wine industry, the reports from the several districts of the island indicate a continuance of the prosperity of the people. The standard of living continues to improve and the requirements of the villagers become less simple and more expensive to satisfy. This is abundantly manifested in the improved style and furnishing of their dwellings; in the increasing demand for, and readiness to purchase, land for cultivation; in the higher prices demanded for their produce; in the restoring and re-building of their churches and schools. The Commissioner adds: "There are those who maintain that the British occupation has done nothing for their country and who

remain wilfully blind to the progress which the island is making, but to any impartial observer, to anyone who was acquainted with the state of affairs which existed 30 years ago, that progress is as clear as the sun in the firmament."

THE Edinburgh University Club in London will hold its next dinner on Friday, Nov. 12th, when the chair will be taken by Mr. J. D. Malcolm.

A considerable extension of the accommodation of the Royal Eye and Ear Hospital at Bradford is contemplated, for which some £10,000 are required.

A COOKERY EXHIBITION. — The Twentieth Universal Cookery and Food Exhibition will be held at the Royal Horticultural Hall, Vincent-square, Westminster, from Nov. 2nd to 6th inclusive.

Donations and Bequests.—A sum of £1000 has been voted by the Governor and Court of the Bank of England to the special fund in aid of St. Bartholomew's Hospital. An anonymous donor has also contributed £250.

THE EVELINA HOSPITAL.—The committee of the Evelina Hospital for Children regrets to announce that, owing to ill-health, Mr. Charles Wightman has resigned the chairmanship, a position which he has held for some years with considerable advantage to the institution. Mr. Donald Malcolm Scott has been chosen as his successor in the chair.

PRESENTATION TO A MEDICAL PRACTITIONER. On Oct. 19th at Rugby Mr. T. Johnston, M.R.C.S. Eng., was presented with a marble clock as a mark of respect and esteem by the members of the Ancient Order of Druids, of which he is a Past Arch, on the occasion of his leaving Rugby to take up a practice in Hove.

WestRIDING MEDICAL CHARITABLE SOCIETY.—Comment has been made in these columns on more than one occasion on the excellent work done by this association. The annual meeting, which is held in different centres in the West Riding, took place at Harrogate during the month of September and was well attended. The thought that was uppermost in the minds of all who were present was the sad one that by the hand of death the society had been deprived of its most distinguished, its most enthusiastic, and its most judicious head in the person of Mr. C. G. Wheelhouse. His connexion with the society is briefly summarised in the opening paragraphs of the annual report, which was read at the meeting, and which runs as follows :-

follows:—
"We meet to-day under the shadow of a great bereavement. For the second time in its history our society has to mourn the loss of a presiding spirit." Such were the words used by Mr. Wheelhouse in reference to the death of the late Dr. Chadwick when writing the annual report in 1837. Now, 22 years later, a third epoch is brought to a close by the death of him whose words have been quoted.

Mr. Wheelhouse's father was one of the stewards appointed at the first annual meeting of the society and his partner, Mr. Garlick, was its first secretary. It was not unnatural, therefore, that Mr. Wheelhouse himself should take a deep interest in the charity, an interest which was ripened by the warmth of his kindly nature into an affection and love which remained unaltered and undiminished until the day of his death.

love which remained unaitered and undiffinished until the day of ms death.

Mr. Wheelhouse joined the society in 1853, in which year 15 grants, amounting to £291, were voted. In 1874 he was appointed joint secretary with Dr. Chadwick, and in the following year was asked to undertake the duties of treasurer in addition; his first duty in the latter office was to hand to stewards the sum of £515 for the payment of 19 grants. Last year, after the annual meeting, from which, to his great grief, falling health kept him away, he issued cheques for £1680—the amount of your grants to 49 applicants. It was always a joy to him to contemplate the increasing benefits the charity was able to bestow and to feel it was in some measure due to his careful administration that the means were forthcoming wherewith it was possible to meet these growing demands. The society is also indebted to its late treasurer for his labour in compiling "The story of its origin and early years," which was published in 1901.

His cheery presence, his power of speech, and his whole-hearted devotion to the interests of the society will always be a pleasant memory and a bright example to those who were associated with him.

For many years Mr. Wheelhouse had the valuable assist-

For many years Mr. Wheelhouse had the valuable assistance of Mr. Herbert Rowe, who under his guidance has mastered all the details of the management of the association and who is manifestly imbued with the same spirit of whole-hearted enthusiasm for its welfare. It was natural therefore that he should have been appointed Mr. Wheelhouse's successor and the unanimity and cordiality with which this was done were a tribute to the excellence of his which this was done were a tribute to the excellence of his long services. Grants were made at the annual meeting to Andrew Fullerton, Mr. A. Pearce Gould, Dr. Hector 47 applicants amounting to £1625, and the total amount Mackenzie, Mr. A. W. Mayo Robson, Dr. J. J. Perkins,

made in grants since the commencement of the association is thus brought up to the large sum of £47,920 10s.

MEMORIAL TO PROFESSOR LIONEL S. BEALE. On Oct. 20th a bronze memorial tablet was unveiled in the chapel of King's College Hospital to the late Professor Lionel S. Beale. The tablet was designed, worked, and erected by his son, Mr. Peyton T. B. Beale, F.R C.S., surgeon to the hospital and the present Dean of the Medical School. The inscription sets out very simply Dr. Beale's long connexion with the hospital, exactly 50 years, as physician and consulting physician. Among those who were present at the ceremony, which was a private one, were, in addition to the members of Mr. Beale's family, the Hon. W. F. D. Smith, M.P. (chairman of the hospital), Colonel C. F. Fellows, Mr. L. W. Byrne, Dr. Nestor Tirard (senior physician of the hospital), Dr. Urban Pritchard, Dr. N. Dalton, Dr. G. B. Flux, and members of the nursing staff, past and present. After a very short service by the chaplain, the Part T. B. I. Parker the part T. the Rev. T. B. J. Parker, the unveiling ceremony was performed by Dr. Tirard, who delivered the following address:-

In unveiling this memorial tablet I have asked permission to say some few words—and they are few, not because there is not much that might be said, but because it is felt that it would have been his desire. The tablet is a simple record of his name and the dates during which he worked within these walls. That his work was esteemed is shown from these dates, since they indicate service, continued by request, beyond the normal span. Of the nature of his work, of his cheery service in the wards, of the practical nature of his teaching, of his care for the interests of the school and for the nursing staff, it is not the time for me to speak. I like to cherish three bright memories: in 1872-73 his eagerness in welcoming junior students and others and showing them his microscopic treasures; in 1833 his ready help, when he gave me the results of his experience when I was undertaking new and difficult work; and then, the brightest of all, when at Weybridge amongst his flowers he showed that marvels could be effected by patient skill, not forcing, but encouraging. Patient and cheerful, fearless when defending his firm beliefs, he was, to those who had the privilege of working with him, a perpetual example. The tablet does no more than to say that he worked here for many years. Though it will serve to keep this fact before those who come after us, we who knew him well still feel the influence of his life, still benefit by his experience, and to us he still lives. In unveiling this memorial tablet I have asked permission to say some us he still lives.

In these days, when the subject of pathology is of such moment, it is fitting that a memorial should be erected at the hospital where he worked so long to this pioneer among pathologists, whose work, especially in the application of microscopic methods to the diagnosis of diseases, was and is of the first importance.

STANDARDISATION OF BREAD.—The Bread and Food Reform League has issued a document concerning the standardisation of bread, stating that whole meal, which should be ground to a uniform fineness, contains about two and a half times more of the mineral substances which form bones and teeth, and nourish the brain, nerves, and tissues, than white flour, and that it also contains four times more iron, a considerable portion being found in the germ in a readily digestible condition. The League urges that household bread should retain the germ, which has singular richness in oil, in nitrogenous matter, and in phosphoric acid, and also the semolina, a portion of the wheat, very rich in flesh and bone-forming materials and in fat, but with little fibre. The semolina was formerly retained in household flour, but millers now separate a large percentage of it, and use a considerable proportion for their expensive patent flours, to the detriment of ordinary household flour. The Bread and Food Reform League advocates that the bread of the people should contain this semolina and has obtained guarantees that it is retained in the old-fashioned household bread now used, on the league's recommendation, at Christ's Hospital (Blue Coat School) and at dinners provided for children at London County Council schools by the Alexandra Trust. The league further states that "it is very desirable that a standard should be fixed for what is sold as bread. This has been established for milk, and the standardisation of bread is even more important, as bread and flour form about two-fifths of the weight of food consumed by the working classes, and constitute almost the sole diet of many poor children. A supply of nourishing A supply of nourishing the signatories to this statement are Sir J. Crichton-Browne, Sir John Brors Sir J. bread is therefore of vital national importance." Browne, Sir John Byers, Sir J. Halliday Croom, Sir

Professor Smith, Dr. H. Hammond Smith, Dr. David Walsh, Dr. C. Theodore Williams, Dr. B. C. A. Windle, Professor G. Sims Woodhead, and other medical men. Further information can be obtained from the honorary secretary, Bread and Food Reform League, Miss May Yates, 5, Clement's-inn, Strand, London, W.C.

THE WINDSOR AND DISTRICT MEDICAL SOCIETY. —The annual general meeting of this society, which was held in the board-room of King Edward VII. Hospital, Windsor, on Oct. 14th, under the chairmanship of the President, Dr. Francis H. Hawkins of Reading, was a particularly interesting function. After the adoption of the honorary treasurer's report the President delivered his address, which, in addition to other topics, recounted various matters of interest in the history of the society from its foundation to the culminating point in its career-namely, the inauguration of the handsome library within the walls of the hospital. At the close of the meeting an adjournment took place to this new library, which was formally declared open by Sir Richard Douglas Powell, President of the Royal College of Physicians of London, who at the same time unveiled a portrait of Mr. W. B. Holderness, J.P., who had presided over the society for the first seven years of its existence. Sir Richard Douglas Powell presented the library with a copy of the handsomely bound facsimile reproduction of the diploma granted to William Harvey by the University of Padua in the year 1606, which was published last year by his College. He also spoke at some length on the value of libraries to societies of medical men and their value in forming a bond of union between provincial hospitals and the neighbouring practitioners. Mr. W. J. Handfield Haslett (Sunbury) in an eloquent speech moved a formal vote of thanks to Sir R. Douglas Powell for his kind attendance—a resolution which was seconded by Mr. Holderness in a speech in which he also thanked the society for the honour which it had conferred upon him in placing his portrait in the library. Mr. P. J. de Paravicini, chairman of the hospital committee, also spoke on behalf of the hospital, and the distinguished visitor having replied the proceedings terminated. The annual dinner of the society took place after the meeting, at which Sir R. Douglas Powell, Lord George Pratt, Mr. de Paravicini, the Mayor of Windsor (Mr. W. Carter, J.P.), Dr. S. West, Dr. W. Hale White, Dr. Jamieson B. Hurry, and others were present.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The International Conference on Leprosy.

THE report of Dr. ARTHUR NEWSHOLME, medical officer of the Local Government Board, and Sir MALCOLM MORRIS, K.C.V.O., the delegates of His Majesty's Government to the International Scientific Conference on Leprosy held at Bergen from August 15th to 19th, 1909, has been presented to Parliament.

Bills Passed.

Amongst the measures which have passed during the present session, and have now received the Royal Assent, are the Local Education Authorities (Medical Treatment) Act and the Metropolitan Ambulances

Asylums Officers' Superannuation.

Several changes have been introduced into the Asylums Officers Superannuation Bill in committee of the House of Lords. At the instance of Lord BELPER an amendment was accepted substituting 20 for 15 years as the qualifying period of service, and 55 instead of 50 years as the age when an officer would be entitled to claim superannuation. A subsection was introduced to allow the visiting committees to grant to an officer permanently incapacitated by some injury specifically attributable to the nature of his duty a reasonable gratuity or special superannuation allowance

The Housing and Town Planning Bill.

When the Lords' amendments to the Housing and Town Planning Bill come before the House of Commons for consideration it is very likely that one or two of the provisions with regard to the medical officers of health of counties which have been struck out will be reinserted. Several medical Members of the House of Commons have, it is understood, pressed vigorously on the President of the Local Government Board the desirability of making these medical officers irremoveable without the consent of the Local Government Board. Mr. Burns, it is stated, is prepared to fall in with their views and to advise the House of Commons to reinsert the excised provision. On another point it is not

unlikely that something may be done in the hope of restoring still further the original terms of the clause dealing with county medical officers of health. The Lords struck out the powers given to the Local Government Board to prescribe the duties of these officers. In all probability, a compromise on this provision will be suggested which will make the county councils, and not their medical officers, the recipients of the communications of the Board in this regard.

Beri-beri on Merchant Vessels.

Several questions have recently been addressed by members of the Labour party to the representatives of the Board of Trade in the House of Commons on the occurrence of specific cases of beri-beri on British merchant vessels. For the most part the persons attacked by the disease have been Lascars. In answering one question on the subject Mr. TENNANT informed an honourable Member that the cause of beriberi had not yet been definitely ascertained, but there seemed to be no doubt that had and insufficient food predisposed to the disease. A full report of the inquiry in the specific case on which the question was based was communicated to the Royal College of Physicians of London, which body had the subject of beri-beri under investigation.

Tuberculosis Prevention in Ireland.

A petition from the Royal Sanitary Institute praying for further legislation with regard to the prevention of tuberculosis in Ireland has been presented to the House of Commons.

HOUSE OF COMMONS.

WEDNESDAY, OCT. 20TH.

The Naval Medical Service.

The Naval Medical Service.

Dr. V. H. RUTHERFORD asked the First Lord of the Admiralty whether his attention had been called to the acquittal of Fleet-Surgeon Charles Matthew by court-martial on a charge of behaving with contempt towards Commander Richard Walters, and also to the fact that Fleet-Surgeon Matthew was placed on the retired list at his own request on account of the charge; whether Commander Walters had retired; and what steps he was taking, in the interests of efficiency in the navy, to remove the alleged grievances of the Naval Medical Service.—Mr. McKenna replied: Yes, sir, Fleet-Surgeon Matthew has been placed on the retired list at his own request. Commander Walters has not retired. I should be glad if my honourable friend will direct my attention to the alleged grievances referred to in the last part of his question.

Dr. RUTHERFORD: Was a commission appointed to inquire into these alleged grievances?

Mr. McKenna: A committee was appointed to inquire into certain circumstances affecting the medical service in the navy, but I would not describe them as grievances.

Dangerous Hair-washes.

Sir WILLIAM COLLINS asked the Secretary of State for the Home Department whether he proposed to take any action with a view to restrict or prevent the use of substances for shampooing the hair which by reason of their poisonous or inflammable qualities were liable to cause serious injury or fatal results.

Dr. V. H. RUTHERFORD also asked the right honourable gentleman whether, in view of the recent further deaths which had taken

Dr. V. H. RUTHERFORD also asked the right honourable gentleman whether, in view of the recent further deaths which had taken place in the metropolis from the use of inflammable hair-washes, he could hold out any hope of the introduction of legislation next seesion for the purpose of prohibiting the use of such preparations.

Mr. Gladstore said, in reply to both questions: The matter is receiving my serious attention, and the question whether legislation ought to be undertaken will be fully considered. In the meantime, I may point out that, as intimated by counsel in the recent proceedings at Westminster police-court, the Director of Public Prosecutions would certainly prosecute for manslaughter if tetrachloride should again be used and a fatal result ensue. The inquest in the recent case of two deaths arising from the use of petrol is not yet concluded, but when the inquest is completed the question of prosecution will be considered by the Director of Public Prosecutions.

Guardians and Midwifery Orders.

Guardians and Midwifery Orders.

Mr. Henry Walker asked the President of the Local Government Board whether he had sanctioned the rules of some boards of guardians restricting midwifery orders to mothers who had already not less than a specified number of children; and, if not, whether he would express his official disapproval to the boards which had embo lied this restrictive provision in their rules.—Mr. Burns answered: The reply to the first part of the question is in the negative. I am aware that in the Minority Report of the Royal Commission on the Poor-laws and Relief of Distress attention is drawn to the rules of certain boards of guardians restricting the grant of mitwifery orders to mothers with a prescribed number of children. I have made inquiry on the subject, and I find that in some of the cases cited the rule is seldom or never acted upon, whilst in others it does not apply if the relief is given by way of loan. I am still giving attention to the matter.

Mentally Defective Persons in Workhouses.

Mentally Defective Persons in Workhouses

Mentally Defective Persons in Workhouses.

Mr. Henry Walker asked the President of the Local Government Board whether any legislation was being prepared in his department to give effect to the recommendations of the Royal Commission on the Care and Control of the Feeble-minded, with particular reference to the removal of mentally defective persons from the workhouses.—Mr. Burns said in reply: The initiation of legislation affecting the methods of dealing with mentally defective persons in public institutions would not be a matter primarily for my department, but the recommendations of the Royal Commission on the particular matter referred to in the question will not be lost sight of by me when any such legislation is proposed.

Infantile Mortality in Poor-law Institutions

Mr. HENRY WALKER asked the President of the Local Government Board, with reference to the statements in the Minority Report of the Poor-law Commission as to the absence of official statistics in regard to

the number of births in Poor-law institutions, the rate of mortality in Poor-law institutions of children between the ages of two and five years, Poor-law institutions of children between the ages of two and five years, and the rate of mortality under one year of age of infants being maintained on outdoor relief, whether he would request, by circular to boards of guardians or otherwise, that information on these several points should in future be collected and tabulated, with a view to its inclusion in one of the annual publications of his department.—Mr. BURNS replied: The recommendations made in the Majority Report and the Minority Report of the Royal Commission are receiving consideration. The recommendations in the former report as regards the development of official statistics cover a somewhat wider range than those in the Minority Report to which my honourable friend refers; and pending a decision on the whole matter I think it will be better to defer calling for any such special returns as are suggested in the question. question.

The Vaccination Order of 1907.

Sir MAURICE Levy asked the President of the Local Government Board whether the Vaccination Order of 1907, which came into force in October, 1907, had had the effect of reducing the total cost of vaccination, comparing the cost per vaccination before and after the Order came into force; and, if so, what the reduction had been.—Mr. Burns wrote in reply: There can be no doubt that the effect of the Order has been to reduce the cost of vaccination, but it would not be practicable to give the precise particulars desired by my honourable friend.

THURSDAY, OCT. 21st.

Medical Appointments in India.

Medical Appointments in India.

Mr. Rees asked the Under Secretary of State for India whether Eurasian military assistant surgeons lent to civil and medical departments in India were not generally statutory natives of India, and in that case equally qualified with natives of India proper for all and sundry appointments reserved for natives of India; and whether natives of India, Europeans, and Eurasians were as such in any way disqualified from employment in the civil medical department.—The MASTER or ELIBANK answered: The reply to the first question is in the affirmative, Indians are equally eligible with Europeans for admission to the Indian Medical Service, which service contains many Indian members. As to the civil medical department, I beg to refer my honourable friend to the papers recently presented to Parliament.

Mr. HAZLETON asked the honourable gentleman whether the India Office had received a resolution unanimously adopted at a meeting of the members of the medical profession, held under the auspices of the Bombay Medical Union, submitting that the present system of reserving all high and important posts in the medical service of India for military officers of the Indian Medical Service had led to the systematic exclusion of Indian medical men from them, no matter how highly qualified or deserving these Indian medical men might be; whether he was aware that the system in question had given rise to discontent and imposed unnecessary expense of over £100,000 on the Indian revenue; and what steps it was proposed to take in the matter.—The MASTER of ELIBANK replied: The Secretary of State has not received the resolution referred to. On the general subject I would refer the honourable Member to the correspondence recently presented to Parliament as to the steps that are being taken to promote the growth of an independent medical profession in India by throwing open to the profession in general some of the various civil appointments now held by officers of the Indian Medical Service and other similar appo

The MASTER OF ELIBANE: Both the Secretary of State and the

The MASTER OF BLIBARE: BOTH the Secretary of Source and and Viceroy are making inquiries.

Mr. Rees: Would not the expense of Indian administration be greatly increased if military medical officers were not engaged in civil employment in time of peace, inasmuch as a double set of officers would have to be retained?

No reply was given.

Carbon-Monoride Poisoning.

Carbon-Monoxide Poisoning.

Carbon-Monoxide Poisoning.

Mr. G. Roberts asked the Secretary of State for the Home Department whether his attention had been directed to a disease affecting certain workers in the printing trade, known as carbon-monoxide poisoning, arising from the fumes of a gas now being largely used in heating the metal pots attached to linotype composing machines; and whether he would cause an inquiry to be made with a view to the disease being scheduled as an industrial disease under the Workmen's Compensation Act.—Mr. Gladstone replied: I have made inquiry into the case of which the honourable Member has been good enough to send me particulars, and the reports would appear to show that it was a case of gradual poisoning by carbon monoxide. Such cases are extremely rare, and no other case of the kind in connexion with linotype work is known to the department. Poisoning by carbon monoxide is, of course, not uncommon, but it is almost invariably more or less sudden and of the nature of an accident, so as to come clearly under the main provisions of the Workmen's Compensation Act. The question of scheduling carbon-moxide poisoning as a disease was considered by the Industrial Diseases Committee, but they were unable to regard the evidence as sufficient to justify their recommending its inclusion. In view, however, of the present case, I will give instructions for the main provisors of the executive was considered to the recommending its inclusion. inclusion. In view, however, of the present case, I will give instructions for the matter to be carefully watched by the officers of the department.

Declarations under the Vaccination Act. 1907.

Declarations under the Vaccination Act, 1907.

Mr. Lupton asked the President of the Local Government Board whether he would ctate for what proportion of the births occurring from Jan. 1st to June 30th, 1909, were declarations made under the Vaccination Act, 1907, and how many declarations were actually made during that period.—Mr. Burns answered: The number of births in Ringland and Wales registered in the first two quarters of 1909 was 466,216. It cannot at present be stated in respect of how many of these children statutory declarations of conscientious objection to vaccination have been made. The number of declarations received by the vaccination officers during the first six months of the present year may be stated approximately as 88,500.

MONDAY, OCT. 25TH.

The Sewerage System of Kilkee.

Mr. A. LYNCH asked the Chief Secretary to the Lord Lieutenant of

Ireland, whether his attention had been called to the fact that the defective character of the present sewerage system in Kilkee had been the cause of considerable detriment to that town; and whether he could state what steps he was prepared to take with the object of providing a scheme for the establishment of a satisfactory sewerage system in Kilkee.—Mr. Birrell. replied: The question of the unsatisfactory sewerage arrangements at Kilkee has occupied the attention of the Local Government Board for a long time, and in 1904 it issued an order dealing with this subject and with the watersupply. Legal difficulties have, however, considerably delayed the Kilicush rural district council in procuring an improved water-supply without which new sewers could not be advantageously laid down. As the Board now understands that the new water-supply will shortly be in working order it has urged the district council to appoint an engineer and obtain plans for a sewerage system. In the event of unnecessary delay in proceeding with the works the Board will take steps to enforce its order.

Wednesday, Oct. 27th.

WEDNESDAY, OCT. 27TH.

The Poisons and Pharmacy Act, 1908.

The Poisons and Pharmacy Act, 1908.

Mr. Snowden asked the Secretary of State for the Home Department, whether he was aware that town councils were issuing, in lare numbers, licences to sell poisons under Section 2 of the Poisons and Pharmacy Act, 1908, in places where abundant facilities were provided by the shops of qualified chemists; and, in view of the statement made in that House by the Under Secretary when the Poison and Pharmacy Bill was under discussion, that licences would only be granted under Section 2 where reasonable facilities did not exist, would he take steps to stop the granting of such licences in violation of that understanding and to cancel such licences as had ben issued in contravention of it.—Mr. Gladetenk replied: I am afraid that I cannot add anything to the answers which I gave to questions whe honourable Member on this subject in June last. I have no power control the action of the town councils, and I have already called the attention of the Privy Council Office to the allegations made.

BOOKS, ETC., RECEIVED.

KARGER, S., Berlin.

RGER, S., Berlin.

Ueber die medizinischen Folgezustände der Katastrophe von Courrières (10. März, 06). Von Dr. Eduard Stierlin. Price M.E. Abhandlungen aus dem Gebiete der Geburtshilfe und Gyraschologie. Mitteilungen aus der Zweiten Frauersklinik der Köniz. Ung. Universität zu Budapest. Herausgegeben von Prof. Dr. W. Tauffer. Band I. Heft Z. Price M. 3.

Uber Asthma und seine Behandlung. Von Dr. M. Saenger. Price M. 1.50.

Klinische Mitteilungen aus dem Gebiete der Ohren- und Naschkrankheiten. Von Dr. Victor Lange. Price M. 3.60.

KIMPTON, HENRY, London. (STENHOUSE, ALEXANDER, Glasgow.)

The Physiological Feeding of Infants. By Bric Pritchard, M.A. M.D. Oxon., M.R.C.P. Lond. Third edition, greatly enlarged and entirely rewritten. Price 7s. 6d. net.

LEWIS, H. K., London.

Modical Morbid Anatomy and Pathology. By Hugh Thursfeld, M.D., F.R.C.P., and William P. S. Branson, M.D., M.R.C.P. Price 6s. net.

LIPPINCOTT (J. B.) COMPANY, Philadelphia and London.

International Clinics. Edited by W. T. Longcope, M.D., with Collaboration. Volume III. Nineteenth Series, 1909. Price not

LIVINGSTONE, E. AND S., Edinburgh.

Catechism Series. Chemistry. Part II. Inorganic and Organic. New edition, revised and enlarged. Price 1s. net.

LONGMANS, GREEN, AND Co., London, New York, Bombay, and Calcutta.

Calcutta.

Outlines of Bacteriology (Technical and Agricultural). By David Ellis, Ph.D. Marburg, D.Sc. Lond., F.R.S. B. Price 7s. 6d. net.

Proceedings of the Royal Society of Medicine. Vol. II., No. 9.
July, 1909. Price 7s. 6d. net.

Quain's Elements of Anatomy. Editors, E. A. Schäfer, LLD. Sc.D., F.R.S., J. Symington, M.D., F.R.S., and T. H. Brye.
M.A., M.D. In Four Volumes. Vol. III. Neurology. B. B. A. Schäfer and J. Symington. Part II. Eleventh edition.

Price 15s. net.

Recent Advances in Physical and Inorganic Chemistry. By A. W. Stewart, D.Sc. With an Introduction by Sir William Ramssy. K.C.B., F.R.S. Price 7s. 6d. net.

The Family and the Nation. A Study in Natural Inheritance and Social Responsibility. By William Cecil Dampier Whetham, M.A., F.R.S., and Catherine Durning Whetham, his wife. Price 7s. 6d. net.

The Relation of Medicine to Philosophy. By R. O. Moon, M.A. M.D. Oxon., F.R.C.P. Price 4s. 6d. net.

LOTHIAN, THOMAS C., Melbourne.

The Elements of Animal Physiology. By W. A. Osborne, M.E., D.Sc. Price not stated.

MILLS AND BOON, LIMITED, London.

Home Life in Ireland. By Robert Lynd. Price 8s. net.

LMAN, GEORGE, AND SONS, LIMITED, London.

The Westminster Hospital Reports. Edited by E. D. Macanants and E. Rock Carling. Volume XVI. 1909. Published at 68, no. Price to Subscribers, 5s.

REBMAN, LIMITED, London.

Naval Hygiene. By James Duncan Gatewood, M.D. Price 251. 184.

REID, ANDREW, AND Co., LIMITED, Newcastle-upon-Tyne.

University of Durham College of Medicine, Newcastle apon 77th Calendar for the Year 1909–1910. Price not stated.

SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, LONDON, Pharmacopedia. A Commentary on the British Pharmacopedia, 1898. By Edmund White, B.Sc. Lond., F.I.C., and John Humphrey. Second Edition. Price not stated.

SWITH, ELDER, AND Co., London.

Great and Greater Britain. By J. Ellis Barker. Price 10s. 6d. net. STEVENS AND HAYNES, London.

A Manual of Forensic Chemistry, dealing Especially with Chemical Evidence, its Preparation and Adduction. Based upon a Course of Lectures delivered at University College, University of London. By William Jago, F.I.C., F.C.S., of Lincoln's Inn. Barrister-at-Law. Price 5s. net.

THEOSOPHICAL PUBLISHING SOCIETY, London.

Health, Physical and Mental, or Hygiene of Body and Mind. With Hints on Prevention and Cure of Disease through Cultivation of Natural Immunity. By C. W. Johnson. Price 2s. net.

TOWNSHEND, TAYLOR, AND SNASHALL, Cape Town.

Cape Colony To-day. Second Edition. Issued by the Cape Government Railway Department. Price not stated.

UNWIN, T. FISHER, London and Leipsic.

Ann Veronics. A Modern Love Story. By H. G. Wells. Price 6s, Psychotherapy. By Hugo Münsterberg, M.D., Ph.D., Litt.D., LL.D. Price 8s. 6d. net

URBAN UND SCHWARZENBERG, Berlin und Wien.

Lehrbuch der Ernährung und der Stoffwechselkrankheiten. Von Professor Dr. F. Umber. Price M. 12⁻⁵⁰. Die Cystoskopie im Dienste der Chirurgie. Ein Atlas cystoskopischer Bilder mit begleitendem Text für Acrzte und Studierende. Von Stabsarzt Dr. O. Rumpel. Price M. 30.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Langer Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

ALDERSON, G. G., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon to University College Hospital.

Bennes, Albert E., M.B., Ch.B. Edin., has been appointed Senior House Surgeon to the Blackburn and East Lancashire Infirmary.

Buchan, Thomas, M.B., Ch.B. Edin., has been appointed Junior House Surgeon to the Blackburn and East Lancashire Infirmary.

BURNETT, W. E. S., L.R.C.P. & S. Edin., has been appointed Medical Officer of Health to the Mottram Urban District Council.

NYTON, F., M.D., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician to University College Hospital.

Collingwood, B. J., M. B., B.S. Cantab, has been appointed Professor of Physiology and Histology in the University College, Dublin.

Davies, T. B., M.B., B.S., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician to University College Hospital.

DENPSEY, MARTIN, M.D., B.Ch. Dub., F.R.C.P. Irel., has been appointed Professor of Materia Medica and Therapeutics in the University College, Dublin.

EMANUFL, J. G., M.D., B.S., B.Sc. Lond., M.R.C.P. Lond., has been appointed Honorary Physician to Queen's Hospital, Birmingham.

Ferguson, J. H., M.B., B.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Keighley District of the county of York.

FRASER, FORBES, F.R.C.S. Eng., has been appointed an Honorary Surgeon to the Royal United Hospital, Bath.

HOLROYDE, G., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Windermere District of the county of Westmorland. hop Act for the

Windermere District of the county of Westmorland.

MACKENZIE, JAMES, M.D., M.S. Edin., has been appointed an Assistant Physician to the Mount Vernon Hospital for Consumption and Diseases of the Chest, Hampstead and Northwood, Middlesex.

MCWRENEY, E. J., M.D., M.Ch.R.U.I., F.R.C.P. Irel., has been appointed Professor of Pathology and Bacteriology in the University College, Dublin.

MAURICE, W. B., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Marlborough District of the county of Wilts.

MERMAN, J. N., M.B., B.Ch. R.U.I., has been appointed Professor of Hygiene and Medical Jurisprudence in the University College, Dublin.

NIXON, Sir CHRISTOPHER, Bart., M.D.R.U.I., F.R.C.P. Irel., has been appointed Professor of Medicine in the University College, Dublin.

POTTER, J., L.D.S. R.C.S. Irel., has been appointed Lecturer in Dental

POTTER, J., L.D.S. R.C.S. Irel., has been appointed Lecturer in Dental Mechanics in the University College, Dublin. ROSCOR, HENRY, M.R.C.S., L.R.C.P. Lond., D.P.H., has been appointed House Governor of the North Staffordshire Infirmary and Eye

Hospital.

SERGEANT, F. G., M.B., B.S. Lond., has been appointed Obstetric Assistant to University College Hospital.

SHERIDAN, E., L.D.S. R.C.S. Irel., has been appointed Lecturer in Dental Surgery in the University College, Dublin.

SMITH, ALFRED, M.B., M.Ch. R.U.I., F.R.C.S. Irel., has been appointed Professor of Midwifery and Gynacology in the University College, Dublin.

SMITH, R. R., M.R.C.S., L.R.C.P. Irel., has been appointed Resident Medical Officer to the British Lying-in Hospital. SVEES, HAROLD W., M.B., B.S., has been appointed Senior House Surgeon to the Ingham Infirmary, South Shields.

WALKER, A. S., M.B., Ch.B. Edin., has been appointed Medical Officer to the Leith School Board.

WERNER, L., M.B., B.Ch. Dub., F.R.C.S. Irel., has been appointed Lecturer in Ophthalmology in the University College, Dublin.

WIGHT, A. R., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Leslie District of the county of Fife.

The following have been recommended for Professorships in the University College, Dublin:—

MCARDLE, J. S., F.R.C.S. Irel. (Surgery).

McLOUGHLIM, E. P., M.B., B.Ch. Dub. (Anatomy).

SIGERSON, G., M.D. R.U.I. (Zoology).

Pacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BANBURY, HORTON INFIRMARY.—House Surgeon. Salary £30 per annum, with board and residence.

BETHMAL GREEN INFIRMARY AND WORKHOUSE.—Assistant Medical Officer. Salary £100 per annum, with residence and board.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY
DISEASES, John Bright-street, Birmingham.—Clinical Assistant,
Salary at rate of 52 guineas per annum.
BIRMINGHAM CITY FEVER HOSPITAL, Little Bromwich.—Assistant
Resident Medical Officer. Salary £120 per annum, with board,
lodging, washing. &c.

BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

BURNLEY UNION WORKHOUSE.—Resident Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, rations, washing, and attendance.

CANCER HOSPITAL, Fulham-road, London, S.W.-Assistant Anæsthetist. Salary 25 guineas per annum.

CHARTHAM, KINT COUNTY ASYLUM.—Third Assistant Medical Officer, Salary £145 per annum, with board, quarters, attendance, and

washing.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—House Surgeon, unmarried. Salary £80 per annum.

CHICHESTER, WEST SUSSEX AND EAST HANTS GENERAL INFIRMARY AND DISPENSARY.—House Surgeon, unmarried. Salary £90 per annum, with board, residence, and washing.

DUDLEY, GUEST HOSPITAL.—Senior Resident Medical Officer. Salary £100 per annum, with board, residence, attendance, and washing.

DUMFRIESSHIRE SECONDARY EDUCATION COMMITTEE.—Two Medical Assistants. Salaries £250 per annum.

East London Hospital for Children and Dispensary for Women, Shadwell, E.—House Surgeon. Salary at rate of £75 per annum, with board and residence.

Shadwell, E.—House Surgeon. Salary at rate of £75 per annum, with board and residence.

Gordon Hospital for Fistula, &c., Vauxhall Bridge-road S.W.—
House Surgeon, for six months. Salary £25.
Great Northern Central Hospital, Holloway-road, N.—Physician.
Also Surgeon to the Ear and Throat Department.
Hospital for Epilepsy and Paralysis and other Diseases of the Nervous System, Maida Vale—Resident Medical Officer.
Hospital for Sick Children, Great Ormond-street, London, W.C.—Fouth Annesthetist. Salary £15 15s.
Leeds General Infirmary.—Ophthalmic House Surgeon. Salary £50 per annum. Also Two House Physicians for six months.
Leicester, Leicestershere and Rutland Asylum.—Senior Assistant Medical Officer, unmarried. Salary £170 per annum, with board, residence, and laundry.
Lincoln County Hospital.—Junior House Surgeon, unmarried, for six months. Salary at rate of £75 per annum, with board, residence, and washing.
Lister Institute of Preventive Medical Officer, S.W.—Two Assistant Bacteriologists. Salaries £250 and £200 per annum respectively. Also Jenner Memorial Studentship and Grocers' Company Research Studentship. Annual value £150.
Liverpool, Stamley Hospital.—Junior House Surgeon. Salary £60-per annum. Hospital. Whitechapel. E.—Assistant Anesthetist.

per annum.
LONDON HOSPITAL, Whitechapel, E.—Assistant Anæsthetist.
LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Medical
Registrar.

Registrar.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Dental Surgeon.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE
CHEST, Hampetead and Northwood, Middlesex.—Senior and Junior
Resident Medical Officers. Salary £175 and £75 per annum respectively, with board and residence.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160, with apartments, attendance, light,
and fuel.

NOTTINGHAM GENERAL HOSPITAL.-House Surgeon. Salary 2100 per

annum, with board, lodging, and washing.

QUREN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—
Resident Medical Officer for four months. Salary at rate of £50 per

annum, with board, residence, and washing.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, R.C.—Third House
Surgeon. Salary at rate of £50 a year, with board and residence.

Surgeon. Saisty at rate of 250 a year, with board and residence. Also Assistant Surgeon.

St. Mark's Hospital for Fistula and other Diseases of the Rectum, City-road, E.C.—House Surgeon. Salary 230 per annum, with board, lodging, and washing.

St. Mark's Hospital, Paddington, W.—Assistant Physician to Out-

patients.

Salop Infirmary and County Hospital.—House Physician. Salary at rate of £70 per annum, with board and apartments.

Salterley Grange Sanatorium for Consumptives, near Chelten-ham.—Medical Superintendent. Salary £250 per annum, with hoard.

SCOTLAND, HARRIS PARISH.—Medical Officer. Salary 2126 per annum, with free house.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Surgeon, unmarried.

Salary £50, with board, lodging, and washing.

Staffordshire County Asylum, Cheddleton, Leek.—Senior Assistant Medical Officer. Also Junior Assistant Medical Officer. Salaries £250 and £200 per annum respectively, with board, apartments, and

washing.
STAFFORD, STAFFORDSHIBE GENERAL INFIRMARY.—Assistant House Surgeon. Salary £82 per annum, with board, residence, and

Surgeon. Sairy 202 per annum,
laundry

STAMFORD HILL AND STOKE NEWINGTON CHARITABLE DISPENSARY,
N.—Assistant Medical Officer. Sairy £100 per annum, with board
and residence.

STOKE-ON-TRENT. NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill.—Resident Surgical Officer, House Physician, and
Junior House Surgeon. Salaries £120, £100, and £50 per annum
respectively, with apartments, board, and washing.

SURREY DISPENSARY, Southwark, S.E.—Physician. Salary 50 guineas
per annum.

per annum.

Swindon, G.W.R. Medical. Fund Society.—Assistant Medical Officer, unmarried. Salary £300, advancing to £400 per annum.

Throat Hospital., Golden-square, W.—Resident House Surgeon.

Salary £75 per annum, with board, residence, and laundry.

Tunbridge Wells General Hospital.—Junior Resident Medical Officer. Salary £80 per annum, with board, residence, &c.

University College Hospital. Gower-street, W.C.—Resident Medical Officer, Surgical Registrar, and Obstetric Registrar.

Victoria Hospital for Children. Tite-street, Chelsea, S.W.—House Surgeon for six months. Salary £30, with board, lodging, and laundry. and laundr

and laundry.

WEST HERTS HOSPITAL, Hemel Hompstead.—House Surgeon. Salary £100 per annum, with rooms, board, and washing.

WESTMINSTER HOSPITAL, S.W.—Obstetric Physician. Also Assistant Obstetric Physician.

WEST SUFFOLK EDUCATION COMMITTEE.—Medical Inspector of School. Children. Salary £250 per annum, with travelling expenses.

THE Secretary of State for the Home Department gives notice that he proposes to appoint an additional Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 6, to be attached more particularly to Southport and Ornskirk County Court, and is prepared to receive applications for the appointment.

Births, Marringes, and Deaths.

BIRTHS.

CONSTANT.—On Oct. 25th, at Gravesend, the wife of Frederick Constant, L.D.S. Eng., of a son.
COOPER.—On Oct. 19th, at Hospital House. Pembroke Dock, to Surgeon Henry Cooper, Royal Navy, and Mrs. Cooper, a daughter.
LUMSDEN.—On Oct. 24th, at Fitzwilliam-place, the wife of J. Lumsden, M.D. of twin daughters.

M.D., of twin daughters.

PEARSON.—On Oct. 21st, at the Manor House, Leighton Buzzard, the wife of Reginald Spencer Pearson, M.R.C.S. Eng., &c., of a son.

PENNETATHER.—On Oct. 23rd, at Deanhurst, Harrow, the wife of C. Maxwell Pennefather, M.B., B.S., of a son.

MARRIAGES.

MARRIAGES.

Byles—Hamain.—On Oct. 25th, at Arras, Pas de Calais, France, James Beauzeville Byles, M.B., to Marie Alice Cecile, daughter of M. and Madam Hamain, France.

RLIS—Sanders.—On Oct. 19th, at St. Leonard's Church, Colchester, by the Rev. Canon Sanders, uncle of the bride, assisted by the Rev. J. M. Evans, Rector of Lexden, Frederick William Ellis, M.D., F.R.C.S. Eng., youngest son of the late Christopher Ellis of Penpol, Hayle, Cornwall, to Constance Maude Frances, eldest daughter of Edwin J. Sanders, of Lexden Park, Colchester.

Jackson—Ormerod.—On Oct. 20th, at St. Matthew's Church, Rastrick, Major R. W. H. Jackson, R.A.M.C., to Mary Beatrice, youngest daughter of the late C. J. Ormerod, Esq.

MASON—JACKSON.—On Oct. 27th, at St. Peter's, Little Thurlow, by the father of the bride, John Black Mason, M.B., Ch.B. Edin., of Ealing, to Edith Lilian, second daughter of the Rev. Robert Jackson, M.A., Rector of the parish.

MILBANK-SMITH—FORESHEW.—On Oct. 22nd, at St. Margaret's, Streatham Hill, Harry James Milbank Milbank-Smith, M.R.C.S., L.R.C.P., to Beatrice Ada, second daughter of Frederick Foreshew, Clapham Park, S.W.

WATSON—MACFARLANE—On Oct. 20th, at St. Mary's, Carden-place, Aberdeen, John Nuthall Watson, M.R.C.S., L.R.C.P. Lond., to Eleanor Gordon, third daughter of the late Alexander Macfarlane, H.M. Customs, and of Mrs. Macfarlane.

DEATHS.

Holman.—On Oct. 23rd, at Gate House, East Hoathly, Sussex, Thomas Holman, M.R.C.S., L.S.A., in his 72rd year.

Myers.—On Oct. 21st, at Kent Cottage, Cleveland-road, Ealing, Henry Reynolds Myers, V.D., late Surgeon-Colonel 19th, late 37th, Middlesex (Bloomsbury) Rifle Volunteers, in his 73rd year. Friends please accept this, the only intimation. Colonial and Egyptian papers, please coov.

papers, please copy.
REID.—On Oct. 25th, Charles Reid, M.B., C.M., aged 45 years.

N.B.- A fee of 58. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Rotes, Short Comments, and Answers to Correspondents.

HYPODERMIC PURGATIVES.

In the August number of the Journal of Pharmacology and Experimental Therapeutics Professor John J. Abel and Dr. L. G. Rowntree of the Johns Hopkins University contributed the first section of a paper on the pharmacological action of phenolphthalein and of some of its derivatives, with special reference to their behaviour as purgatives. An attempt was made to study the influence of substitution in various parts of the molecule upon the pharmacological and physiological properties of the phthaleins, more especially upon their excretion, reabsorption, and purgative action. Aside from these problems of theoretical and practical interest it was hoped that the investigation might lead to the attainment of a therapeutic endnamely, the discovery of a serviceable hypodermic purgative. The various experiments, which were made on dogs and rabbits. have led to results of considerable scientific and practical interest. They show that phenolphthalein and phenoltetrachlorphthalein do not differ markedly in their pharmacological behaviour. They are non-irritant when applied to mucous membranes or to open wounds, or when injected subcutaneously in oily solution. Their sodium and potassium salts, however, are highly irritating when administered subcutaneously in aqueous solution. The toxicity of these phthaleins is very low; large quantities may be injected repeatedly into a vein of the dog without causing any apparent pathological lesions; when given intravenously they cause a small and rather prolonged rise of arterial pressure. Both phenolphthalein and its tetrachlor derivative are laxative or purgative when given by the mouth or when injected under the skin or into a vein. When a solution of 0.4 gramme of the tetrachlor derivative in neutral olive oil is injected under the skin of dogs or of human beings a laxative action is induced which continues from four to six days. Phenolphthalein administered in the same dose and in the same way does not act for so long a time for the reason that it is more quickly excreted. This prolonged action, together with the low toxicity of these compounds, leads to the belief that a serviceable hypodermic purgative will be found among the phthaleins The tetrachlor compound is efficient as a or their derivatives. laxative, but its insolubility in water and its low solubility in oil stand in the way of its general adoption, although they do not detract from its efficiency when a subcutaneous laxative is required. It may be mentioned that in the various experiments on dogs it was held that the drug under trial had acted as a laxative when the free had changed from the clay-coloured, dry, and friable condition of the fore period to a brown or black, moist, homogeneous, sticky or pasty consistence. The experiments further show that the subcutaneous injection of an aqueous solution of the sodium salt of phenolphthalein. as suggested by Fleig, is impracticable owing to its irritating action, which is probably due to the liberation of sodium hydroxide in the tissues by hydrolytic dissociation. The success so is obtained in effecting purgation by the subcutaneous injection of an oily solution of the tetrachlor derivative of phenolphthalein The success so far without the production of local pain marks a distinct advance in therapeutics. Eserine and apocodeine are being used for this purpose to a limited extent in medical practice, but untoward results are frequently obtained with the former, while the latter, according to Heinze, cannot be depended upon in more than 47 per cent. of the cases. In hospitals for epileptics and the insane occasions frequently arise when a hypodermic purgative is needed, owing to the refusal of patients to take drugs by the mouth or in the form of an enema. This form of medication is also indicated in conditions of the digestive tract when administration by the mouth is impracticable, in comatose states, in cases where tolerance has been established to purgative given by the mouth, and especially in the practice of abdominal Turning to the mode of excretion of the phthaleins, the investigation shows that the tetrachlor derivative, when given subcutaneously, escapes from the body in the bile only. When phenolphthalein is given in the same way a part of it always escapes in the urine. When the tetrachlor derivative is administered by the mouth none of it appears in the bile or urine, but phenolphthalein, administered in a similar manner, may appear in both of these secretions to a small extent. As regards absorption by the large intestine, proof was obtained in several ways that after the subcutaneous administration of phenolphthalein and its tetrachlor derivative the mucosa of the large intestine absorbs these drugs from their solution in bile. It was also found that these compounds are not excreted by the intestines, except, perhaps, in minimal amounts.

AN INVALID BABIES' HOME.

A MEDICAL correspondent writes :-

"I believe I am correct when I say that there is not a convalence." home for babies under two years of age existing in England. This being so, I wish, through the medium of THE LANCET, to make more generally known a small home for babies which has recently been started by a community of Dominican nursing sisters it.

Bury St. Edmunds. I can testify to the excellence of their with

for whilst they were in London I visited the home. At that time the sisters had charge of four small children ranging from 18 months to two years old—one child had been taken from the Queen's Hospital, Hackney-road, a deplorable-looking little object with infantile hemiplegia, and two other little miseries from the slums of Hoxton, one of whom had been living in a cellar. They were all promptly put in the garden and kept there all day and made rapid progress and were to me a striking example of what fresh air, sunlight, plain and simple food will do for such cases. The children became fat and rosy, pictures of health. I am glad to have this opportunity of testifying to the careful and constant personal devotion to the little ones on the part of the sisters, who are hoping to extend their work, at present very limited as to numbers from want of funds. They will be glad to receive infants from one to three years of age suffering from rickets, paralysis (infantile and other forms), "wasters," and convalescents from acute diseases. A minimum charge of 5s. a week is made. I hope my confrères will make this work known, for I feel sure that such a home is very necessary and would probably be well supported were it known to exist. The address is, The Superioress, Home for Invalid Bables, 76, Guildhall-street, Bury St. Edmunds."

SMALL PROPERTY AND PUBLIC HEALTH.

Dr. G. W. Eustace of Arundel gave an address on "Why it is Difficult to Guard the Public Health," at a meeting of the Public Health and Local Government Officers' Association for Sussex, at Chichester, on Oct. 16th. In the course of his remarks he said there was an immense number of houses of the working classes which were unfit for human habitation, and the great difficulty was to bring them to the knowledge of the governing council. There was, he said, no machinery by which this could be done properly; it was done by disease after a man or woman or the children had gone to their graves. The medical officer's hands were tied because the working classes would not make complaint for fear of being turned out. Dr. Eustace is at the present time Mayor of Arundel, and in that borough, he said, a resolution had been passed that it should be the duty of the sanitary inspector to examine every house in the borough once in two years. The result, he added, had far exceeded what he expected, and in a great many cases some defect dangerous to human life was found. The difficulty which resulted from the condemnation of small property was that the tenants had no other place to go to, but Dr. Eustace thought that that was a difficulty which time must find some way to meet. In the subsequent discussion it was contended that the law did not go far enough and that sanitary authorities should have power to obtain an order from the justices for the closing of houses without serving a notice on the owner to abate the nuisance.

THE RELATIVE ACTIVITY OF NATURAL AND SYNTHETIC ADRENALIN (SUPRARENIN).

THE discovery of the vaso-constrictor action of the extract of the supra renal glands by Oliver, Schäfer, and others stimulated research into the chemistry of this valuable therapeutic agent, with the result that an active principle, more or less pure, was soon isolated by Abel, Aldrich, Takamine, and others. In proportion as this interesting substance was studied by physiologists and clinicians its field of usefulness was rapidly extended, until it has become recognised as one of the most useful drugs in the materia medica. Within the past few years synthetic methods have been discovered for producing bodies having the properties of adrenalin, including synthetic suprarenin, arterenol, homorenon, and other catechol derivatives. Of these the first named, a methylamino alcohol, was claimed by Biberfeld to be physiologically identical with the natural substance. Dixon and Cushny, however, found that these substances did not possess equal activity, and evidence was soon obtained that the synthetic substance was optically inactive, being a mixture of the dextro- and lavowas optically inactive, being a mixture of the dextro- and lavorotatory bases, of which the latter alone was markedly active, thus supporting Cushny's conclusion that the natural base, which is lavo-rotatory, is twice as active as the synthetic base. Later, Cushny examined specimens of the dextro- and lawo-varieties of the synthetic base and found that their physiological activity was in the ratio of 12:1, while the lawo-rotatory synthetic base was about equal in potency to the active midually extends from the clarks. principle obtained from the glands. The manufacturers of the synthetic product, however, do not appear to have allowed Cushny's work to pass unchallenged, with the result that during the past few months the question has been in an unsettled condition. In view of the great importance of the matter it is satisfactory to note that an investigation has been conducted by Dr. W. H. Schultz, in the pharmacological laboratory of the Public Health and Marine Hospital Service of the United States, and the results are published in the form of a bulletin (No. 55) of 77 pages. One of the first difficulties encountered was the variation in the activity of the natural substance (adrenalin) found upon the market. A quantity was purchased direct from the maker, and after re-purification it was found to contain only 31 per cent. of the pure base, whereas the maker had claimed that it contained 77 per cent. In comparing the activity of the various substances Dr. Schultz determined the rise of blood pressure in dogs under morphine-ether anæsthesia, the vagi being cut, and sufficient curare being given to prevent tremor of the muscles. The determination of the mydriatic action of adrenalin and its substitutes upon the frog's eye, when exposed to bright sunlight, afforded trustworthy results, but the reaction is less delicate and more tedious than th,

blood-pressure method. He found that the optically inactive synthetic suprarenin possesses only two-thirds of the vaso-constrictor and mydriatic properties of the natural substance. It is interesting to note that isolated experiments might be taken from those recorded by Dr. Schultz to show that both Biberfeld and Cushny were correct. A comparison of successive sets of readings, however, shows that Cushny's results were more nearly correct than those of Biberfeld. Of the other catechol derivatives arterenol was found to be equal in activity to the natural substance, while homorenon possesses but one-Experiments made on mice to eightieth the activity of either. Experiments made on mice to determine the relative toxicity of these substances showed that the natural product is one and a half to twice as toxic as the optically inactive synthetic substance, five times as toxic as arterenol, and from 80 to 88 times as toxic as homorenon. In conclusion, Dr. Schultz suggests that the relative physiological activity of these catechol derivatives seems to depend upon a substance partaking of the properties of a secondary alcohol or ketone, upon the nature and number of groups displacing the hydrogen of the amino group, and upon the arrangement of the asymmetric carbon atom in space. With the theory that these are the determining factors in modifying the vaso-constrictor action of such compounds, it is hoped that as a working basis it will aid in a more extended study of other compounds possessing similar physiological activity.

OUR DEADLY ATMOSPHERE!

THE following words form the last paragraph of an article in the Paily Mail, headed "Scientists in a Boiler," describing certain physiological experiments with high atmospheric pressures at the London Hospital Medical College:

"An important point which has been elucidated by these experiments is that the poisonous factor in the atmosphere, nitrogen, is absorbed five times faster by the fat than by any other tissue in the body, and that, therefore, fat men are peculiarly unsuited to act as divers, workers in compressed air caissons, etc., for their liability to absorb nitrogen with undue rapidity makes them fall ready victims to heart and circulatory troubles when working under such conditions.

Doubtless we shall soon be supplied with a nitrogen-free atmosphere now that the attention of the authorities has been called to the poisonous properties of that inert gas in which mankind has been immersed for so many centuries.

A HYGIENIC TABLE-FORK.

To the Editor of THE LANCET.

SIR,-I have read with much interest the notice in your issue of Sept. 18th of an invention with this title. Had this invention been given to the world some 20 years ago the career of a poor lad who has since been often in my mind would not have been blasted.

In the spring of 1889 I started housekeeping in a small settlement on the Portuguese coast of West Africa, and the servant problem was one of many with which I was faced. For the household work I was obliged to hire some juvenile slaves from their masters, and of these, to whom fell the duty of cleaning the knives and forks, was a dusky youth who, from his striking profile, the palmated form of his feet, and the unpronounceability of his own name, was rechristened by me "Pato Ganso"—or "The Goose." He was a well-meaning boy, but I could not disguise from myself the fact that the forks too often showed traces of what appeared to be the previous meal lodged in the angles between the prongs, and I felt it my duty to seek an interview with him while he was at his work. I found him busy at his table. On one side of him was a pile of "dirty" forks, on the other was a smaller heap of "clean" ones. Pressed firmly between his lips was a fork thrust well home into his enormous mouth. Ryeing me with the steadfast and contented gaze of a menial who has by chance been caught doing his work conscientiously and well, he slowly but firmly withdrew the fork and placed it on the clean" pile. Still regarding me with the respectful air of a good and faithful servant he took up a "dirty" fork and, to the apparent imminent danger of his uvula, proceeded with the cleansing process-Before this was completed, however, he was, to his bewilderment, sent back to his master, who relegated him to agricultural labour, to the hardships of which he, doubtless, succumbed in due course, Had a hygienic fork been in existence in those days The Goose might by now have attained the dignity of a butler's position, and I should have been spared many a retrospective shudder.

I am, Sir, yours faithfully, NIGEL KEN.

Bombay, Oct. 5th, 1909

CONVICTION OF A BIRD-BLINDER.

THE practice of blinding birds with the superstitious motive of improving their powers of song is unbappily common enough in Southern Europe, but it is very rare to hear of a case being proved in this country, although it is generally known that English birdfanciers exist who are brutal enough to do it. On Monday last Frederick Collins was sentenced to three months' hard labour at Lambeth police court for destroying the sight of two chaffinches. According to the Times report, Mr. Alexander Pearce, a veterinary surgeon, said that he had examined the birds, and in one case both eyes were disorganised; in the other only one eye seemed to have been tampered with. He was of opinion that the optic nerve and the

central artery of the retina had been severed by inserting a needle at the back of the eye. An officer of the Royal Society for the Prevention of Cruelty to Animals (which instigated the prosecution) deposed that the defendant had confessed to him that he had blinded the birds, "but it was a dangerous word to use." He also said, "At my game you have to be a tectotaler. You want a very steady hand with the needle." The defendant protested his innocence, but received The defendant protested his innocence, but received the sentence stated above. Cruelty of this kind can only be appraised by its motive, and as the motive that makes bird-blinders is simply the desire for gain, there are few punishments that can be considered excessive for them

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Beek.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION (Hon. Secretaries—J. Gray Duncanson, H. Charles Cameron): at 4.30 p.m.

Papers:
Dr. David B. Lees: The Physical Signs of Incipient Pulmonary
Tuberculosis and its Treatment by Continuous Antiseptic
Inhalations, with the Results in 30 Cases.
Dr. H. H. Dale: The Action of Some Diuretics.

PATHOLOGICAL SECTION (Hon. Secretaries—L. S. Dudgeon, C. Bolton): at Royal Medical College, Millbank, at 8.30 P.M. Laboratory Meeting.

LARYNGOLOGICAL SECTION (Hon. Secretaries—George C. Cath-cart, L. Hemington Pegler): at 5 p.m.

LaryngoLogical Section (Hon. Secretaries—Greerge C. Caurcart. L Hemington Pegler): at 5 p.m.

Mr. Seccombe Hett: (1) Chronic Glanders in a Man aged 24 Years; (2) Three Specimens of Neoplasms of the Palatine Tonsils, and One of the Pharyngeal Tonsil, Removed by Operation: Microscopic Sections of the Growth; (3) An Attachment to v. Bruning's Instrument for Facilitating Manipulations under Direct Laryngoscopy.

Dr. Dan McKenzie: Perforation of the Nasal Septum from Salt (NaCl) Dust in a Woman aged 20 Years, and Specimen prepared by Dr. Wyatt Wingrave.

Dr. StClair Thomson: (1) Tuberculosis of Left Vocal Cord and Inter-arytenoid Space, in a Lady aged 46 Years, Completely Healed by 2 Months' Silence and Sanatorium Treatment; (2) Tuberculosis of the Larynx in a Medical Man, aged 41 Years, Developing after Sanatorium Treatment, and Cured by Galvano-cautery; (3) Tuberculosis of the Epiglottis, Left Aryepiglottic Fold and Left Inter-arytenoid Space in a Gentleman, aged 47 Years, Completely Healed by Galvano-cautery and Sanatorium Treatment; (4) Papilloma of the Larynx in a Boy, aged 64 Years; 4 Years' Duration, Cured by Tracheotomy and repeated Operations by Direct Laryngoscopy; (5) Enchondroma of the Larynx in a Woman, aged 58 Years, Removed by Laryngo-fissure.

- (5) Enchondroma of the Larynx in a Woman, aged 58 Years, Removed by Laryngo-fissure.
 Dr. Jobson Horne: Laryngeal Neoplasm in a Woman, aged 64 Years—brought before the Section on Nov. 6th, 1908, when a Microscopic Section was also exhibited.
 Mr. Stuart-Low: A Case of Extra-laryngeal Inoperable Carcinoma, shown at Meeting on May 7th, and shown again to Illustrate Beneficial Effects of Operation on Thyroid Gland.
 Dr. Dundas Grant: (1) Neoplasm or Infiltration (Tuberculous) of Left Ventricular Band Concealing Left Vocal Cord; (2) Epithelioma on Posterior Surface of the Cricoid Cartilage, Simulating Tuberculosis, in a Woman, aged 29 Years, Operation for Complete Laryngectomy begun but abandoned on account of Extensive Involvement of Œsophagus; (3) Epithelioma of the Right Vocal Cord in a Man, aged 60 Years, Removal by Thyrotomy; (4) Epithelioma of Left Vocal Cord in a Woman, aged 58 Years, Removal by Thyrotomy.
- Thyrotomy.

 Dr. Dundas Grant and Dr. Dan McKenzie: Epithelioma of Left Vocal Cord in a Woman, aged 58 Years, Removal by

Vocal Cord in a Woman, aged 58 Years, Removal by Thyrotomy.

Dr. Irwin Moore: Paralysis of Left Recurrent Laryngeal Nerve existing for 21 Years in a Male, aged 57 Years.

Dr. Clayton Fox: Paralysis of the Vocal Cord in a Case of "Myotonia Atrophica."

Mr. E. B. Waggett: Case Illustrating the Evil Effects of Prolonged Use of Cocaine in the Nose.

Dr. Scanes Spicer: Model by which the Variation in Effect of Costal (back) and Abdominal (belly) Breathing on the Stresses, Strains, and Frictions in the Throat and Larynx, more especially of Cricoid Cartilage on the Spinal Column, and also the Transverse Axis of Respiratory Rotation of the Cricoid on the Thyroid Cartilages, can be Illustrated.

SECTION OF ANÆSTHETICS (Hon. Secretaries—Llewelyn Powell, R. W. Collum): at 8.30 p.m.

Paper:
Dr. Vivian Orr: Heart Massage in Chloroform Syncope.

Dr. R. H. Hodgson: An Apparatus for the Administration of Ether by the Open Method.

N.B.—Fellows of the Society are entitled to attend and to speak at all Meetings.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY .- 4.15 P.M., Clinical Meeting.

RÖNTGEN SOCIETY, 20, Hanover-square, W.

THURSDAY. -8.15 P.M., Ordinary General Meeting.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East,

Tuesday.—5 p.m., Dr. J. A. Lindsay: Darwinism and Medicine. (Bradshaw Lecture)
THURSDAY.—5 p.m., Sir T. Clifford Allbutt, K.C.B.: Greek Medicinein Rome. (Fitz-Patrick Lecture.)

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn. Fields, W.C.

Monday.—5 p.m., Prof. S. G. Shattock: Sarcoma. (Museum

Demonstration.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. G. Little: Clinique (Skin). 5.15 P.M.,
Lecture:—Dr. G. E. Herman: Puerperal Belampsia.

TUESDAY.—4 P.M., Dr. J. Taylor: Clinique (Medical). 5.15 P.M.,
Lecture:—Dr. Purves Stewart: Facial Hemispasm.

WEDNESDAY.—4 P.M., Mr. A. P. Gould: Clinique (Surgical). 5.15 P.M.,
Lecture:—Dr. A. E. Giles: The Menopause, Natural and
Artificial.

Artificial.

Arthecial.

THURSDAY.—4 P.M., Sir Jonathan Hutchinson: Clinique (Surgical).

5.15 P.M., Lecture:—Dr. L., Guthrie: Some Nervous Affections in Children.

FRIDAY.—4 P.M., Dr. J. Horne: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-

oad, W.

MONDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of
Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays.
Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M.,
Lecture:—Mr. R. Lloyd: Amesthetics.

TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations.
12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M.,
Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases
of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr.
Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr.
Moullin: Gynæcological Cases.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children.

Moullin: Gynacological Cases.

WEDNESDAY.—10 A.M., Dr., Saunders: Diseases of Children.
Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 p.m.,
Lecture:—Dr. G. Stewart: Practical Medicine. 2 p.m., Medical
and Surgical Clinics. X Rays. Mr. B. Harman: Diseases of
the Ryes. 2.30 p.m., Operations. Dr. Robinson: Diseases of
Women. 5 p.m., Lecture:—Dr. Low: Examination of Blood
in Tropical Diseases.
Thursday.—10 A. Lecture.—Surgical Positions. Description.

in Tropical Diseases.

THURSDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Pathological Demonstration:—

Dr. Bernstein. 2 p.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 p.M., Operations. 5 p.M., Lecture: Mr. Edwards: Clinical.

FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. Medical Registrar: Demonstration of Cases in the Wards. 2 p.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Rar. 2.30 p.M., Operations. Dr. Abraham: Cases Diseases of the Skin. 5 P.M., Lecture:-Dr. Abraham: Cases of Skin Diseas

of Skin Disease.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Mr. B. Harman: Diseases of the Eyes. Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. 2.30 P.M., Operations.

Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. 2.30 P.M., Operations.

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Monday.—2 P.M., Operations. 2.15 P.M., Sir Dyce Duckworth: Medicine. 3.15 P.M., Mr. Turner: Surgery. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 140 P.M., Special Lecture:—Mr. R. Lake: Post Nasal Catarrh.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNISDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 3.30 P.M., Special Lecture:—Dr. F. Taylor: Aortic Disease.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medicine. 3.15 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. Saturday.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. Saturday.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

10 A.M., Surgical and Medical. 11 A.M., Eye.

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Monday.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Evans), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson). 4.30 P.M., Medical In-patient (Dr. A. J. Whiting).

TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld), 2.30 P.M., Operations (Mr. H. W. Carson). Clinics:—Gyngcological (Dr. A. E. Giles); Surgical (Mr. W. Edmunds).

Weddisday.—Clinic: 2-.2.30 P.M., Medical Out-patient (Dr. T. E. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. H. Pirie).

THURSDAY.—C.30 P.M., Gynaecological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical Out-patient (Mr. H. W. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Operations (Mr. W. Edmunds). Clinics:—Medical Out-patient (Dr. A. G. Auld); Bye (Mr. R. P. Brooks); Skin (Dr. G. N. Meachen). 3 P.M., Medical In-patient (Dr. R. M. Leslie). (Dr. G. Leslie).

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TUESDAY.—3.45 P.M., Lecture:—Mr. Stuart-Low: Accessory Sinuses.
FRIDAY.—3.45 P.M., Lecture:—Mr. Stuart-Low: Accessory Sinuses.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

Monday.—4 P.M., Lecture: Dr. G. Holmes: Clinical Anatomy of the Nervous System—The Cerebellum and the Mid-brain. TUESDAY.—3.30 P.M., Clinical Lecture: Dr. Ormerod: Tabes. FRIDAY.—3.30 P.M., Clinical Lecture:—Mr. Sargent: Surgery of the Nervous System

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WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W.

MONDAY.—3 P.M., Clinical Demonstration: Dr. H. Campbell.
TUESDAY.—5 P.M., Clinical Demonstration:—Dr. J. Mackenzle.
WEDNESDAY.—3 P.M., Clinical Demonstration:—Dr. F. Palmer.
THURSDAY.—3 P.M., Clinical Demonstration:—Dr. T. D. Savill.
PRIDAY.—2 P.M., Clinical Demonstration:—Dr. P. Stewart. 5.30 P.M.,
Clinical Demonstration: Dr. E. Macnamara.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicest square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Syphilis: History and Primary Invasion (Constitutional and Local). Eruptions, Ery-thematous: I., Macular; and II., Maculo-Papular.

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METROPOLITAN HOSPITALS.

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METROPOLITAN HOSPITALS.

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Oct.	22 23 24 25 26 27 28	30·22 29·93 23·66 29·88 29·59 29·46 29·58	S.W. S.W. W. N.W. N.E. N.E.	0.09 0.02 0.03 0.61 0.47	83 91 95 90 51 47 53	60 63 51 52 49 47	48 52 51 41 40 44 45	50 58 50 41 43 45 44	52 59 54 43 44 46 46	Overcast Cloudy Cloudy Fine Raining Raining Overcast

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MR. PRESIDENT AND GENTLEMEN,—I trust I may with some propriety in this year of the Darwin centenary ask you to consider with me the significance of Darwin's great discovery for medical thought and practice. The subject is large and can on this occasion be dealt with only in outline. The field which I shall ask you to traverse is a well-trodden one, but I believe its fruitfulness is not yet exhausted. Darwin's work on "The Origin of Species" contained, as Helmholtz said, "an essentially new creative thought," a thought, I venture to add, which is still fertile, still seminal, still full of suggestion and guidance for all whose labours lie in the field of biology.

The relation of the science and art of medicine to the higher thought of the day must always be a matter of interest and importance. Medicine is coloured by that thought; its postulates, prepossessions, and theories are modified by it; in its degree it contributes to that thought. When we get from the facts of science to the truths of science, to emphasise a pregnant distinction, our thinking is modified, stimulated, or deflected to an important extent by the intellectual atmosphere in which we live. A notable instance in point is afforded by the Father of Medicine—Hippocrates. In the Homeric poems everything is miraculous. The storm, the sunshine, shipwreck, plague, blight, sickness, victory, defeat—everything is due to the direct interposition of supernatural powers. "Every event," as the late James Adam said, "is a theophany." The conception of natural law has not yet arisen. How different is the atmosphere of the works of Hippocrates. Here, amidst much that is crude and empirical, there is a genuine recognition that in the field of disease events follow a natural sequence, that effects are proportionate to causes, that order reigns, and that our business is to investigate that order. Between Homer and Hippocrates had intervened the great school of the Ionian physicists from Thales to Democritus, physical science had seen its dim and feeble dawn, the lineal succession was opened which was one day to include the names of Copernicus and Galileo, of Leibnitz and Newton, of Darwin and Wallace. The comparative failure of the successors of Galen to advance the art of medicine, and the barrenness of our art during the many hundred years during which their influence reigned supreme, were due in large measure to the false philosophy which lay at the root of the Galenic system, to the predominance of metaphysical theory over observation and experiment. rapid advance of medical science in modern times has coincided with the progress of physical and biological science in general, in part because science furnishes medicine with instruments of precision and methods of research, but perhaps even more because it creates the atmosphere in which medicine can flourish and develop. The reaction of one branch of science upon another branch at the present day is both potent and prompt.

I need not inform you that the conception of evolution existed long before Darwin and goes back to the very dawn of science. It is said to occur in the sacred books of the Vedas; it was the central thought of the philosophy of Heraclitus; it is found in the works of Aristotle, and we can trace it through a long succession of thinkers, including Bacon, Descartes, Leibnitz, Hume, Kant, Goethe, Buffon, Geoffrey St. Hilaire, Erasmus Darwin, and Lamarck. It is interesting to note that one of the most notable precursors of Darwin was a member of our own profession—Dr. James Cowles Prichard of Bristol. Writing in the year 1826, Prichard clearly recognised the existence of organic evolution; he fully apprehended that domesticated races of animals and plants have been produced by selection by man

and not by the influence of environment; he recognised the operation of natural selection, though he misinterpreted its range and importance; and, most curious of all, he recognised the difference between acquired and congenital characters and argued for the transmissibility of the latter and the non-transmissibility of the former-a view reached independently half a century later by Weismann and now usually associated with his name. Darwin did not discover evolution. He discovered its leading law, and by a long series of observations, experiments, and reflections, unparalleled in the history of science, converted the brilliant guesses of earlier inquirers into an assured truth and an established principle. "We claim for Darwin," says Alfred Russel Wallace, "that he is the Newton of natural history, and that, just as surely as that the discovery and demonstration by Newton of the law of gravitation established order in place of chaos and laid a sure foundation for all future study of the starry heavens, so surely has Darwin, by his discovery of the law of natural selection and his demonstration of the great principle of the preservation of useful variations in the struggle for life, not only thrown a flood of light on the process of development of the whole organic world, but also established a firm foundation for all future study of nature. The conception that the organic world is the scene of an incessant struggle, of a keen vital competition in which the fittest survive-i.e., the fittest for their environment in the capacity to obtain food, resist their enemies, and propagate their kind—while the unfit perish, has been recognised as the fundamental law of life, and the demonstration of this principle we owe to Darwin and to Wallace. As Weismann says, this principle "has become the basis of the science of life," it "has conquered the world," and has become so inwrought in the texture of our thought that it is now practically impossible to think of any biological problem except in terms of evolution. That any of the fundamental features of the Darwinian doctrine have been subverted by 50 years of inquiry and controversy is not to my mind a tenable proposition. It is true that some of the subordinate features of that doctrine remain open questionshow far, for example, use and disuse have operated in producing organic changes, what weight is to be assigned to the influence of the environment—a point upon which careful readers of the works of Darwin will see that his mind wavered from time to time-what is the precise significance and area of operation of sexual selection, whether acquired characters are inherited or not, how far the Mutationism of De Vries and others operates instead of slow and almost imperceptible change. On these points finality has not yet been attained, but their solution—whatever it may be—will not invalidate the Darwinian doctrine. The general tendency of inquiry since Darwin's time has been, upon the whole, to strengthen the claim of Natural Selection to be regarded as the great law of organic life, to show how wide its range, how subtle its operations, and to minimise the importance of othes factors. To take an example—at first sight nothing can be more obvious than to attribute to the effect of disuse the loss of sight by fish, crabs, and rats inhabit-ing the dark caves of Kentucky and Carniola. But another view is at least tenable. When, owing to the absence of light the faculty of sight ceased to be of utility to these creatures. Natural Selection, of which the function is to keep every organ which is of use to any creature up to the mark, ceased to operate, and it is a fundamental law that any organ withdrawn from the conservative action of natural selection tends to degenerate. The controversy especially associated with the name of Weismann, whether acquired characters are inherited or not, is one of vast and far-reaching importance for practitioners of medicine. Weismann, as you are aware, holds that in all organisms there are two kinds of plasm, the somatic and the germinal, that the permanent germ-plasm passes unchanged through a series of generations and is not affected, or but little affected, by environmental influences, which affect the somatic plasm; that modifications produced upon the somatic plasm by the environment and by use or disuse are practically limited to the individual and not transmitted to the offspring, and that hence no characters except those predetermined in the germ are available for evolution. This question is too large to be discussed at any length on this occasion. Medical opinion has been to a large extent opposed to the views of Weismann, but it must be admitted that he has succeeded in throwing great doubt on the transmissibility of acquired characters, a doctrine which Darwin

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be possible.

assumed as too obvious to require demonstration. Most of the supposed cases of such transmission are apparent rather than real. Syphilis seems a crucial case in point, hereditary syphilis being one of the most familiar of phenomena. But it is now practically certain that this is not a case of inheritance at all, in the strict sense of the term, the true explanation of the facts being an ante-natal infection of the ovum, usually from the maternal side. Whether tuberculosis is ever directly conveyed from parent to child is still doubtful, but if such transmission were proved the most probable explanation would be the direct inoculation of the embryo and not inheritance. To disprove Weismann's doctrine, we should require to show that mutilations or the results of training, exercise, or education, or acquired diseases, reappeared in the offspring as the result of heredity. has not been hitherto conclusively shown. The problem is one which has great interest for us, and medical observers might contribute to its solution. May I suggest a case in point where evidence from the side of medicine might be available? In a certain proportion of cases neurasthenia is brought on by over-study, anxiety, overwork, want of sleep, excess of some kind, in persons where no congenital tendency to nervous disease can be suspected. Is such neurasthenia transmitted either as neurasthenia or some allied condition? The question is worthy of attention and an answer ought to

Darwin as a scientific worker presents us with a model good for all time, and worthy of admiration and imitation. "My success as a man of science, whatever this may have amounted to," he tells us, "has been determined by complex and diversified mental qualities and conditions. Of these the most important have been a love of science, unbounded patience in long reflecting over any subject, industry in observing and collecting facts, and a fair share of invention and common sense." In another place he says, "Whatever I have done in science has solely been by long pondering, patience and industry." This is altogether too modest an estimate. Darwin, in point of fact, possessed in a supreme degree two faculties rarely present in perfection in the same individual-viz., immense industry and accuracy in the accumulation of facts and a daring originality of speculation, coupled with much caution in drawing any final conclusions. He had the power of keeping any subject more or less before him for a great many years. He was an indomitable theoriser and held that "without speculation there is no good and original observation." Again he says. "I cannot resist original observation." Again he says, "I cannot resist forming a hypothesis upon every subject." The essential fairness and integrity of his mind is shown by the following passage: "I had also during many years followed a golden rule—namely, that whenever a published fact, a new observation or thought came across me which was opposed to my general results, to make a memorandum of it without fail and at once, for I have found by experience that such facts and thoughts were far more apt to escape from the memory than favourable ones.'

May I suggest that in much of the above there is a wholesome lesson for ourselves? That we should be diligent, patient and thorough in the collection of facts goes without saying. That we should keep those facts for long periods, even for years, before our minds before drawing, still less publishing, our conclusions will seem a hard saying to the contributors to periodical medical literature. Perhaps, indeed, such a rule is a counsel of perfection, hardly possible to the average man. But I would ask you to note the high place assigned by Darwin to theorising and speculation in This may seem a dangerous doctrine, but I am convinced that it is a sound one. Medical science is to-day overweighted by the accumulation of a vast array of more or less crude and isolated facts. What we need is the illuminating generalisation, the daring hypothesis, to coördinate facts hitherto out of relation with each other, to give perchance to science a new organon, to light the way to fresh fields of inquiry and discovery. It is the presence of this element of underlying theory or law which lends so much attractiveness to the work of Pasteur and Lister, of Koch and Metchnikoff, of Ehrlich and Wright. The bold hypothesis lights up the dark ways of nature, illumines the road already traversed, sheds light on the pathway which lies ahead.

Before proceeding, after the foregoing more or less preliminary observations, to apply the principles of Darwinism to man in health and in disease, I may be permitted to

remind you of the fundamental Laws of Growth which must guide us in our inquiries. These laws might be stated as follows: (a) the law of the perpetuation of species or of the unity of type; (b) the law of variation; (c) the law of reversion; (d) the law of atavism; (e) the law of correlation, whereby when one organ varies other organs tend to vary also; (f) the law of compensation or economy, whereby increase of growth of one organ is accompanied by diminution in growth of another organ; and (g) the law of sexual selection.

We might summarise the foregoing laws as follows: The general tendency in all living organisms is that the child shall resemble the parent in specific characters—i.e., that the unity of type shall be preserved. But variation from type is always present to a greater or less degree. Darwin thought that variation was largely due to changed conditions of life. Weismann believes that sexual reproduction is the chief cause of variation in the higher animals, including man, and Wallace shares this view. Variation is accompanied by a tendency to revert to type. Hence, notable departures from type tend to die out, but to this law there are many curious exceptions—e.g., the Ancon sheep and the numerous "sports" amongst plants which have given rise to permanent new varieties. Atavism is the law whereby the child sometimes resembles the grand-parent or the greatgrand-parent more than the parent. It may be regarded as a special case of reversion. By the law of correlation we mean that principle whereby when one organ varies another organ varies, the two organs not always being related in function. Thus white cats with blue eyes are always deaf. In certain breeds of cattle colour and susceptibility to the attacks of flies are correlated. By the law of compensation or economy we mean that principle whereby nutriment required by the overgrowth of one organ is withdrawn from another organ. It is probably in consequence of this law that the highly specialised reactions of the nervous system developed in an advanced stage of civilisation are accompanied by a decline in the birth-rate. Finally, sexual selection is undoubtedly a factor, although much uncertainty exists as to its extent of range and importance. The comparative absence of hair from the human body, especially in the female sex, has been attributed with much probability to sexual selection.

DARWINISM AND NORMAL HUMAN STRUCTURE AND FUNCTION.

Man is a member of the animal series, and it is reasonable to expect that the ordinary laws of evolution would be exemplified in his structure and in his functions. This we find to be the case. The body of man is built upon the same lines—bone for bone, muscle for muscle, artery for artery—as that of the higher apes. The comparatively few distinguishing features of the human organism have relation to three points-viz., the assumption by man of the erect posture, his acquisition of special manual dexterities, and his higher cerebration. The foot, the hand, and the fore-brain are almost the only points with regard to which the human body differs essentially from that of the quadrumana. Evolution accounts easily and adequately for these differences. Let us look at a few points less obvious than these. Why out of every score of human beings are about 19 right-handed and 1 left-handed? On any creationist hypothesis this question admits of no plausible answer, but evolution suggests a highly probable explanation of the We may fairly assume that as man developed and his functions became more specialised it was necessary that certain parts of his structure should acquire special dexterities, and that it was by the law of economy that these dexterities were concentrated upon one limb instead of being shared by both. Hence were developed the special manipulations of the right hand. But the law of variation above mentioned would suggest that in a matter of this kind evolution would not act with undeviating uniformity, but would admit of certain departures from type. And so we find, as we might have anticipated, that about 1 person in 20 is left handed. That the special dexterities of the right hand are not innate and predetermined but the result of development is shown by the fact that the left hand contains potentially the same aptitudes as the right, and these aptitudes can be successfully developed when the right hand is lost as the result of accident or disease.

explanation, first suggested I believe by Moxon, is that by the same law of economy it was in the interest of the developing organism that the centres presiding over the mechanisms of speech—the precise significance and mode of operation of these centres are not here in question-should be located in one rather than in both hemispheres. It is entirely in accord with this theory that the right side of the cerebrum should contain potential speech centres, and that these should be capable of successful and adequate development when the centres on the left side are destroyed by disease. It is also quite in line with evolutionary doctrine that the same side of the cerebrum should preside over the fine manipulations of the right hand and the complicated motor mechanisms of

Why are the teeth so often crowded together in the human jaws that the removal of some of them is often a necessity in early life? Evolution affords the probable clue. There are good grounds for concluding that the human jaws are undergoing a progressive diminution in size. This diminution should be accompanied by a corresponding diminution either in the size or number of the teeth, but it is quite in accord with experience in other departments that the two processes should not proceed pari passu. Apparently the diminution in the size of the jaws has outrun the diminution in the size or number of the teeth, and hence the overcrowded state of the jaws which we know to be common. This explanation is adequate and probable, although it might be argued that the teeth are of less utility to man now than in earlier ages, and are hence partially removed from the operation of natural selection.

Many of those whom I address must sometimes have reflected over the curious and apparently clumsy arrangement whereby our food and drink before entering the gullet have to pass over the entrance to the air passages, involving a slight but appreciable risk of foreign matters finding their way into the lungs—a risk slight in health but sometimes serious in disease. The explanation suggested by evolu-The explanation suggested by evolutionary law is that the lungs have been developed from the swim-bladder of an unknown progenitor, and that an organ originally adapted for flotation has been developed as an organ of respiration. The relation of the swim-bladder to the gullet would not have involved the same risks as the relation of the gullet to the air passages. If we accept the alternative view of the origin of the lungs—viz., that they have been developed from a pair of gill clefts—the same explanation will apply.

Why is the septum between the auricles of the heart so imperfect that the passage of blood from one chamber to the other is only just obviated in the normal individual, while patency of the foramen ovale is one of the commonest of malformations? May it not be that we have here an example of imperfect and not yet completed development? May we not expect that the present valvular arrangement for preventing the flow of blood from one auricle to another will in the course of time, under the influence of natural selection, be converted into a permanent and complete septum?

DARWINISM AND RUDIMENTARY ORGANS.

Perhaps on no subject has evolution thrown a more welcome or a more satisfying light than upon the significance of rudimentary organs. At first sight, nothing can be more puzzling than that there should be in the human body certain organs which are functionally useless to the indi-Of such organs we have the following:—(a) The panniculus carnosus, corresponding to the muscles which move the skin in the lower animals. There are some persons who possess the power of moving at will the skin of the scalp and other parts, and I believe the music-halls once possessed an artist who earned an honest livelihood by exhibitions of his power to throw plates and other articles from his head by contractions of the scalp muscles. (b) The ear muscles, functionally inactive in most individuals, but in exceptional cases capable of causing movements of the pinna, suggestive of the great importance of the movements of that organ to the lower animals. (a) The animal ear-point, a projection upon the outer fold of the ear, present in some persons and corresponding in position to the pointed ear of many animals. (d) The rudimentary nictitating membrane or plica semilunaris. (e) The vermiform appendix, functionless in man but of great importance in some of the vegetable feeders amongst the lower animals. (f) The foramen supraoondyloidean.

In addition to the above there are certain organs which seem in process of becoming rudimentary and functionless. Cutaneous hairiness is no longer of service to man, and will probably disappear under the operation of natural selection, perhaps assisted by sexual selection. The third molar or socalled wisdom teeth are probably becoming functionless. They pierce the gums late, or in some cases not at all, and they are prone to early decay. It seems probable that the sense of smell, no longer of much practical importance to civilised man, and hence removed from the action of natural selection, is becoming rudimentary. The human toes, with the exception of the great toe, which is of service in maintaining the upright posture, being no longer organs of prehension and almost functionless, are undergoing elimination.

Rudimentary organs present no difficulty to the evolutionist. They are simply belated survivals of organs once functionally important to the race, but now on their way to extinction and disappearance. No longer under the conserving influence of natural selection they are very prene to vary and to become the seat of disease. We see this law well exemplified in the case of the vermiform appendix, which is both highly variable in structure and very subject to disease.

It has been suggested that the many feet of the human intestine are simply survivals from a herbivorous progenitor and of no service to a mixed feeder like man. It has even been proposed that the aid of surgery should be invoked to curtail some of its superfluous folds, which, it is argued, are not only useless but actually a source of danger. On such a delicate subject I prefer to express no opinion. Modern surgery does not need to be stimulated to fresh fields of enterprise—least of all by a physician.

The bearing of evolution upon physiological processes opens up a wide field for reflection and speculation. We are so apt to regard these processes as fixed and final, while in reality we should regard them as fluid, variable, undergoing a process of adaptation rather than as completely adapted, imperfect but under the influence of natural selection tending towards perfection, or in some cases, perhaps, exhibiting traces of reversion. The phenomena of digestion, for example, will appeal to our intellect and imagination very differently according as we regard them as ultimate and final facts or as part of an evolutionary process. Man has gone through many phases in the matter of his food, and it is likely that he has still in this department a journey to go. Perhaps it might savour of irony to suggest that vegetarianism is a case of reversion to the habits of remote herbivorous ancestors, but the idea is one worth thinking over. When we are urged to lessen our consumption of butcher's meat and to rely more upon nuts and salads, the question arises how far carnivorous habits are for man in the natural line of development, how far he should regard himself as essentially a mixed feeder, how far reversion to the dietetic habits of earlier ages would be a gain or a retrogression. The really illuminating thought amongst these somewhat difficult problems is that the habits of man are not predetermined and final, but the result of countless generations of evolution, that they are neither wholly good nor wholly bad; that, on the one hand, they are worthy of respect as having stood the test of an immense experience, while, on the other hand, they are almost certainly destined to important modifications in the future. In this case, how-ever, as always, natural selection and adaptation to the environment will be the guiding principles to which man in his arduous march through time will be compelled to

DARWINISM AND DISEASE.

What light can evolution throw upon disease, upon its origin and course, upon the response of the organism to its assault, upon immunity and proclivity, upon the principles and results of treatment? On all these heads something might be said, but the issues thus raised are too farreaching to be adequately dealt with on the present occasion.

An inquiry into the origin of disease in the biological sense may well seem futile. How the first bacillus of tubercle or the first plasmodium of malaria came into being may be plausibly regarded as a problem as mysterious and as futile as the origin of matter or the origin of life, questions which Darwin always refused to discuss. "It is mere rubbish," he says in one of his letters, "thinking at present of the origin of life; one might as well think of the origin of matter."

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Yet the origin of life has provoked many speculations, inconclusive but not absolutely vain and sterile. The origin of a morbific micro-organism can be only dimly surmised, but evolution may help us to understand how such organisms have acquired their potency for mischief. In some cases e.g., tuberculosis—there is reason to believe that civilisation and the habits of civilised man have had much to do in conferring toxicity upon an organism comparatively innocuous under more primitive conditions of existence. Many facts of bacteriology suggest to us that organisms such as the pathogenic bacteria owe a large part of their virulence not so much, as it were, to their inherent properties as to certain conditions of growth which are only very partially known to us. If this view be sound, it will follow as an obvious corollary that tuberculosis is to be suppressed, not by destruction of the bacillus, but simply by depriving it of those conditions necessary for its growth and development.

Evolution may throw some light upon the different effects which the same etiological factors are known to cause in different individuals. Over-indulgence in eating and drinking produces in one individual gout, in another cirrhosis of the liver, in a third renal disease, in a fourth arterio-sclerosis, and so on. How are we to account for the different responses to the same stimulus? We have to assume some congenital peculiarity in the individual, the result of factors which may stretch back to a remote past and which have been developed in accord with evolutionary laws. A similar train of reflection is suggested by the facts of immunity, a subject upon which so much brilliant work has been done in recent years. The precise mechanism of immunity, the action of phagocytes, alexins, or other protective agencies need not here be dwelt upon. The effects of food, temperature, fatigue, of previous diseases, of protective inoculation whereby the specific protective substances have to be formed in the body itself, and of immunisation by transference of protective substances previously formed in antitoxic serum, are well known to you. What seems clear is that when full account has been taken of all secondary causes of immunity we are thrown back upon a factor which we may vaguely describe as "constitutional" "congenital," or as a personal peculiarity or idiosyncrasy. Why does one individual fall a ready prey to scarlet fever or diphtheria while another resists repeated exposure to contagion? It is of great interest to learn that certain protective agencies are at work, which can be, to a certain extent, recognised. But it is clear that the recognition of such agencies only pushes the problem farther back, and does not finally solve it. That the predisposition to contract infective disease, or to resist infection, runs strongly in families is a matter of daily observation. Some people, as the saying is, "catch everything that is going," others escape though equally exposed to infection, and these peculiarities are found to characterise certain stocks and strains. Again, some persons on being infected quickly develop all the usual consequences of infection, while others develop them slowly, or imperfectly, or even not at all. We are familiar with the fact that the bacillus of diphtheria may be present in the fauces of healthy individuals who have been in close contact with sufferers from the disease and no further development occur. It is probable that most of us at some time or other have received the bacillus of typhoid fever into our systems, in most cases without injurious result. I may even suggest to you that some persons have tubercle bacilli in their sputum and seem very little, if at all, the worse for their presence. These facts might be multiplied indefinitely, and they all point in one direction—viz., that when all the secondary agencies of immunity have been unveiled—and the inquiry into them is one of extraordinary interest and importance—we shall still be left with some unexplained factor, some congenital or hereditary element which has arisen in accord with evolutionary law. We have facts which suggest to us that civilised nations are undergoing a process of gradual immunisation to infective disease. When measles was first introduced into the Faroe Islands and the Fiji Islands, there was an enormous mortality, amounting in some cases to one quarter of the entire population, while subsequent epidemics have shown a much lessened virulence. In accounting for such facts there seem to be two possible theories—(1) that certain inhabitants of these islands possessed a special susceptibility to the toxin of measles, or (2) that the population as a whole in some way developed

an acquired immunity, of course to an incomplete extent, against the disease. The extraordinary virulence of Asiatic cholera when it first penetrated from its original home in Bengal to Europe and America is a phenomenon of the same category, while its declining severity in subsequent invasions, which is so often attributed solely to improved hygiene and greater caution regarding food and water, may really be due, in part, to the operation of an evolutionary law. Why are negroes so resistant to yellow fever, so susceptible to tuberculosis and small-pox? May it not be that the explanation is evolutionary, that the negro has been longer in contact with the first-mentioned disease than with the remaining two, and has hence acquired a certain degree of immunity against it? Why are Anglo-Saxons in India so much more susceptible to typhoid fever than the native inhabitants? Is it because the latter, inhabiting a country where hygienic laws are so little recognised, have developed a considerable degree of immunity? Or is it, as some affirm, that a large proportion of the native inhabitants suffer from mild attacks of typhoidfever in youth, and hence are protected during the rest of their lives? Tuberculosis is rapidly declining amongst nearly all civilised nations. Is this exclusively the result of improved hygiene, a higher range of comfort, better houses, better food, or is it, in part, the effect of a gradually developing immunity? Further, it may be asked, Are the two views really incompatible one with the other? How far is an acquired immunity due to improved methods of living? Again we may ask, Is the growing sobriety of civilised nations the result of a gradually developing immunity against the injurious effects of alcohol? Are the drunkard and the intemperate undergoing a process of slow but sure elimination?

My object is not to affirm any dogmatic opinion on these important issues, but to suggest to you that in our thinking on these matters we must take a wide and philosophic view; we must recognise that in disease great secular processes, as well as more concrete casual factors, come into view. The present generation of medical workers and observers is somewhat impatient of those conceptions of "diathesis" and "temperament," which meant so much to our predecessors. We are disposed to think that these ideas lack definiteness and concreteness, that they are too vague to be of any real utility. Yet a study of evolution in its bearing upon disease may suggest to us that these terms, vague though they are, adumbrate a great truth-viz., that in proclivity to infection and response to disease nothing is so potent as what we vaguely call "constitution," "temperament," "here-ditary tendency," and the like. We have been intent upon the "search for the microbe," a search which has already yielded brilliant results, and, it is needless to say, must be continued. But the response of the organism is an element at least as important as the presence of the toxin. In the future it may turn out that we shall be compelled to devote less attention to the seed, more attention to the soil.

Evolution is capable of throwing a flood of light upon many of the most familiar phenomena of disease. We are apt to accept these phenomena as ultimate facts, as the effects of a toxemia or of some other obvious casual factor. But it is possible to push the analysis a little deeper, to trace the true inwardness of morbid phenomena a little farther back. Let us ask the question, How does it happen that in an ordinary case of hemiplegia the arm suffers more than the leg or the face, and in the arm, why is it the finer movements of the fingers and hand should suffer more than the coarser movements of the elbow and shoulder? It is easy to answer that the reason is anatomical and relates to the seat of injury and the distribution of fibres in the internal capsule, but this explanation needs itself to be explained. Here, again, we may without extravagance invoke evolutionary law to help us. The fine manipulations of the hand and fingers are in all probability the last to be acquired by the developing organism, they are the least stable acquisitions of nervous tissue, they are the first to suffer under the shock of disease. The nervous system, as it were, most easily forgets the lesson most recently learnt, just as the old man forgets the events of yesterday while he remembers those of 50 years ago. Aptitudes recently acquired in the genetic series are less ingrained, as it were, in the nervous system than those which go back to an earlier stage of development. Dr. Hughlings Jackson long ago pointed out the order of the dissolution of function in the brain when under the influence of alcohol. The first to go are the highest faculties—judgment, memory, taste. In the next stage speech becomes affected; it becomes thick and indistinct. Next the emotions are involved; the individual becomes hilarious, maudlin, or quarrelsome. Last of all, the centres of organic life, respiration, circulation, deglutition, are affected, and death may ensue. Now, this order of events is not fortuitous. The nervous functions, under the influence of a narcotic poison undergo dissolution in a definite order, the order of development, which corresponds to the order of complexity and specialisation. It is probable that this law will be found to have a somewhat wide application in the field of disease. General paralysis of the insane is a good case in point, the elements of character and judgment usually suffering before those of voluntary movement.

That the laws of evolution and the influence of heredity throw light on the response of the organism to disease will, I think, be generally admitted. We are not wrong in attaching weight in prognosis to any known family tendency in connexion with any given case of disease. It helps us in forming some estimate of that subtle and intangible but most potent element which we vaguely call "the resisting power of the individual." In many cases of disease we give the first place in prognosis to what is termed "the observed tendency of the individual case." This is not a truism, though it may sound like one. Let me take an illustration. A patient presents himself with the signs and symptoms of slight incipient tuberculous infiltration of one apex, and the question of prognosis arises. We know that the disease may either undergo early and complete arrest, or develop to a certain extent and then undergo regressive fibrotic change, or progress to softening and excavation, or become rapidly disseminated throughout the pulmonary area. It is quite out of our power to predict with certainty which of these events will happen, but in attempting any forecast nothing is more helpful than attention to the family history, on the one hand, and, on the other hand, to "the observed tendency of the individual case," which time alone can reveal. We are dealing with the power of resistance which the individual can offer to the action of the tubercular toxins, and that power is part and parcel of the individual's heredity and constitution "-it is developmental and evolutionary.

It has been debated whether there is any such force as a vis medicatrix nature. Many have regarded the existence of this force as obviously written on the face of nature, while others have denied even its existence. Can evolution throw any light upon this question? Nothing can be more certain than that nature tends to revert to the normal. In another connexion Francis Galton calls this "the law of regression towards mediocrity"; in other words, the tendency is for the abnormal to disappear and for the unity of type to be preserved. Darwin thought that this law had a wide application and was even inclined to believe that tall men often married short women and that clever men often married silly women-nature's unconscious protest against the abnormal and unconscious striving to preserve the unity of type. If such a law exists we might argue without paradox that disease is the abnormal and that on the broad grounds of evolutionary law we might expect the tendency to be to eliminate the abnormal and to return to the normal. That tendency may, of course, be too weak successfully to resist the forces in opposition to it.

DARWINISM AND RACE PROBLEMS.

Let us now turn to a field where by general consent the influence of evolution has been potent. The "survival of the fittest "—a term first suggested by Herbert Spencer—and its correlative the "elimination of the unfit," have been generally accepted as expressions which succinctly sum up the effects of the operation of natural selection. It is important to remember that "fittest" does not mean best, either physically or ethically. It simply means fittest for the conditions of existence in any given case, most fully adapted to the environment, best able to succeed in the struggle for existence. Evolution does not necessarily involve progress, though the general law is progression from the lower to the higher, from the less to the more specialised. "Everything depends upon adaptation," says Weismann, and Höffding reminds us that "adaptation and progress are not the same." Degeneration is as truly evolutionary as progress, the upward and the downward movement being both the result of adaptation. Further, evolution does not postulate that organs and

organisms are perfectly adapted to their present needs and conditions. They may be in process of becoming perfectly adapted. Natural selection, Darwin reminds us, tends only to make each organic being as perfect as, or slightly more perfect than, the other inhabitants of the slightly more perfect than, the outer management same area with which it comes into competition. When same area with which it comes into competition. When selection," says Hugo de Vries, "acts as a sieve; it does not single out the best variations, but it simply destroys the larger number of those which are, from some cause or other, unfit for their present environment. In this way it keeps the strains up to the required standard, and in special circumstances may even improve them." The conditions of racial efficiency, as defined by the laws of evolution, would seem to be the following: (a) the race must become progressively adapted to its environment, and by environment we mean climate, food-supply, and competition in the struggle for existence; (b) there must be competition and struggle, leading to elimination of the unft, otherwise degeneration will take place; and (o) there must not be too much in-breeding, and each strain must be from time to time crossed by another and allied strain. To this last law there are, however, some curious exceptions. When we compare man with the lower animals in these regards we are at once struck with some obvious points of contrast. Man is not subject to the unrestrained operation of natural selection. He wears clothes and builds houses to protect himself from the storm and the cold. He brings food from farthest East or remotest West to make up for the deficiencies of the home supply, and he lays up stores against the day of famine. He protects the repro-ductive function by law and custom. He restrains the warlike instinct and keeps it within bounds. He prevents or cures disease, makes life possible for the feeble, the ailing, and the malformed, and even gives them the opportunity of propagating their kind. He cherishes the aged and enables them to prolong their days. By some of his laws—e.g., the law of primogeniture—he sets the principle of natural selection at defiance. In these and other ways the ordinary usages of civilised society run counter to the operation of natural law, and it becomes an anxious question whether civilisation in so doing does, or does not, contain the seeds of its own dissolution. Rousseau and his school believed that civilisation involved degeneration. Evolution was not within the purview of their thought, but we cannot evade the issue,—Does evolution strengthen the contention which these thinkers reached by a process of intuition, whether true or false?

We hear much to-day of the degeneracy of the nation, and the existence of such degeneracy is assumed by many writers. The question is, however, one of extreme complexity. It is almost impossible to obtain the data for a just comparison as regards physical fitness between the present and preceding ages. On the one hand, the ratio of defectives, including deaf and dumb, lunatics, epileptics, paralytics, infirm, &c., is said to have increased from 5.4 per 100 over 15 years in 1874 to 11.6 in 1896. On the other hand, there are some encouraging facts. The average duration of life is increasing. Some of the worst scourges of the human racetuberculosis, typhoid fever, malaria-are abating their severity, the sick-rate of our benefit societies is declining. But these facts are not irreconcilable with the possibility of

physical degeneracy.

In the absence of conclusive data on this crucial question we may ask whether any light is obtainable from the study of evolutionary law. Are there any analogies from plant or animal which may contain suggestion for us? Domestication amongst plants and animals is the analogue of civilisation amongst men. The effects of domestication are, however, exceedingly complex. In some animals—e.g., the bear family and carnivorous birds-domestication leads to sterility; in others—e.g., sheep, pigs, and barn-door fowl—domestication seems to increase fertility. Many flowers become double under cultivation and continue fertile, while other double flowers lose their power of producing seed. Some highly-bred animals develop a marked delicacy of constitution and become very liable to disease. In some plants an artificial increase in the richness of the soil tends to the production of wood-fibre rather than of flower and seed.

On the whole, the above facts do not help us. The main question remains, Does civilisation, by preserving the unfit and preventing their ruthless elimination which takes place in a state of nature, imperil the physical integrity of the race? Our marriage customs, for example, the not uncommon conjunction of youth and beauty with age and wealth, the transmission of enfeebled constitutions and sometimes of actual disease from parent to child, can such things be tolerated without grave risk to the physical welfare of humanity? Is the medical profession free from serious responsibility when it preserves those whom Nature has plainly marked out for elimination, and even enables them to transmit their unfitness to their descendants? These are not extravagant or sentimental questions. They are, on the contrary, highly practical questions, and if we so often keep them out of sight l suspect it is from an uneasy subconsciousness that they involve painful and paralysing issues.

That civilisation runs counter to natural selection is, I think, evident. It interposes artificial barriers to the free play of those forces which in a state of nature give the victory, both as regards personal existence and opportunity for perpetuating the species, to the strong, the brave, the fit. But it is not to be assumed without argument that civilisation is dependent upon natural selection. According to Lloyd Morgan, "Natural selection has long ceased to be the dominant factor in human progress." The same view is propounded by J. B. Bury in the following passage: "It may be said that, so far as concerns the actions and movements of men who are the subject of recorded history, physical environment has ceased to act mechanically, and in order to affect their actions must affect their wills first, and that this psychical character of the causal relations substantially alters the problem. Most thinkers now agree that the chief clues to the growth of civilisation must be sought in the psychological sphere. Imitation, for instance, is a principle which is probably more significant for the explanation of human development than natural selection." is the view of a historian, and it must be admitted that it contains a great deal of truth, though not the whole truth. Mankind is more dependent for its progress upon the brain of a Pasteur or a Lister, a Kelvin or a Marconi, than upon the muscles of many cricketers, footballers, or oarsmen. The puny, sickly, or deformed child, which in a state of nature would be promptly eliminated, may possess the brain of a great discoverer, poet, or statesman. Yet physical soundness can never be ignored or deemed of small significance.

If physical degeneration is going on in our midst—and who can deny the fact, however much we may differ as to the extent of the fact?—we may feel sure that it is due to some species of non-adaptation to the environment. are inclined to attribute such degeneration as exists mainly to unwholesome surroundings, bad housing, bad air, bad food, insufficient exercise, and unsuitable clothing. These factors have weight, perhaps much weight, but a study of the phenomena of evolution may well make us doubt whether they are really the heart of the problem, whether, after all, the main thing is not that we are, to a more or less extent, breeding from the wrong stock. Few men have had less reason than Darwin to retract any opinion once definitely formulated, few have been from first to last more consistent in their views, but it is clear that Darwin wavered much and wavered often as regards the weight to be assigned to external conditions—climate, food, occupation—as factors of evolution. He was at one time inclined to attribute very little weight to such conditions in comparison with natural selection; later in life he was disposed to assign greater importance to them. Some of his followers have regarded shall not attempt to pronounce, but I shall content myself with the contention that race degeneracy, where it exists, is not to be satisfactorily explained by the operation of temporary and transitory causes, but must be sought in the most profound laws of growth and survival.

Let us look at another racial problem in the light of evolutionary law—viz., infant mortality—which we are all agreed is excessive. Is infant mortality due simply to bad hygiene, unsuitable food, careless mothering, or is it in any sense the analogue of the terrific waste which we know to go on in nature? Stand under one of our forest trees and watch the clouds of pollen which fall around. How many of these granules ever reach an ovule? In a well-known passage Tennyson tells us of the sad misgivings which

the spectacle of the portentous waste in nature excited in his breast—

"Are God and Nature then at strife, That Nature lends such evil dreams? So careful of the type she seems, So careless of the single life;

That I, considering everywhere Her secret meaning in her deeds, And finding that of fifty seeds She often brings but one to bear, I falter where I firmly trod"

Tennyson understates the case. Nature exhibits an amazing, a sinister prodigality of increase and of destruction. A single flesh-fly, Wallace informs us, produces 20,000 larvæ, which reach their full size in five days, so that each parent fly may be increased ten-thousandfold in a fortnight. A pair of our common birdsthrush, blackbird, sparrow, titmouse -if allowed to live and breed unmolested, would have in ten years no less than 20,000,000 descendants. The machinery of destruction is, however, in a state of nature not less efficient than the machinery of growth and increase. It is a somewhat melancholy reflection that a similar law is at work amongst mankind. We may recognise this law without proposing to acquiesce in it. In this instance, as in others, we shall find that civilisation and natural selection run counter to each other. As civilisation advances the birth-rate falls. This is, apparently, a universal law, complicated though it may be by local conditions or national habits. The birth-rate is steadily falling amongst our own nation, and even more decidedly in France and America. In the former the fall has been sufficient practically to arrest the natural increase of population. A phenomenon of this kind, apparently world-wide in its operation, and one that could not have been anticipated, must depend on evolutionary law. Herbert Spencer is inclined to think that intellectual development and the reproductive faculty have to a certain extent an inverse ratio to each other, and that the rapid increase of the population of the world—"Even slow-breeding man," Darwin tells us, "has doubled in 25 years"-will be arrested as civilisation develops. I cannot detain you with any of the ethical problems which such a view suggests. I must content myself with pointing out how evolution seems to be operating, how profound is its influence, and how mistaken we shall probably be if we attribute such large facts as a falling birth-rate solely to temporary and wholly preventable causes.

The relation of the medical profession to the question of the propagation and preservation of the unfit raises many difficult questions which cannot be adequately considered on this occasion. The question of our responsibility to those who shall come after us, though not a new ethical problemit is found in Plato-has become a practical question only in modern times. It is a principle with which we have hence-forth to reckon. The art of medicine was for thousands of years concerned solely with the cure or relief of disease. At the present day the prevention of disease bulks hardly less largely in our thought, and this point of view indicates a distinct advance. In the future one may predict with confidence that the preservation of the purity of the race will be regarded as one of the essential tasks of the art of medicine. The whole question, it is almost needless to say, is involved in the greatest difficulty, but it will certainly force itself increasingly upon our attention. It will do so with the greater insistence if we realise that the future physical well-being of the race will be determined more by natural selection than by attention to environment, important though this latter factor may be. That the medical profession will ever in this country be invested with disciplinary powers for the regulation of marriage seems doubtful. Such control would probably be foreign to the habits of mind of the British race, but we see that attempts have been made in this direction in some of the States of the American Union, and to a lesser extent in Germany, with what degree of success I am unable to say. It seems probable that in this country we shall have to rely upon the operation of an enlightened public opinion-enlightened, as it must be, to a large extent by the influence of the medical profession.

Is the human form destined to undergo important changes in the future under the operation of evolutionary law? Are we to look for the coming of the super-man, a conception with which the thought of Nietzsche has rendered us

familiar? "What with man is the ape?" says Zarathustra. "A joke or a sore shame. Man shall be the same for Beyond-man, a joke or a sore shame." This is by no means certain. Weismann thinks it doubtful whether man may not have achieved the summit of his development both as regards physique and intellect, and is inclined to look for progress solely in the ethical sphere. Yet some of the facts adduced in this address seem to point decisively to the conclusion that the human body is destined in the course of many generations to undergo at least minor changes. The teeth, the hairy covering of portions of the body, the toes, the special senses are almost certain to undergo modification. Nor can we limit the probability of change to such parts as these. All we can say in this connexion is that the changes which will come will be the outcome of evolutionary law. Useless organs will be eliminated. Useful organs will undergo progressive adaptation to altered conditions, such as diet, climate, habit, occupation. The possibility of reversion and of degeneration will always need to be reckoned with.

A general survey of the relation of Darwinism to the science and art of medicine is likely, I think, in many ways to be salutary. It will certainly tend to breadth of view, to a philosophic appraisement of the factors with which we have to deal, to a recognition of the great underlying laws and secular processes which are related to our art. It may. perhaps, act as a damper upon enthusiasm when we realise that evolutionary change is slow and only partially under our control; but, if this be the truth, it is better for us to know and to recognise it. Medicine will gain in stability and in influence, as well as in dignity, by being in close relation with the higher thought of the day. It may in some not unimportant particulars react upon that thought. Disease becomes something more than a disagreeable and embarrassing fact when we realise how closely it is related to evolutionary processes, how vivid is the light it is capable of throwing upon evolutionary law. It even takes its place, a temporary place we may hope, in the eternal order. "Harmonious order," says Huxley, "governing eternally continuous progress; the web and woof of matter and force interweaving by slow degrees, without a broken thread, the veil which lies between us and the infinite—that universe which alone we know or can know—such is the picture which science draws of the world."

ON OXALURIA AND THE TREATMENT OF CALCIUM OXALATE DEPOSIT FROM THE URINE,

WITH A METHOD FOR THE SOLUTION OF CALCIUM OXALATE CALCULUS WHILST IN THE URINARY PASSAGES, ¹

By ROBERT MAGUIRE, M.D. Lond., B.Sc. Vict., F.R.C.P. Lond.

It is proposed to discuss in this paper: (1) Certain matters concerning the nature and mechanism of oxaluria in general; (2) a case which illustrates some of these and also oxalate stone formation, and in which it is claimed that an oxalate stone was dissolved in the urinary passages; and (3) some laboratory experiments in which the same process was successfully repeated in vitro.

It is known that the fresh normal urine contains a certain amount of oxalic acid which can be determined as such after destruction or alteration of its salts. Its amount is small and by no means easy of estimation, but has been fixed, more recently by Dunlop, at a medium of 0.0172 gramme for the 24 hours secretion. Calcium also in comparatively loose combination is present in the normal urine in quantity variously estimated at about 0.3 to 0.4 gramme in the daily output. The affinity between this acid and this base is so keen that if they exist together in solution combination must be assumed to occur unless some powerful influence should intervene. Again, calcium oxalate is so extremely insoluble in water or in a solution of ordinary salts, so dilute as is the urine, that the compound would be expected to show itself as a deposit in

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 Journal of Pathology and Bacteriology, vol. iii., p. 389.

3 Monthly Journal of Medical Science, 1849, ix., p. 943.

one of its well-known crystalline forms, octahedra or dumbbells, immediately after the urine is passed. Yet the normal person shows no such regular deposit of calcium oxalate from his urine, although from time to time those who have no other apparent departure from health, excrete urine which throws down a crystalline shower of this salt. Such deposits may be nothing more than a portion of the physiological content of the urine, extruded under the influence of illunderstood or unknown alterations of physical suspension or chemical solution. Not infrequently such showers alternate with others of crystalline uric acid, suggesting that each may have its cause in an alternating disorder of metabolism. Further, these small, vagrant, and alternating showers of calcium oxalate on the one hand, and of uric acid on the other, are at times accompanied by slight nervous and dyspeptic symptoms, scarcely severe enough to attract the attention of their subject, usually, like the deposits, of short duration, and having no apparent connexion with the general health. Yet they must be due to a disordered mechanism and in higher degree may be of more serious import. Obviously it is important to know the connexion, if any, between these symptoms and the crystalline showers, and also why the very insoluble calcium oxalate, small in amount though it be, is held up in ordinary urine, and yet at times deposited. The conditions institute the conditions are the conditions and yet at times deposited. just described do not overpass the limits of healthy variations, but may easily do so. The normal small excretion of oxalic acid, in spite of certain views to the contrary, is probably an accident or incident in the metabolism carbon, towards a higher or a more oxidised form. If there should occur such changes in the body mechanism as would cause an excessive production of calcium oxalate or its immediate precedents rather than of an otherwise developed and soluble carbon compound, then the normal means for maintaining calcium oxalate in solution in the urine would be overcome and deposit would be permanent. Calciumoxalate is practically insoluble in any solutions except those of the mineral acids, yet it may form no deposit in the presence of acid phosphate of sodium, to which the acid reaction of the urine is due. It is probably this salt which holds up from precipitation the small amount of calcium oxalate present in normal urine, and it continues to do so even if the acidity be neutralised. The exact method by which this is brought about is unknown, but I suggest that we have to do, not with an ordinary process of solution, but with the formation of a soluble double salt of the two bases. Dunlop thought that other substances in the urine might have a similar effect, but he was unable to find them. Any precipitation of oxalate of calcium in the urine, beyond the slight occasional showers mentioned above, must, I believe, be due to an exaggerated production and isgenerally accompanied by an exaggeration of the nervous and dyspeptic symptoms. The deposit and the symptoms were grouped together by Begbie³ into a "symptomen-complex" under the name of oxaluria. Usually the symptoms have been thought to be the result of the conditions. producing the deposit, but it is one object of this paper toshow that the oxaluria is sometimes at least caused by the dyspepsia, and that this in turn is produced by nervous overstrain, of which the nervous symptoms are an indication. In some cases and, as I would maintain, in that to be presently described, nervous and physical strain is the primary factor, causing atony of the stomach and colon and a dyspepsia. with obscure chemical results; the chemical changes which occur as the result of the dyspepsia then lead to metabolic disorders which result in the excessive secretion and deposit of calcium oxalate in the urine.

The association of a dyspepsia with oxalate urinary deposit has many times been insisted upon, but never, as I think, satisfactorily explained. Dunlop asserts that it is simply an acid dyspepsia with excessive secretion of hydrochloric acid, which favours the absorption of oxalic acid from foodstuffs. This assertion appears from his paper to be based on nothing more than a resemblance between the symptoms of such acid dyspepsia and those met with in oxaluria, an unreliable groundwork for an opinion. Against it is the fact that the dyspepsia which accompanies oxaluria is usually of the atonic variety, and, as in the case to be described, the stomach may be relaxed and dilated. Such a condition is not associated with excess of hydrochloric acid,

but rather with fermentation and a late dyspeptic formation of lactic, butyric, and other fatty acids from decomposition. Dunlop gives two experiments to show that also lactic acid favours the absorption of oxalic acid from foodstuffs, but the conditions of the experiments were very different from those which obtain when lactic acid is produced in a dilated stomach by decomposition and fermentation some time after a meal. On the other hand, atonic dyspepsia with its accompaniments, and also true acid dyspepsia, in by far the majority of cases, are unattended by a deposit of oxalate from the urine, no matter what the diet may be, while again oxaluria and even calcium oxalate calculus may at times occur without any symptom of dyspepsia having been perceived. For this reason I remark that the dyspepsia when present has obscure chemical results, upon which the copious literature of the subject gives absolutely no information. Yet in many cases, as in that to be discussed, a causal relation between the dyspepsia and the oxaluria can scarcely be doubted.

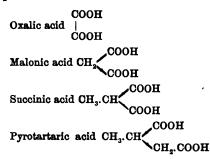
The primary source of the deposited calcium oxalate has been much discussed, and most of the numerous views upon the subject which have been published may be thus summarised: (1) Uric acid may by decomposition be transformed into oxalic acid, either within the system, or in the urine after it has passed the kidneys; (2) the oxalic acid may be produced from gelatine or mucus, either introduced with the food or formed in the stomach; (3) the oxalic acid contained in a large number of foodstuffs is simply absorbed and resecreted; and (4) deficient oxidation causes retarded metabolism of any or all the foodstuffs, and so brings about the production of oxalic acid instead of a more highly evolved compound.

All these views have been argued pro and con by many authors, mostly with insufficient facts at their disposal, but the last view, that of retarded metabolism, first put forth by Beneke,4 has been the most generally accepted, and seems to be at least the most consistent with the clinical phenomena. Of recent years, however, the third view-that the oxalate is derived from the oxalates of the foodstuffs-which was originated by Cantani, and supported in this country by Dunlop, has received renewed attention. Its principal basis seems to be that a larger number of vegetables than we suspected contain calcium oxalate, and that a purely meat diet (Cantani), a purely milk diet (Dunlop), or a diet of bread without crust (Esbach 6), will cause the disappearance from the urine of calcium oxalate deposit which had previously been found. Obviously, the premisses are at least uncertain, for it may equally and even better be argued that these diets have simply removed the dyspepsia whose peculiar chemical results have caused the formation of oxalic acid. Further, other observers, especially Auerbach, Wesley Mills, and Petterutti, have found even a considerable amount of oxalate deposit in the urine after a diet entirely devoid of Toepfer 10 contributes an interesting though not conclusive observation. He ascertained that in one of the large hospitals of Vienna not more than 5-6 per cent. of the patients showed any oxalate deposit in the urine. On certain days the general dietary for all patients contained spinach, sorrel, or other vegetables in which there is a considerable quantity of oxalic acid, yet on those days there was no increase of oxalate deposit amongst the patients.

Those who hold the "alimentary oxaluria" theory seem to assume, whenever the point is in any way mentioned at all, that the oxalate of calcium is absorbed from the stomach, passed as such into the blood, and carried as such to the kidneys, to be there simply excreted. But Owen Rees, 11 whose view of the production of oxalate from already excreted uric acid was probably wrong, held strongly that it was impossible for such an insoluble salt to exist in the blood, and here he was certainly correct. There is a mechanism for maintaining a small amount of calcium oxalate in solution in the urine,

but this does not exist in the blood, and if it did it would be powerless to maintain in solution for carrying purposes the larger amount found in the urine in oxaluria, when the mechanism of the urine itself is overpowered. Insoluble calcium oxalate can no more pass through the walls of the stomach than through those of the kidney, and still less can it exist in the blood. The presence of oxalate of calcium in the stomach, on the one hand, no matter how introduced there, and in the urine on the other, even in relative quantities, is no argument for the supposition that there is a direct connexion by the blood between the two "loci" of the salt without the intervention of an intermediary compound. Nor is it less improbable that the intermediary compound is oxalic acid itself or one of its soluble salts. There are only two facts which even apparently support such a view. Sir Alfred Garrod 12 found calcium oxalate in the serum of a blister, but his patient was already suffering from the uric acid diathesis, Bright's disease, and pleurisy. Sir Alfred Garrod himself did not conclude that the oxalic acid had existed in the blood, and there was no need for the elaborate discussion of Esbach to show that the occurrence could be otherwise explained. Cantani is said to have found oxalic acid in the blood, but as I have not had access to his original writing I cannot criticise the conditions of the

Further, in spite of one or two opinions to the contrary, the amount of oxalic acid occurring at times as a calcium salt in the urine, if present in the blood in solution, and probably therefore in combination with another base, ought to call forth the serious nervous and other phenomena of oxalic acid poisoning, while the nervous symptoms found in oxaluria are by no means of this nature. Dunlop, indeed, considers them to be identical with those of simple acid dyspepsia. Esbach himself swallowed 6 grammes of oxalic acid, and while it is certain that the whole of this was not absorbed, a considerable amount must have passed into the system, for he found in the urine no less than 0 '181 gramme, the highest determination ever made by the Neubauer method. Yet he says that he experienced no inconvenience from his huge dose, which is surely impossible if so large a quantity of oxalic acid had circulated in the blood in soluble form. A soluble salt of oxalic acid circulating in the blood must of necessity reach the tissues which contain an excess of calcium. Calcium oxalate would be formed and for want of a solvent would remain there permanently. But while this salt has been found in various secretions, it has never been detected in the tissues. Therefore, if oxalic acid is really carried in the blood, it must be in a non-poisonous form, and although we have no direct observations at our disposal concerning the nature of this form, some experi-ments by Heymans 13 have given very suggestive results. Oxalic acid is the simplest compound of its series, consisting merely of two carboxyl groups directly united. Heymans found that as the series is ascended by adding one or more methyl groups so as to form :-



the poisonous properties of oxalic acid are gradually but greatly diminished until the compound finally acts merely as an acid. Thus, on the frog the poisonous dose of oxalic acid being represented by 1 centigramme, for malonic acid it is 2-2.5, for succinic acid 4-5.5, and for pyrotartaric acid 6-6.5. Ascent in the scale of series is very common in metabolism, and may provisionally at least give us an explanation of the state in which oxalic acid is conveyed.

Whatever may be the form which oxalic acid assumes for the purposes of circulation the presence of calcium oxalate in

Zur Entwickelungsgeschichte der Oxalurie, Göttingen, 1852.
 Spezielle Pathologie und Therapie der Stoffwechselkrankheiten, 1880.

<sup>1880.

*</sup>Bulletin Général de Thèrap., 1883, civ., p. 385,

*Virchow's Archiv, 1870, B-nd lxxvii., p. 226.

*Ibid., 1885, Band xcix., p. 305.

*Bxperiment intorno alia Ossaluria, Neapoli, 1886. Also Virchow and Hirsch's J-hresbericht, 1887, ii., p. 236.

10 Wi-ner Klinik, vol. xxx., p. 89. In the present paper none but the more important references are mentioned. With the exception of the observation described above, the paper by Toepfer consists entirely of an able review of no less than 376 articles on the subject which have appeared up to 1904 and to which the exact references are given.

11 On Calculous Disease and its Consequences. London. 1856.

the urine is not a mere effect of filtration or diffusion of a pre-existent substance through an animal membrane. Certain observations by Kobert and Küssner 14 have a most important bearing upon this point. They found in experimental poisoning by oxalic acid that crystals of calcium oxalate were seen in the convoluted and straight tubes of the kidneys, where actual secretion takes place, but none in the glomeruli which are concerned chiefly with filtration and diffusion.

It would from these arguments seem probable that the effect of the dyspepsia when present is not to promote absorption of oxalates but to produce one or more substances which so alter the inner metabolism as to provide the kidneys with such material as will produce calcium oxalate.

However distressing to the patient the symptoms which accompany oxaluria may be, they are, nevertheless, not of a serious nature in themselves; but when once existent as a deposit in the urine calcium oxalate is a dangerous body, since its crystals can accumulate to form a calculus either with or without the intervention of a mucous or colloid base as insisted upon by Ord. The stone may consist entirely of calcium oxalate with colouring matter, as, I think, in the patient whose case is to be described, but more commonly the calculus contains a uric acid nucleus, or may even be composed of alternate layers of oxalate and uric acid. The latter feature reminds one of the alternating showers of the two compounds, already mentioned as occurring in simple deposit form, and this point, as will appear, is not without importance in regard to treatment. The shape of the oxalate stone is characteristic—"mulberry shaped," as it is usually called, though "spiked" would be a more correct term. Though generally of small size, it is known to be the most irritating and painful of all calculi, is recognised as the hardest with which the surgeon can have to deal in lithotrity. and has hitherto been considered out of the reach of all solvent methods—which, it must be admitted, have not always been so successful as was hoped, even with more promising materials.

I would maintain that in the following case (which illustrates some of the theoretical points mentioned above) I succeeded in dissolving an oxalate calculus whilst existent in the higher urinary passages of a patient, and with removal of

all the consequent symptoms.

The patient, aged 44 years, was an "insurance explorer," a profession which necessitates, at times, severe mental and physical fatigue. In the spring of 1907 he passed through a period of great overwork, anxiety, and sleeplessness while occupied in settling the insurance claims arising from the West Indian earthquake, and in consequence suffered from what he called "nervous dyspepsia," a diagnosis which was probably more correct than he supposed. On returning to England a year later he placed himself under the care of a physician, who treated his dyspepsia and later discovered a pronounced oxaluria—then, it is said, in the form of a dumb-bell deposit. Subsequent hæmaturia and severe pain in the right flank, extending to the right testicle, made it probable that a calculus had formed in the upper urinary passages of the right side, but several X ray examinations failed to demonstrate this. After consultation with another physician the patient was advised to go to Vichy in the month of August, where during a period of three weeks he took alkaline waters and a diet mostly composed of vegetables. Towards the end of the period he passed a small stone which proved to be composed of oxalate of calcium, but his local symptoms were in no way relieved, his dyspepsia persisted, and his general weakness, ill-health, and loss of weight had increased. He consulted me on Sept. 11th, 1908, on his return to London.

The patient looked ill and worn. He complained of feeling weak, of loss of appetite, and of flatulent dyspepsia. The bowels were irregular, at times constipated, and at times loose. The pulse was of low tension and feeble force. The tongue was coated with a white fur. The stomach and the large intestine were distended with gas, and about three hours after a meal splashing on percussion was detected over the areas of the stomach and cæcum. The patient complained of constant aching pain in the right flank, extending to the region of the sacro-iliac synchondrosis and down the line of the ureter to the right testicle and the inner part of

the right thigh. The slightest movement accentuated the pain, even the act of turning in bed, whilst to walk a hundred yards would cause a "stabbing" pain in the same parts, which made further progress impossible without rest. Micturition was frequent but not painful. The urine passed per diem varied in quantity between 35 and 45 ounces. It was neutral or slightly alkaline in reaction, had a specific gravity of 1015-1020, and on standing threw down a very copious deposit consisting of a little amorphous phosphate, but mostly of small octahedral crystals of calcium oxalate. Even on superficial examination it was evident that the amount of oxalate present could not be caused by mere deposition but must be the result of great over-production.

The urine, even that passed after rest, was reddish in colour, and a red film covered the white deposit; blood reaction was always to be obtained and red blood corpuscles were detected by the microscope. After movement, however, there was pronounced hæmaturia. The urine contained albumin, but at this time it could not be determined if this were due entirely to the hæmaturia, or independent of it. A few ureteral cells and leucocytes were found in the deposit. The right kidney could be palpated and pressed without causing pain, but there was marked tenderness along the course of the ureter, this being accentuated to actual pain at a well-defined spot in the right iliac region. No distension of the pelvis of the kidney could be detected and there was neither pain nor tenderness on the left side. At this stage of the case examination by the bowel gave no evidence of abnormality at the base of the bladder. The patient complained of feeling anxious and worried even when not in pain, and his sleep was short and disturbed, beyond the necessary awakenings caused by frequent micturition. He had general aching and vague pains in the limbs and occasionally in other parts.

A diagnosis was made of (a) oxaluria from excessive production of calcium oxalate, this in turn being the result of disordered metabolism caused by the dyspepsia; and (b) an oxalate of calcium calculus, lodged in the right ureter. symptoms and subsequent course of the case, I think, leave no doubt of the correctness of this diagnosis, even though the stone had not been detected by the X rays. It must be remembered that an oxalate stone is usually small and produces symptoms in severity out of all proportion to its size. It is therefore easily missed by the radiographer, especially if situated low in the ureter, and the one small stone which had already been passed had, indeed, escaped his notice. At our first consultation I hoped that the blood and pain might be caused by scratching of the ureter during the passage of the oxalate stone recently discharged, but the severity and persistence of the symptoms soon negatived this view. Believing that the oxaluria and atonic dyspepsia were due to a state of low vitality and deficient oxidation, I prescribed absolute rest, as nearly as possible in the open air, with a liberal diet of white meat, twice or thrice a week a little champagne, and a medicinal course of dilute nitric acid and strychnine with a tabloid of mixed digestive ferments at the beginning of each meal. An aloes and nux vomica pill each night and a dose of Carlsbad salts once a week were ordered to regulate the bowels.

The symptoms, apart from those of calculus, very soon lessened in severity. The appetite improved, the flatulence after food gradually disappeared, the stomach resumed its normal size, and splashing was no longer to be obtained in the gastric area. The colon still remained distended with gas, and generally, at our consultations, splashing could be elicited over the cæcal area. The large bowel was clearly relaxed, while the stomach had resumed its tone. Almost pari passu with the improvement in digestion, the deposit of calcium oxalate from the urine lessened, until at the end of four weeks, it was comparatively small in amount. At this time the digestion appeared to be normal, and the colon, too, was no longer distended, though constipation persisted. The symptoms of stone, however, were as severe as before, the only difference observable being in the site of the severe pain. This was now deeper in the pelvis, and on rectal pain. examination a distinct resistance could be detected to the right side of the base of the bladder, this spot also being tender. Palpation along the ureter produced only tenderness, where formerly it had caused pain. micturition pain was sometimes felt at the end of the penis, but, usually, as before, the pain radiated into the right testicle and down the inner part of the

Blood in the urine was constant and right thigh. increased, like the pain, by the slightest movement, and a constipated motion also caused pain. I formed the opinion that the stone had slipped a short distance down the ureter and had now lodged near the entrance of the ureter into the bladder, almost in the bladder walls. Copious neutral potations, hot hip-baths, massage along the course of the ureter, and a mixture of belladonna and borax taken by the mouth, all failed to give any relief. The patient, at my request, made several determined attempts to dislodge the stone by sharp walks, bearing the resulting pain as best he could, but this only made matters worse. It seemed that no treatment was available other than removal of the stone by an operation which would probably be severe. The patient, however, wished to avoid this if possible, and yet was desirous of starting on an "exploring" expedition to Mexico early in the present year.

On examining the symptoms of the case it is, I think, obvious that there must have been some chemical connexion between the gastro-intestinal dyspepsia, on the one hand, and the excessive production and deposition of calcium oxalate, on the other, such as that already discussed as being indicated in many cases of oxaluria. With some crude guesses as to the nature of this relationship I wished to make some experiments on the subject, not with any hope of benefiting the patient but merely from medical curiosity. Now, there is no "clinical" or easy method for estimating the oxalates of the urine. Neubauer's method, which I determined to use, is the simplest as it is the oldest, and the numerous improvements which have been made upon it, while increasing its accuracy, have made it more elaborate and removed it more from the use of the practising physician. But even in its original form, with its repeated precipitations and washings and final delicate drying and weighing, some days are required for each estimation, though, of course, several examinations may, with care, be proceeding at the same

I soon found, however, that such determinations as I thought would be necessary to obtain the desired information would require that the analysis of the prine should be made at least twice, possibly six times, for each daynamely, before and after each meal, and not only should the oxalates be estimated, but also the other ingredients of the urine or at least the nitrogenous contents. The composition of each meal also ought to be determined. This is impossible in ordinary practice, nor do I think it could well be done at all, unless two or more persons cooperated in the laboratory work. Probably this is the reason why we are so lacking in precise information as to oxaluria, for I find that observers have hitherto confined themselves to an estimation of the oxalic acid in the 24 hours urine. In the present case, too, the oxaluria and dyspepsia had practically disappeared before I had time to proceed far with such observations as I was able to make, or to devise some easier method of arriving at a result, which I think is quite possible. Knowledge of the chemical connexion referred to is of great importance, and ought to be capable of attainment. I should certainly attempt the solution again, possibly by simpler means, if another occasion should present itself, but so far I have no results worthy of record.

But in making the analysis by the Neubauer method there as to be noted one error of experiment in particular, which, though small, must be allowed for if the result is to be even approximately accurate. The acid phosphate of sodium normally present in the urine holds up a certain quantity of calcium oxalate, when, in the initial procedure, the oxalic acid is precipitated by calcium chloride. It therefore seemed to me feasible that if one could increase the acid phosphate of sodium in the urine by giving large quantities of the salt by the mouth one might possibly at least dissolve off some of the spikes of the oxalate calculus and so facilitate its passage. I put this before the patient as an experiment, and he determined to give it a trial before resorting to an operation. He himself had some knowledge of chemistry, and gave me every assistance in collecting specimens of urine at various times of the day. Dr. Robert Hutchison has already shown that the administration of the salt causes considerable increase in the acidity of the urine, but it was necessary to know whether this was due to the actual presence of the salt in increased amount in the urine. This was ascertained by a trial dose and will be further discussed in speaking of a later analysis. I ordered, at first half an

ounce, then one ounce, and very soon two ounces of acid phosphate of soda to be dissolved in 100 ounces of distilled water and the solution drunk at frequent intervals during the 24 hours, but as far as possible remote from meal times. For half an hour or so after each dose there was considerable uneasiness in the abdomen, mostly from flatulence and a feeling of distension, but a little essence of ginger added to the solution relieved this to some extent, and it was never unbearable considering the end in view. The patient himself tested the acidity of the urine by litmus paper immediately after each micturition and occasionally forwarded me the whole of the urine passed at each micturition throughout the The acidity was increased about half an hour after taking each dose and the small amount of calcium oxalate still being deposited seemed always to be diminished in the urine passed at this time. This observation, however, is, of course, too rough to be of any real value. The oxalate deposit disappeared entirely in about ten days. The blood in the urine gradually diminished and disappeared in about three weeks. The pain lessened gradually, but in six weeks there was no sign or symptom of stone, the patient could walk 10 to 12 miles and take severe gymnastic exercise without the slightest dis-comfort, nothing abnormal could be detected by the rectum, and he felt quite well and in his usual spirits. On deep pressure over the course of the right ureter there was still a little tenderness, and the urine contained a small amount of albumin, some leucocytes, and a few cells of the ureteral epithelium. This state, I thought, was caused by ureteral catarrh, the result of the scratching of epithelium during the passage of the spiked stone. No tube-casts were found and the pulse and heart were normal, thus eliminating kidney disease.

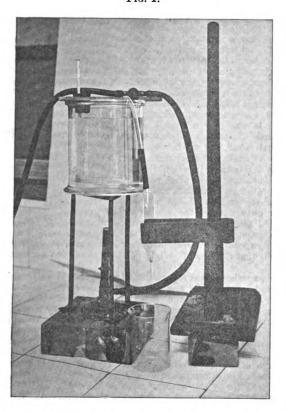
Remedies seemed to have no effect upon the condition, so all treatment was stopped, and the patient resumed his London work. He now presented himself for life insurance, putting his whole case before the company, and was accepted, of course, at a slightly increased premium, seeing that his urine was not quite normal. At the beginning of March he started for Mexico. I had previously taught him how to test the urine for albumin with the magnesiumnitric solution and he has informed me at frequent intervals of his condition. One of his late communications was that he had spent first three and afterwards four hours in the saddle on the same day, most of the time galloping hard over rough ground. He had in no way been reminded of his former trouble, and having tested his urine before and after his ride and also in the interval of rest he had found no albumin. This healthy condition has been confirmed later on several occasions. It seems to me that there can be no doubt that in this case the impacted oxalate calculus was entirely dissolved by the acid phosphate of sodium. No stone was ever passed by the urethra, and I am sure that not the slightest grit could have escaped the attention of so observant a man. The stone, then, must have been entirely composed of calcium oxalate, which is not a very common condition.

This clinical experiment was carried out in the urinary passages themselves and consequently out of sight. As a control it was desirable to repeat it outside the body in vitro under as nearly as possible the same conditions. An apparatus was therefore devised which is represented in the accompanying illustration from a photograph. (See Fig. 1.)

A large receptacle contains fluid which by means of an ordinary mercurial regulator is kept at a constant temperature of 42° C. The fluid is conducted out by a syphon tube drawn out to a point so arranged that between 45 and 50 ounces pass through in the 24 hours, and the fluid on leaving the tube was ascertained to be fairly regularly at a temperature between 38° and 39°C. The end of the syphon tube hangs in a test-tube of which the bottom has been removed and the end drawn out into a funnel whose exit is considerably smaller than the calibre of a ureter. Below this a beaker catches the exuding fluid with its contents. The arrangement thus gives an imitation of the passage of urine through a ureter from the kidney, and the beaker represents the bladder. The stone to be experimented upon should be of such a size as when dropped into the test-tube to lodge at the mouth of the funnel, and therefore larger than any likely to be found in a ureter. Any diminution of volume of the stone will be better gauged by its gradual descent in the funnel than by guessing its size with the unaided eye.

The fluid to be passed over the stone must be an imitation of the urine passed by the patient after taking a 24 hours' dose of the acid sodium phosphate, but it need not contain other ingredients of the urine than the two phosphates of soda, since, so far as we know, none other can influence the solvent action. Indeed, the total urine would certainly decompose during a long experiment and would probably foul the stone, the large receptacle, and the tubes, thus causing an intermission of the flow.

Fig. 1.



To obtain the exact amounts required of the two sodium phosphates, after the patient had recovered and had for some days ceased treatment, I analysed his 24 hours urine for the respective phosphates, and then after giving him for two days one ounce of acid sodium phosphate daily, dissolved as before in 100 ounces of distilled water, I similarly estimated the phosphates of the urine passed on the second day of the administration. Only half his former dose of phosphate was given, for there was reason to think that the former maximum dose was unnecessarily large, and also it was desirable not to exaggerate the amount of salt used in the control experiment. The amount of urine passed on the day in which no phosphate was given was 56 ounces, and after the dose of salt it was 95 ounces, and the half of this would probably pass through each ureter. The two specimens were examined for total acidity, total phosphates, and the amounts of the respective sodium phosphates. The acidity was determined by titration with a decinormal solution of sodium hydroxide, using phenol-phthalein as the indicator, and the acidity was calculated in terms of di-hydrogen sodium phosphate and also of oxalic acid. The total phosphates were determined by uranium nitrate solution, the strength of which was controlled immediately before the experiment by a standard solution of ammonium phosphate, and the amount of phosphates present was calculated in terms of phosphorus pentoxide (P₂O₅). A 10 per cent. solution of barium chloride was then added to the urine to precipitate the mono-hydrogen sodium phosphate and the remaining fluid, which contains the di-hydrogen phosphate, was once more estimated for phosphate. The result subtracted from the total phosphates gives the amount of mono-hydrogen phosphate present in terms of P2O5.

For convenience the results of the analysis are given in tabular form :-

-	First urine 56 ounces.	Second urine 95 ounces.
Total acidity—		1
As di-hydrogen sodium phosphate	0.408%	0.78%
As oxalic acid	0.21 %	0.4%
Total phosphates as P ₂ O ₅	0 095 %	0.3375%
Di-hydrogen sodium phosphate-		
(NaH ₂ PO ₄) as P ₂ O ₅	0.047 %	0.223 %
Mono-hydrogen sodium phosphate-		
(Na ₂ H PO ₄) as P ₂ O ₅	0.048 %	0.1145%
Total amount in 24 hours of—		
NaH ₂ PO ₄	0.79 gramme.	6.35 grammes
Na ₂ H PO ₄	0.8	3.26 ,,

In these figures there are certain points worth attention before proceeding further.

1. The total amount of phosphates passed in 24 hours in the first specimen, which is presumably normal urine and which is estimated at 1·59 grammes (24·5 grains), seems very small when compared with the relative figures given in the text-books, such as 3·5 grammes in terms of P₂O₅ (Neubauer and Vogel) and 48·8 grains as salts (Parkes). I am certain that the older analyses are all vitiated by the fact that a stock solution of uranium nitrate was used for the analysis. Even recent handbooks give no warning against this error. But a solution of uranium nitrate rapidly changes on keeping, losing its power of precipitating phosphates, and unless its strength is controlled immediately before each experiment by a standard solution of ammonium phosphate, as was done in the estimations quoted in the table, the phosphates in the fluid to be tested will surely be over-estimated.

2. As previously pointed out by Dr. Hutchison, the total acidity is greatly increased in spite of the dilution of the urine. In fact, the percentage of acidity is as nearly as possible doubled.

3. The acid sodium phosphate administered by the mouth actually appears as such in the urine.

4. The amount of di-hydrogen phosphates in the urine is only a small proportion of that administered. Doubtless much of the salt passed away by the bowels, but some of the difference is to be explained by the impurity of the drug as now dispensed, as will be presently mentioned.

5. The mono-hydrogen phosphate of the urine is also greatly increased in amount. This is partly accounted for by the increased amount of fluid washing phosphate out of the tissues, but mainly it must be ascribed to a change in passing through the body of di-hydrogen into mono-hydrogen phosphate.

To ascertain the strength of solution required for the experiment, the percentage of phosphorus pentoxide (P_2O_5) found in the analyses must be translated into terms of dihydrogen and mono-hydrogen sodium phosphate respectively, and remembering that the molecule of P_2O_5 will form 2 molecules of each of the salts, we arrive at the composition of the required solution as:—

 $5 \cdot 35$ grammes of anhydrous NaH₂PO₄, $3 \cdot 25$ grammes of anhydrous Na₂HPO₄, with $\frac{95}{2}$ ounces = 1420 c.c. of distilled water.

But in attempting to prepare a solution, containing this proportion of the respective phosphates, a difficulty arose which brought to light a fact important to pharmacists and, indeed, also to those who may prescribe the di-hydrogen sodium phosphate. The amounts as estimated necessarily refer to the theoretically pure and anhydrous salts, while those which are dispensed contain water of crystallisation. It is easy to drive off this water, but the anhydrous salts are very hydroscopic and difficult to manipulate, while in the process of dehydration there is some risk of transforming a portion of the salts into the pyro-phosphate which has a greatly higher molecular weight. One may allow for the water of crystallisation, and there is no difficulty in doing this in the case of the mono-hydrogen phosphate. This is a pharmacopæial preparation and must perforce contain 12 molecules of H₂O. The text-books say that the di-hydrogen

sodium phosphate should have but one such molecule, but it is obvious from the appearance of the salt as supplied by the pharmacists that it must contain a great deal more. I applied to Mr. Caines of Messrs. Squire and Sons for information upon this, and he found that the compound contained 20 per cent. of H₂O and probably more, an amount inconsistent with a pure di-hydrogen phosphate, and on analysis he found in it some mono-hydrogen phosphate with an important amount of sodium sulphate. 13 When given by the mouth this mixture of salts would be separated into its several parts, but clearly the total weight of the compound administered would not represent the amount of dihydrogen sodium phosphate desired for the experimental solution, while the sodium sulphate in so large a dose might cause unpleasant symptoms. The mono-hydrogen sodium phosphate of the Pharmacopæia will serve for our purpose when calculation is made of its 12 molecules of water of crystallisation, but the di-hydrogen phosphate must be prepared in fresh solution by neutralising phosphoric acid with sodium hydroxide according to the formula-

$$NaHO + H_3PO_4 = NaH_2PO_4 + H_2O$$
. It is thereby found that the correct proportions ought to

be obtained by the following procedure: Weigh cut 6.6 grammes of H_3PO_4 Conc. B.P.; add 45 c.c. of $\frac{N}{N}$ NaHO; make up to 100 c.c. with distilled water; dissolve in the liquid 8.2 grammes of Na_2HPO_4 , $12 H_2O$; and make up to 142 c.c. Each volume of this solution diluted with sufficient distilled water to produce 10 volumes ought to give a solution of the same respective strengths of the phosphates

acid sodium phosphate. As a control the experimental solution was analysed in the same way as the original urine and gave: Total acidity = $5 \cdot 3$ grammes NaH₂PO₄; total phosphates = $3 \cdot 337$ grammes P₂O₅; NaH₂PO₄ = $1 \cdot 775$ grammes P₂O₅; Na₂HPO₄ = $1 \cdot 562$ grammes P₂O₅, showing that the solution was as nearly as

as were found in the urine after the administration of the

possible that required.

Mr. P. J. Freyer kindly provided me with an oxalate calculus which he had removed from the bladder, the photograph of which appears below. It was larger than any which could probably be found in a ureter, and after drying weighed 0.442 gramme. This was placed in the apparatus and treated by the phosphate solution for six weeks, the same period during which the patient was under similar treatment. The stone was then obviously smaller, had changed in colour and shape, and had slipped down the funnel into a part much smaller in calibre than a ureter. In the photograph of the apparatus it can be dimly seen. It was of such a size and shape as would be easily passed through the whole of the urinary passages, and possibly even discharged unperceived by an ordinary patient. The solvent process had become very slow in the last few days. After being dried the stone weighed 0.08 gramme. The photographs of the stone before and after the experiment are here given.

Fig. 2.



Calculus before experiment.





Calculus after experiment.

The remnant of the stone was immersed in acetic acid for 24 hours to remove any phosphates, but this caused no apparent change. It was then similarly immersed in hydrochloric acid for the same period to remove any remaining oxalate of calcium, and this process caused the stone to shrink to apparently half the size, and after washing and drying it weighed 0.032 gramme. The more powerful hydrochloric acid solvent is, of course, inadmissible in the

living passages, but I believe that the same great shrinkage would have been effected by a more prolonged action of the phosphate solvent. The remaining portion of the stone was then powdered. A part treated by liquor potassæ dissolved completely. The remainder dissolved in strong nitric acid on heating, and after evaporation gave with liquor ammoniæ the characteristic murexide reaction of uric acid. Clearly, then, we had to do with a uric acid nucleus upon which the oxalate stone had been built.

It remains to prove that the calcium oxalate of the stone had actually been dissolved, for it might be objected that the stone had only been disintegrated by the 1365 ounces of fluid which had passed over it, or that the alkali in the fluid had dissolved a uric acid framework. To detect oxalic acid in so dilute a solution as that which dripped from the test-tube funnel would manifestly be practically impossible. But the answer to the question is given by two observations.

A certain amount of very fine débris, almost dust, had been washed away from the stone. In the patient this would have been passed imperceptibly from the bladder, but in the experiment the whole had collected in the beaker below the funnel, and had been soaked for six weeks in the test solution. It was now collected on a weighed filter paper. It obviously contained the dark-brown colouring matter of the original stone and as it would be difficult to analyse so small a quantity and separate mineral from organic matters, it was determined to weigh it after incinerating to destroy organic matter. The filter paper with residue was therefore incinerated on platinum foil, and the weight of the whole minus the weight of the foil with a similarly incinerated paper gave that of the ash as 0.129 gramme. Doubtless some of this is due to the impurities which would fall into the apparatus from the air of the laboratory during a six weeks' exposure, but even including this source of error it is obvious that the loss of weight of the stone is not accounted for.

The experiment was repeated with a uric acid stone actually removed from a ureter and for which again I am indebted to Mr. Freyer. Before the experiment this weighed 0·32 gramme and it was treated in the apparatus by a similar solution of phosphates, but for this experiment the corresponding salts of potassium were used instead of those of sodium, as being more favourable to the solution of uric acid. At the end of three weeks the stone was paler, but to the eye otherwise unchanged, and it now weighed 0·29 gramme. The difference in weight is no more than could be accounted for by the washing away of colouring matter and it must be assumed that no uric acid was dissolved. Again for convenience the results of the experiments are given in tabular form:—

 Weight of oxalate stone before experiment 0.442 gramme.
 0.442 gramme.

 ,, remnant of oxalate stone after experiment 0.08 ,,
 ,,

 , remnant of oxalate stone after treatment with A and HCl 0.032 ,,
 0.032 ,,

 , débris after incineration 0.129 ,,
 0.32 ,,

 , uric acid stone before experiment 0.32 ,,
 0.32 ,,

 , uric acid stone after experiment 0.29 ,,
 0.32 ,,

Therefore, the thesis is, I think, proved that a calcium oxalate calculus can be dissolved both outside the body and in living urinary passages by acid phosphate of sodium in such a strength of solution as can be produced in the urine of the human subject by the administration per os of an easily supportable dose of the salt. Since in the laboratory experiment successful solution was obtained by such a strength of phosphates as was determined in the urine after the administration of but 1 ounce per diem of acid phosphate, it would seem unnecessary to exceed this amount as a dose, and thus the more disturbing but still bearable effects of 2 ounces, which my patient actually took, may be avoided. It would be desirable that a pure acid phosphate of sodium should if possible be used instead of the mixed compound now dispensed as such. Further, it must be remembered that a calcium oxalate calculus rarely consists of that salt alone, although in all probability it did so in the case described, thus explaining why no residue was passed. The stone used in the laboratory experiment had merely a uric acid nucleus, which when deprived of the surrounding oxalate would have caused no trouble in the urinary passages. But it is well known that stones occasionally consist of alternate layers of oxalate and of uric acid. It is conceivable, therefore, that in attempting to dissolve a stone one might have to alternate the solvent, removing the

¹⁵ I understand that Mr. Caines is now investigating this point and that his results will be communicated to the Pharmaceutical Society.

oxalate by acid phosphate of sodium, and then trying to dissolve the uric acid by giving alkaline potassium salts, as recommended by Sir William Roberts.

Finally, I would recommend that in all cases of prolonged deposition of calcium oxalate in the urine occasional doses of acid phosphate of sodium should be given to dissolve the deposit and so prevent the formation of a calculus. "nervous" dyspepsia were the cause of the condition the phosphate so given would do no harm, but whether, if given continuously, it would influence the production as well as the deposition of oxalate is a matter which is worthy of investigation, but on which I have as yet no information to communicate.

Seymour-street, W.

A CASE OF LATE TRAUMATIC SUBDURAL HÆMORRHAGE; TRAUMATIC LATE APOPLEXY.*

BY A. H. MILLER, M.A., M.B., B.C. CANTAB., M.R.C.P. LOND.

THE term traumatic late apoplexy, first introduced by the late Professor Bollinger of Munich in 1891, has been applied by most writers from abroad, in reference to this subject, to those cases of late traumatic subdural hæmorrhage which are distinguished by the following points: (1) The injury to the head, which, though it may be severe, need not necessarily lead to unconsciousness; (2) the latent period that is to say, the considerable interval of time, occurring before the onset of grave symptoms, during which the patient may continue, more or less, with his usual mode of life till the serious symptoms set in, more or less suddenly, usually ending in death; and (3) the presence of hæmorrhage under the dura mater from a lesion of the brain. Such cases are rare, but they are to be found in the collection of 1/2 cases of traumatic subdural hæmorrhage by Bowen 1 It has been said (Lambert 2) that previous to the year 1891 nothing was known, or rather that there were very feeble ideas on the subject of late cerebral hæmorrhage of traumatic Bollinger,3 in his original paper, endeavoured, origin. by bringing forward 4 cases, to support from a clinical point of view what Duret had found in his experiments on animals. Duret, by means of blows on the head and injections of fluids into the cranium, produced lacerations, traumatic foci of softening in the regions of the lateral ventricles, aqueduct of Sylvius, and fourth ventricle. And he took the view that by blows on the head the lateral ventricles are compressed and the cerebro-spinal fluid is driven from the lateral ventricles into the third and fourth, and at those places which are most narrow the lesions occur, being caused by the rush of the cerebro-spinal fluid.

The necropsy of Bollinger's cases showed essentially, according to him, lesions in the regions such as have just been described. His cases are distinguished by the following features: (1) Though there was an injury to the head, yet consciousness was preserved in all his cases; (2) the patients continued more or less with their ordinary mode of life till the serious symptoms set in; (3) death occurred after the time of the injury as late as, in the first case, 32 days, in the second 12 days, in the third a clear history of trauma is wanting, and in the fourth case 52 days; and (4) the necropsy showed in the first, among the cranial injuries—such as a fine fracture of the left parietal bone and an intermeningeal hæmorrhage-distension of the dura mater with blood, also changes in the ventricular canals, such as dilatation of the fourth ventricle with clotted blood in a thin layer on its walls and capillary hæmorrhages in the medulla. In the second case the necropsy showed distension of the dura mater with hæmorrhage, dilatation of the aqueduct of Sylvius, its walls and those of the fourth ventricle being lacerated. In the fourth ventricle there was a small amount of blood. In the

4 Duret : Études Expérimentales et Cliniques sur les Traumatismes Cérébraux, tome i., Paris, 1878.

third case there was a subdural hæmorrhage. There was also an "apoplectic focus" between the right temporal and occipital lobes, which had broken through into the descending horn of the right lateral ventricle ("Hämatocephalus acutissimus internus"). In the fourth case, besides a broncho-pneumonia at both bases, a cyst of softening in the floor of the fourth ventricle; there was also softening of the left side of the pons with small hæmorrhages in the adjacent

Now when Bollinger published his work it was hailed with delight as not only "bridging the gap" between what had been found by Duret experimentally on animals, and that of concussion in man, but also as furnishing an explanation for those cases where there was some doubt regarding the connexion between death and trauma, the subject for the most part being treated from the medico-legal point of view. Cases were also published as traumatic late apoplexy where it appears that the patient suffered from an ordinary spontaneous cerebral apoplexy, whilst there may or may not have been a definite trauma accompanying it; and again, cases were published as such in which, since the patient recovered, there was no necropsy to confirm the diagnosis. And last year a case was reported as "delayed apoplexy (spaetapoplexie)" which appears to be a case of right hemiplegia with motor aphasia from thrombosis 10 days after being struck on the head (Allen). But in the year 1903 Stadelmann, in an excellent article on "the late diseases of the brain after an injury to the skull," discusses the traumatic softenings of the brain, and he says in reference to brain-soltenings, which are often spontaneous in men who are getting on in years, "many writers are ready to accept this connexion between death and trauma, though many months or even years may lie between the two, and despite the fact of the subjects being already predisposed to tearings of the vessels and hæmorrhage into the brain, from nephritis and arteriosclerosis." And he says, in order to connect with some to brain-softenings, which are often spontaneous in men surety the changes of the brain with the trauma, a great number of restrictions must be complied with. With a view to this limitation he lays down his three conditions regarding these cases of traumatic late apoplexy. "1. The patient concerned must without question have been in good health, no signs of alterations in blood-vessels having existed, syphilis, nephritis, alcohol, and heart disease must have been excluded; also old people who so frequently suffer from arterio-sclerosis cannot be considered; in other words, those who can develop it (apoplexy) spontaneously. 2. The injury must have been considerable, although it does not seem necessary that it should have caused unconsciousness. 3. The symptoms of the vascular or brain lesion must have developed within a short space of time and under our own eyes. If years have intervened in which there has been no medical surveillance, I cannot determine with any kind of precise judgment a relationship between the trauma and the symptoms now appearing. These conditions will be referred to again later.

The next paper of importance was that published by Langerhans in the year 1903. In this monograph, "The Traumatic Late-Apoplexy," Langerhans attempts to demolish the whole of Bollinger's doctrine. As Allen of Philadelphia 9 gives a good and short summary of Langerhans's paper I will quote extracts from Allen's paper. He says :-

This revolutionary work [Langerhans's monograph], a most brilliant critique, might be said to have for its text the following passage which occurs in it: "Because Bollinger is the spiritual father "of the traumatic spätapoplexie, therefore I lay at once the axe to the root of the entire doctrine and set myself in opposition to the generally prevailing

entire doctrine and set myseir in opposition to the generally prevaining opinion."

He [Langerhans] says Allen—first takes issue with Bollinger on account of the title of his paper, "Ein Beitrag zur Lehre von der Gehirnerschütterung." He calls attention to the fact that Bollinger bases his arguments on Duret's experiments, in which, after blows on the head, there were found small punctiform hæmorrhages in the

^{*}A paper read before the Cambridge Medical Society, August 6th, 1909.

1 Guy's Hospital Reports, vol. lix.

1 Lambert. Pierre: Hémorragies Cérebrales tardives d'Origine Traumatique (Traumatische Spätapoplexie), Paris, 1906.

3 Bollinger, O: Ueber Traumatische Spätapoplexie, Internationale Beiträge zur Wissenschaftlichen Medizin, Virchow's Festschrift, 1891,

See case reported by Bohne in the Vereins-Bellage der Deutschen Medizinische Wochenschrift, 1903, No. 3.
 Allen, R. A.: Delayed Apoplexy (Spaetapoplexie), with report of a case, Journal of Nervous and Mental Disease, New York, vol. xxxv.,

⁷ Stadelmann: Ueber Späterkrankungen des Gehirns nach Schädeltraumen, Deutsche Medizinische Wochenschrift, 1903, No. 6.

8 Langerhans, "Die Traumatische Spätapoplexie," Berlin, 1903.

⁹ Loc. cit.

¹⁰ The term "spiritual father" was applied by Langerhans to Bollinger because he gave his idea to Bohm for an inaugural dissertation in Munich in 1889. The title of this dissertation was Bin Seitener Fall von Traumatischer Apoplexie, I.D. 1889, München. According to Langerhans this case is identical with Bollinger's first case.

aqueduct and immediate vicinity situated just beneath the ependyma, frequently the ependyma being torn. Bollinger thought that he had bridged the gap between these experimental findings of Duret and concussion of the brain. Langerhans says, in the first place, Bollinger's cases failed to show the symptoms of concussion. Moreover, as concussion does not necessarily entail the changes in the aqueduct above mentioned, and as these changes are by no means constant in their connexion with the symptom complex, therefore one must come to the conclusion that these changes are collateral in nature only, and in no sense form the anatomical basis of concussion. For these reasons Langerhans very properly concludes that Bollinger's title is a misstatement.

In dealing with Bollinger's cases Langerhans's criticisms are as follows: In Case I, the fact that there was a considerable fracture of the skull with meningeal hemorrhage makes it extremely doubtful what part, if any, the lesions of the aqueduct played. This is particularly emphasised by the fact that the microsopical examination of the brain no alteration of the blood-vessels, no area of softening, and no traumatic degeneration to account for the hemorrhage. In Case III, the injury must have been 1½ hours before death or else is merely suppositious; there was no alteration of blood-vessels and no area of softening. In Case IV, there was no spätapoplexie and no microscopical examination of the lishmus. There was, however, an area of softening in the lishmus.

in the isthmus.

The utter demolition of Bollinger's views is so complete [continues Allen] that Langerhams's simile, "die Axt an die Wurzel," is well taken. How it has been possible for the medical fraternity, usually so exacting in their demands when anything new is advanced, to accept without question these utterly fallacious lines of reasoning, the glaringly inadequate data; how it has been possible for 12 years to pass before the man [Langerhams] comes forward to fairly riddle the preposterous atructure of pseudo-reason are things which must ever remain wonderful and inexplicable in the history of medicine.

Allen, at the end of his paper, in one of his conclusions, which as he himself says are all based on theory, says: "The cerebro spinal fluid does not play a necessary part in the production of delayed apoplexy, and injury to the region of the aqueduct and fourth ventricle is a collateral circumstance of no etiological moment." Although Langerhans and Allen sought to overthrow the whole of Bollinger's work, yet Professor Oppenheim 11 of Berlin, whose authority on the nervous system is indisputable, in the last edition (1908) of his book on Nerve Diseases speaks in favour of it; he says: "Langerhans opposed very energetically Bollinger's teachings. He does not find these teachings sufficiently supported by what they found, especially the proof is wanting of the softening corresponding to Bollinger's theory in the majority of cases communicated. We still believe that we may adhere to the idea of traumatic late-apoplexy. Most of the papers that have been written on this subject are simply discussions from a medico-legal point of view of the causal connexion between trauma and death, the pathology of the cases from Bollinger's point of view being brushed aside or ignored. Whatever may be the criticisms on Bollinger's paper, yet it, I think, throws light on this

A child, aged 12 years, received an injury to the head on Oct. 9th, 1908, and died 7 weeks and 1 day later from a subdural hæmorrhage as a result of the injury. She was sent to the Salop Infirmary, Shrewsbury, on Nov. 20th, 1908, from the Eye and Ear Hospital, Shrewsbury, on account of a third and fourth nerve paralysis on the right side. With regard to the family history, the patient, except for measles in infancy, had not suffered from any previous disease. She was one of 8 children, 4 boys and 4 girls, who with this exception are all alive and well. Both the father and mother are alive and healthy. There was no history of miscarriages, no evidence of any constitutional disease as syphilis or rickets, and no history of any hæmorrhagic diathesis in the patient or her parents. She was the youngest but one in the family. As to the history of the present illness, on Oct. 9th, 1908, the patient, who was in good health, whilst walking home from school, was alleged to have been struck somewhere over the parietal region on the left side by a stone held in the hand of another little girl of the same This occurred in a childish quarrel. The stone was not thrown, but held in the hand during the act of striking. After being struck the patient did not fall; she cried a little and seemed a little dazed, but she walked home without assistance. There was no bleeding from the nose or ears, and there was apparently no cut on the head. The same evening the patient appeared to be a little drowsy, and wished to lie down on a sofa. The next morning she seemed better, though inclined to be drowsy, but was playful in the For the next fortnight she showed a little irritableness and fretfulness to her parents and she complained of pain in the head. But between the day of the accident and Oct. 16th she attended school for two half days.

On Nov. 20th the patient was admitted to the Salop Infirmary to be under the care of Dr. H. W. Gardner, whose house physician I was at the time. On admission her pulse was 100, her temperature was 98° F., and her respirations were 24. She presented a somewhat wasted appearance, her eyes were a little sunken, and she had a dry scaly skin. was a complete right third nerve paralysis, with ptosis, and pupil widely dilated, not reacting to light or accommodation, and there was also a constant flow of lacrymal fluid, tears running down the cheek and into her nose. The right fourth nerve was also com-pletely paralysed. The only movement of the eye-ball that could be obtained was that of external rota-tion, the sixth nerve being intact. There was no optic neuritis or blurring of the edges of the disc. The left eye was normal in all respects, and there were no paralyses of the other cranial nerves. The knee-jerks were present though obtained with difficulty, especially that on the right. There was no ankle-clonus and the plantar reflexes were flexor on the right and extensor on the left. No anæsthesia was noticed. Motor power of the limbs was good, but there was slight weakness on the right. The mental condition of the child was good. There was no delay in cerebration; she answered all questions readily and easily, but it seemed an effort for her to recollect past events. She did not complain of pain, but when asked she said that her head ached, though the expression on her face was placid. She was very drowsy, lying in bed always on the right side with her head under the clothes. She vomited once—that was on the day of admission. There was nothing abnormal to be noted in the heart, the lungs, or the abdomen, which, though supple, was somewhat sunken. The urine was of specific gravity 1015, acid, and a faint cloud of albumin was present. From this time to Nov. 26th, the day before her death, no noteworthy change was noticed in the patient's condition. The bowels had a slight tendency to constipation. On Nov. 24th the urine was again tested. It was of specific gravity 1030 and acid; no albumin or sugar was present. She took her nourishment well, milk and pudding diet, sitting up in bed to take it. The drowsiness and constant lacrymation continued till the day of her death. On Nov. 26th, whilst at stool, at 5.30 P.M., the patient suddenly cried out, passed her urine under her, and became semi-unconscious and she perspired freely. An hour later her pulse was 60, her respirations 15, her temperature 100°, her left pupil was semi-dilated, and she was able to answer questions. About two hours later she suddenly flexed and straightened both her arms and legs and became completely comatose and very pale. The knee-jerks disappeared and the left pupil became dilated. Later in the evening râles accumulated in the lungs, and she died without recovering consciousness at 6 A.M. on Nov. 27th. The temperature was normal during the time spent in the Salop Infirmary, except on the day of admission, when it rose to 99.20, and again on the day before her death after the first attack of hæmorrhage, when it rose to 100°. The pulse-rate varied between 80 and 90 except during the first apoplectic attack.

Four days after the accident a slight drooping of the right upper evelid was noticed, but not much note was taken of this by the parents till Oct. 26th, when the ptosis having increased, and the child not appearing well, she was taken for the first time to see a medical man. She saw Dr. R. G. C. Thornton of Oakengates, who noted paralysis of the right third nerve, but no sign of any bruising or wound of the head. The patient was then, on Oct. 31st, sent to Mr. C. G. Russ Wood of the Eye and Ear Hospital at Shrewsbury. It was noted on admission that the patient could not open her right eye and the notes state, "Optic discs nil. Total third nerve paralysis." The patient was then put to bed, and for the first week she was very drowsy, sleeping continually, but was readily roused when nourishment was given her. About the end of the first fortnight, that is, Nov. 14th, the patient got much brighter and was allowed to get up. From this date to the 20th, that is, six weeks after the injury, the patient, according to a nurse's statement, seemed quite herself again, playing and romping about with the other children. Since no active eye treatment was necessary the patient was transferred to the Salop Infirmary on the 20th. She walked with a nurse to the latter hospital, a ten minutes' walk, and during the walk the child expressed a wish to see the town.

¹¹ Oppenheim, H.: Lehrbuch der Nervenkrankheiten, p. 908, Band II., 5te Auflage, Berlin, 1908.

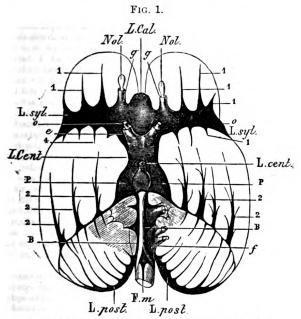
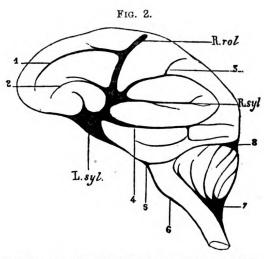
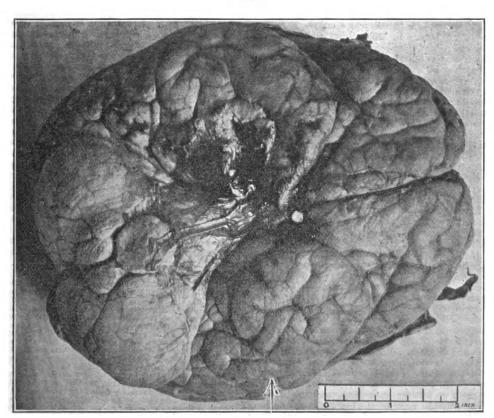


Diagram taken from Duret's "Études Expérimentales et Cliniques sur les Traumatismes Cérébraux," showing subarachnoid spaces at base of brain. Lacs arachnoidiens et Flumina de la base du cerveau. L.Cent., Lac calleux. L.syl., Lac Sylvien. P. P. Canaux péripédonculaires. B. B. Canaux basilaires. F.m. Canal médullaire antérieur. L.post., Lacs postérieurs. Norfs olfactifs. o, Nerf optique. g. e. f. Canaux arachnoïdiens accompagnant les nerfs encéphaliques. 1, 1, 2, 2, Flumina de la base du cerveau.



From Duret (op. cit.) Flumina de la fece externe des hémisphères cérébraux. R.rol., Flumen Rolandien. R.syl., Flumen Sylvien. L.syl., Lac Sylvien. 1, 2, 3, 4, Rivi des flumina. 5, 6, Canal basilaire. 7, Lac cérébelleux inférieur. 8, Lac cérébelleux supérieur.





Brain of the patient (aged 12 years) in the case detailed, showing a cavity from necrosis and softening on the inner and under surface of the right tempore-sphenoidal lobe. The arrow indicates the axis of percussion over the left parietal region.

when it dropped to 60, and just before her death it rose to 160.

A post-mortem examination was performed by the writer about 14 hours later. Rigor mortis was present. The body was that of a well-built child. There were no external marks of any injury on the scalp and there were no signs, on reflecting the scalp, of any old or recent extravasations, and there was no thickening or depression of the bone. When the skull-cap was removed the dura mater bulged all round. On cutting into the dura mater a quantity of dark, tarry blood-clot, limited below by the tentorium cerebelli, issued out. The blood had spread over the cerebral hemispheres on both sides compressing the convolutions. The brain was then removed. It was seen that there was no stripping up of the dura mater from the bone and there was no sign of any fracture, healed or otherwise, at the vertex or base of the skull. The membranes of the brain were smooth and shiny. The brain was without any signs of external injury, except on the under surface of the right temporosphenoidal lobe. On this region there was a small irregular cavity filled with blood. The walls of the cavity, irregular and of a grey colour, were formed by breaking down brain matter. The softening had begun just behind the uncus, extending on the inner side to the inner edge of the temporo-sphenoidal lobe and externally as far as the temporo-occipital sulcus. Posteriorly, it reached to about the level of the anterior third of the pons. The measurement of the cavity was 22 millimetres long, 3 millimetres broad, and 9 millimetres deep. Adherent to and on the under surface of the pia mater, at the posterior margin of the cavity, was a portion, of the size of an almond, of an ante-mortem blood-clot. There was also blood-clot on the inner side of the cavity involving the right third and fourth nerves. The subarachnoid space in the middle line was also filled with clotted blood which had burst through the arachnoid membrane in the region of the optic chiasma to spread over the whole of the cerebral hemispheres. The whole brain was then put into 10 per cent. formalin. When hardened, it was cut with a knife into a series of transverse sections, 14 in all; the cerebellum and fourth ventricle were divided antero-posteriorly. To the naked eye the softening process on the floor of the cavity was extending downwards into the white matter for about three-quarters of an inch. In this region the brain was softer and presented little grey spots of softening. The softening process was confined solely to the region of the No patches of softening, lacerations, or hæmorrhagic foci were seen in any of the ventricles, aqueduct of Sylvius, pons, or medulla, and the ventricular canals were not in the least dilated. Except for the cavity on the under surface of the right temporo-sphenoidal lobe the brain appeared to be normal. (See Fig. 3.)

The remainder of the post mortem showed nothing abnormal. The heart was healthy and there was no endocarditis. The lungs were somewhat cedematous at their bases. The kidneys were healthy, the capsules stripping easily. Paraffin sections of a portion of one of the walls of the cavity stained with hæmatoxylin and Van Giessen showed the following. Between the subarachnoid and the pia mater, where the blood-vessels running into the brain are situated, there was a considerable amount of blood. There were several vessels to be seen in this region. In some small vessels there was thrombosis, with lamination of the clot, and leucocytosis in the centre of the clot, probably indicating injury to the wall of the vessel. In another small vessel was a hyaline clot with a moderate degree of leucocytosis in the perivascular spaces surrounding it. In the cerebral tissue, just below the pia mater, was a large hæmorrhage into the substance of the brain which was compressed and necrotic, and adjacent to this, and running deeper down into the white matter, were small extravasations in the brain matter running in lines, and parallel to each other. There was a considerable amount of granular débris and degenerated and pigment cells. A search was made for bacteria by appropriate stains and by clearing the sections of the débris by passing them through absolute alcohol, ether, acetic acid, and warm KOH, but none were seen. There were no miliary aneurysms, and the walls of the large arteries at the base of the brain showed nothing abnormal, and there were no signs of any new growth either of the neuroglia or of the meninges.

This case is a valuable one in that it fulfils all the points which have been laid down with regard to these cases—viz., the

injury, which was definite, the latent period, and the interval of time between death and trauma—and it also fulfils all the conditions laid down by Stadelmann. But in this case lesions in relation to the ventricular canals were conspicuous by their absence. But there were softening and necrosis on the under surface of the temporo-sphenoidal lobe on the side opposite to that of the injury. And just as I believe Bollinger is right in the main, in ascribing the lesions in his cases to the agency of the cerebro-spinal fluid, so the lesion in this case can be ascribed to the same agency; and that this is a true case of traumatic late apoplexy in the sense of Bollinger's teachings. The proof of these statements is as follows. If the lesion in this case had been produced by contrecoup, which is described by some as taking place by the jarring of the brain on the opposite side of the bony skull, the softening and necrosis ought to have been on the external surface of the right temporo-sphenoidal lobe, but the lesion is on the inner side of the lobe. Nor was the injury on the same side of the brain as the trauma, where the left temporo-sphenoidal lobe lies in contact with the body of the sphenoid bone, for this is the part of the brain that ought to have been damaged if such an explanation be sought. Again, in this child's skull, at the base, there were no elevations of the great wing of the sphenoid, no spicules of bone, &c., projecting into the brain, but the surface covered with dura mater was quite smooth.

Now Duret 12 (see Figs. 1 and 2) by his experiments on animals formed the law: "The lesions produced by concussion occupy principally the spaces where the cerebro-spinal fluid circulates." Miles 13 of Edinburgh in 1891 followed up and practically confirmed Duret's remarkable work on concussion. At the base of the brain are the large subarachnoid spaces filled with cerebro-spinal fluid. One of the largest is the cisterna basalis, formed by the arachnoid membrane stretching across the projecting temporal lobes. Within it is the circle of Willis. From the diagrams it can be seen that the lesion on the child's brain is at the side of this sac, and that it is exactly in the line of the axis of percussion of the blow over the left parietal region. I can well imagine the wave of cerebro-spinal fluid, under the influence of the blow, distending the cisterna basalis and spreading over the inner and under surface of the right temporosphenoidal lobe and repturing the small vessels suspended in the cerebro-spinal fluid in the meshwork between the arachnoid and pia mater. 11 What the exact pathology of the softening and necrosis is, it is not easy to say. Bollinger explained his as follows. First the trauma to the head, then "traumatic degeneration," which led to "softening necrosis," to "alterations" of the vessels in consequence of the softening, and finally to the fatal apoplexy due to the altered resistance and raising of the arterial pressure.

In this case I think the lesion may be explained as follows. We know from Miles's experiments that rupture of the small vessels takes place by the wave of cerebro-spinal fluid. And it was probably this hæmorrhage which caused the ptosis to appear on the fourth day after injury. The small vessels,15 then, running into the cortex being end-arteries and therefore not anastomosing freely, being ruptured and probably thrombosed as well, together with venous thrombosis of the small vessels, cut off the nutritive supply to that area of the brain as shown by the lesion. Necrosis and softening took place in consequence of loss of nutrition to the brain substance till the external resistance to the vessels was greatly diminished. The straining at stool (in this patient),

¹³ Miles: On the Mechanism of Brain Injuries; On the Effects of Blows Over Different Parts of the Cranium, Laboratory Reports of the Royal College of Physicians of Edinburgh, vol. iv., 1892.

14 It must be remembered that each blood-vessel as it enters the brain substance has two distinct lymph spaces. (1) the adventitial lymph space of Robin between the tunica muscularis and tunica adventitia and continuous with the subarachnoid space; (2) the perivascular lymph spaces, the latter of which continues to surround the blood-vessel on to its minutest ramifications, are filled with cerebro-spinal fluid in which the blood-vessels are suspended. (Miles.)

13 With regard to the lamination of the clot in the interior of a small vessel, Professor Woodhead tells me that such lamination may result from an injury to the vessel wall itself or to damage of the vasa-vasorum of the vessel. The vasa vasorum would be very liable to rupture by any change in their external resistance such as would occur from a rush of cerebro-spinal fluid from one space into another. And rupturing of the vasa-vasorum would affect the nutrition of the vessel wall, including the intima, comparatively slowly, the clot being laid down in layers, and this would help to a count for the length of time which existed between the trauma and death.

increasing the blood pressure, caused rupture and the fatal There were probably two attacks of hæmorrhage the first in which the child was rendered semi-unconscious, and the second about two hours later causing the absolute coma and death.

Bollinger brought forward his four cases to support, from the clinical point of view, Duret's cerebro-spinal fluid theory of concussion, yet he limited his cases only to those where the lesions occurred round the ventricular canals, pons, and To my mind, he did not go far enough; he omitted to collect, or to make mention of, cases of late traumatic subdural hæmorrhage where the lesions are in relation to the spaces on the surface of the brain. And from what I can make out from reading reports of other cases published since then by others, the interest in the description of the case has always been devoted to the ventricular canals, whilst the mentioning of the relationship to the other spaces has been neglected; but I am quite open to correction in this. Michel 16 reported a case of traumatic late apoplexy where, from a blow received on the vertex anteriorly, the occipital lobes, undergoing softening and necrosis, ruptured into the lateral ventricles. Here we have the posterior extremities of the occipital lobes bathed by the superior cerebellar lake. Not only with the late but in the recent hæmorrhages we see the same thing. For instance, in a case reported by Miles 17 a patient, aged 22 years, had a blow on the occiput from falling backwards downstairs on Nov. 30th, 1889, and died on the same day. Necropsy showed "abrasion just under external occipital protuberance, in middle line; another over right parietal eminence. Skull.-No fracture of vault or Brain.—Left hemisphere very extensive clot all over convex aspect of this hemisphere, and extending on to under aspect of frontal lobe. Especially thick in region of fissure of Rolando, middle parts of ascending frontal and parietal regions being markedly compressed. Over Broca's convolution was a large contusion with extravasation into brain substance, and this extended on to middle temporo-sphenoidal convolution. On under aspect of temporosphenoidal lobe of this side was a contusion with extravasation of blood. Right hemisphere: but for engorgement of vessels of this hemisphere there was nothing abnormal.

From the diagrams of the subarachnoid spaces, both on the base and on the sides of the brain, the lesions of the brain, in Miles's case, are all in the neighbourhood of these spaces. These cases are, I think, sufficient to show that from Miles's work, as also in so many cases of head injuries-and this especially applies to where the lesions are "contre-coup," regardless of whether the symptoms come on early or late—the lesions of the brain which are present bear a distinct relationship to the subarachnoid spaces both on the base and on the sides of the brain along the course of the Sylvian and Rolandic fissures. The difference between an early or late termination of the affection depends upon such factors as the site and severity of the blow, the parts of the brain injured, and the general condition of the patient as regards other concomitant pathological processes. But why softening and necrosis leading to hæmorrhage should occur in one case and not in another I must leave to others to explain. Stadelmann applied his conditions to those who wished to connect a lesion of the brain with a trauma received some time before. His remarks have generally been added by writers on this subject of traumatic late apoplexy. But it seems to me a little artificial to hedge these cases round with so many restrictions, for I do not see why, as in Michel's case, 18 a patient with arterio-sclerosis should not come under the laws of concussion the same as a healthy person, though I suppose in some cases it is difficult to exclude a spontaneous cerebral hæmorrhage. For those who are interested in this, Kurt Mendel 10 goes into the subject fully.

In conclusion, I wish to express my thanks to Dr. Gardner, Mr. Russ Wood of Shrewsbury, and to Dr. Thornton of

Oakengates for permission to publish this case and for the use of their notes, and especially to Professor Sims Woodhead for his kindness for his suggestions for the making and in the interpretation of the sections of my case. Cambridge.

STARCH DIGESTION IN BABIES.

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It is frequently argued that because there is no starch in human milk all starch-containing foods are contra-indicated in the feeding of infants during the first few months of life. In support of this various observations on the presence or absence of a diastasic ferment in the saliva and in extracts of the salivary glands or pancreas are constantly quoted. Most of these possess almost the hoariness of antiquity, and the time has certainly arrived when we should reconsider the position. On the one hand we find physicians maintaining that no starchy food is permissible for an infant under six months of age. On the other we have the widely distributed practical experience that barley water can be used as a diluent of cows' milk during the first few days of life, as well as subsequently, without damage to the child and often with decidedly beneficial results. Probably the truth lies midway between two extremes and, as I hope to show in this paper, small quantities of starch can be given to infants and can be adequately digested and assimilated. Not much stress can be laid on the absence of starch in human milk, for when a baby is artificially fed it is put on a diet which in many respects differs from human milk, although it may contain identical percentages of the chief constituents, protein, fat, and sugar, and possess the same calorie value. It can no longer be maintained, for instance, that the caseinogen is identical in the two fluids; nor that any scheme of dilution or laboratory modification of cows' milk will render it identical with human milk. The percentage system of feeding has been tried in the balance and found wanting. It is not essential that the carbohydrate in infant feeding should be lactose. Cane sugar is often used and there is much in favour of starch in preference to this form of carbohydrate. Similarly I hope to show that our ideas on the subject of starch in infant feeding require modification and that, with proper limitation in the quantities given and the form in which it is prescribed, it is more valuable as an article of diet and a more rational diluent of cows' milk than water, gelatine solution, and such-like fluids.

The amylolytic ferment is secreted in the saliva during the early months of life. Schiffer (1872) gave infants starch paste in bags to suck for five minutes. One infant was a few minutes old and the other two were under three hours. Chemical tests showed that sugar was produced from the starch. In infants of 16 days and 3 months the change was more active. Korowin (1873) found that the juice of the parotid in the first days of life readily converted starch into sugar. Zweifel (1874) made extracts from the parotid and found that it contained an active amylolytic ferment, even before birth. Extracts of the submaxillary glands had no such action. Recently Ibrahim (1909) found the ferment in both the submaxillary and parotid glands of 22 premature and 12 new-born infants. Schilling also found the ferment in the submaxillary glands. These observations are sufficiently definite to justify the assertion that the saliva of infants at birth contains an amylolytic ferment, and that it gradually increases in activity as the infant gets older. It must not be forgotten, however, that salivary secretion is scanty in young infants and rarely appreciable before the age of two months. About 1 cubic centimetre is secreted in 20 minutes at the end of the first month of life, but at the end of the third month a similar quantity is secreted in two minutes. The activity of the ferment is not confined to the short time that the food remains in the mouth, but continues in the stomach until stopped by the acidity of the gastric juice. Compared with the action of pancreatic secretion the importance of the saliva is relatively small in early life.

The meconium contains the diastasic ferment; so, too, the stools of early infancy; one part converts one-twentieth of starch into maltose. Jacobi states that the diastasic power

Michel: Bin Beitrag zur Frage von der Sogennanten Traumatischen Spätapoplexie, Wiener Klinische Wochenschrift, 1896.
 Clinical Case 5, p. 156, Laboratory Reports of the Royal College of Physicians of Edinburgh, vol. iv.
 This patient suffered from chronic bronchitis, fatty heart, cirrhosis

of the liver, and chronic alcoholism.

19 Mendel, Kurt: Der Unfall in der Aetiologie der Nervenkrankheiten, Verlag von S. Karger, Berlin, 1907, of which there is a reprint in the Monats. f. Psychiatrie und Neurologie, vol. xxii., 1907, pp. 284-277.

of the pancreas begins in the fourth week of life and remains very feeble up to the end of the first year. He found that infusions of pancreas of infants who had lived three weeks produced no change in starch. Zweifel and Korowin found the ferment absent under the age of three weeks. Korowin states that it is not until the end of the third month of life that this secretion has any appreciable action on starch. More recently Ibrahim (1909) has found the amylolytic ferment in the pancreas of the premature and the new-born. Moro found it present in seven infants, two of whom had died at birth; Gillet and Jakubowisch have also found a diastasic ferment in the pancreas of the newly born; weak at first, but becoming rapidly more active. Reichert and Flint have brought forward evidence that another ferment capable of inverting starch is secreted by the epithelial cells of the buccal and intestinal mucosa. Heat and moisture will invert small quantities of starch without the aid of a ferment.

Experimental observations on the quantity of unchanged starch in the fæces of infants taking starch in the food have been carried out by Heubner and by Carstens on infants under two months of age, and have shown that considerable quantities of the starch were absorbed, the amount varying in different infants. Friedlander (1909) states that by a modification of Einhorn's bead test he has been able to demonstrate that newly born infants can digest starch perfectly. He used cooked flour for the test. Kerley examined the stools of 87 children under one year of age. Of 60 cases, carefully studied, starch digestion was poor or indifferent in 19 and good in 41, of which 11 were under six months of age.

Clinical experience also supports the view that weak starchy fluids can be digested and are advantageous as diluents. Jacobi has always advocated barley or oatmeal water as a diluent of milk, even in the first few weeks of life. Milk and barley water is a practically universal diet in this country for artificially fed infants. For many years I have made use of it after the second month of life in the diet of hospital out-patients with apparent benefit, though occasionally water has been found preferable. Test-tube experiments to estimate the effect of heat and attenuants on the curdling of cows' milk with acetic acid, carried out some years ago, showed that the finest curds were obtained when thin barley water was used as a diluent, and that they were finer than with plain water. There was no marked difference in the reaction to rennet in favour of barley water as a diluent. Starch is used for two purposes in infant feeding-viz., for nutrition and in order to render the curd produced in the stomach finer. As regards the latter action it has a definite effect on curdling by acid and very little on curdling by rennet. Its value in nutrition depends upon the degree of conversion of which it is capable in the alimentary tract of infants, and this depends greatly upon the form in which it is presented. A large number of physicians advocate its use even in very young infants, shortly after the second or third month of life, very often from birth. Finkelstein claims that it can be used with advantage after the second or third

The conversion of starch in the alimentary tract is not the simple process one might be tempted to conclude from the above observations. Other ferments are present which may affect its digestion, or secretion is directly influenced by a ferment which increases the activity of the pancreas. Martin and Williams (1889) showed that the bile is an auxiliary to the amylolytic action of the pancreas, possibly due to the bile salts. Pawlow and others have found in the intestinal juice a special ferment, enterokinase, which stimulates the activity of the pancreatic ferments. Apparently the pancreas, and probably also the salivary glands, can adapt their functions to the nature of the food supplied. F. A. Bainbridge (1904) published some interesting observations on the ferment lactase which inverts milk sugar into galactose and dextrose preparatory to absorption. This ferment was found by Ibrahim (1909) in the intestinal mucosa of new-born infants. Bainbridge found it present in puppies while suckling and absent in adult dogs. He did not find it in the pancreas of a new-born child, nor in those of puppies taken away from the mother and killed almost immediately after birth, but it was present in the intestinal mucosa of the puppies. Apparently the lactase is not present in the pancreas at birth, but quickly appears if milk is given. On feeding adult dogs with milk Bainbridge was able to produce the secretion of lactase

by the pancreas. This is conclusive evidence that the nature of the pancreatic secretion is adapted to the diet. Walther proved this in connexion with starch. On a diet containing equal amounts of nitrogen, one consisting of 600 cubic centimetres of milk and no starch and the other of 250 grammes of bread, the number of units of amylolytic ferment secreted was 342 for the milk meal and 1601 for the bread. It was also found that if the new diet was maintained the ferment action of the pancreatic juice became daily more and more adapted to the requirements of the food. In a prolonged experiment the pancreas was first trained to secrete a strong proteolytic juice, and its protein-digesting power was gradually reduced to nil by changing the diet from flesh to one of milk and bread. At the same time, the amylolytic ferment was increased. Pawlow states that in the same animal the ferment activity could be varied and reversed by changes in the diet.

The nature of the starch affects its value as a food, for some varieties are acted on more rapidly than others by diastasic ferments. Solera found that potato starch was changed most rapidly, and then wheat, maize, and rice starch in the order named. Malay also found that potato paste and then oat and wheat starch were the most rapidly changed. Starch is digested with difficulty unless it is previously converted by heat into "soluble starch," as in making barley water. If starch grains are mixed with hot water the granulose swells up and bursts the cellulose envelope of the grains and forms a sticky mass or starch paste. On boiling it becomes gradually thinner and forms "soluble starch, intermediate stage in the conversion of starch into dextrins and sugar. This conversion is quickly brought about by diastasic ferments. It is easy, therefore, to understand that barley water, as commonly prepared, is a cereal decoction readily capable of digestion by the infant. The perreadily capable of digestion by the initial. The percentage of starch in barley water varies with the process of preparation. Corlette (1905) found that the average percentage of starch was 2.03 in barley water prepared as follows: "Take two heaped teaspoonfuls (= 18 grammes) of pearl barley, wash it and put it in a pint of cold water; then put it on the fire and simmer till the whole is reduced to only two-thirds of a pint. This is then strained and the liquid part constitutes barley water." Maynard Ladd added This was cooked for 30 minutes and again made up to two pints. The resulting barley water contained 3.5 per cent. of starch. Holt gives the percentage of starch in barley water as 1.63. The barley water was made by adding two tablespoonfuls of barley to one quart of water and boiled continuously for six hours, keeping the quantity up to the quart by the addition of water, finally straining through fine muslin. These analyses suggest that the evil effects of starch in the food in early life are due to quantity and mode of administration, rather than to starch per se, for it has been shown that most infants can digest ordinary barley water.

Artificially-fed children are particularly prone to gastro-intestinal disturbance, whether fed on modified milk alone or with some form of starchy diluent. They are even more liable to such disturbance when the starchy preparation is increased at the expense of the milk. A starchy diet without a due supply of milk is deficient in protein, fat, and salts. So it is easy to understand that if a child is fed on thin arrowroot gruel, cornflour, or such like foods, and milk more or less omitted, it is certain to be ill quite as much from the absence of various necessary constituents as from the excess of starch. Even under such conditions as this I have known a baby remain apparently well for six months although fed entirely on thin oatmeal gruel, proving conclusively that in that particular instance there was no such thing as starch poisoning. A study of the Calorie value of foods shows that a diet of arrowroot gruel contains only about a third to a fourth of the number of Calories present in a similar quantity of human milk.

There is positive evidence that starchy food is distinctly beneficial during early life. In the treatment of acute gastro-intestinal disorders it is common practice to stop all milk and put the child entirely on a diet of barley water or rice water. Cereal decoctions are unsuitable culture media for the growth of the proteolytic bacteria on which so many cases of infantile cholera depend. Indirectly the starchy diet acts as an intestinal antiseptic. There is evidence that it is of value as a direct antiseptic, for it aids in the production of lactic acid. The treatment of gastro-intestinal

disorders by buttermilk feeding and by the lacto-bacilline treatment shows that the diet is much more effective when some starch or sugar is added to the diet.

The general conclusions from the above observations afford physiological and chemical support of the empirical use of starch in infant feeding and may be summed up shortly as follows: 1. A diastasic ferment is secreted by the salivary glands and pancreas of new-born infants and even before birth. 2. Its amount and activity are slight in the first few weeks of life and after that rapidly increase. 3. The glands, notably the pancreas, can be trained by means of a starchy diet to the secretion of an increased amount of the amylolytic ferment. There is no inherent reason why this training should not be begun shortly after birth in the case of the bottle-fed infants instead of waiting until the child has attained the age of six months, as so commonly advised on purely theoretical grounds. 4. Practical experience has shown that the usual barley water contains about 2 per cent. of starch. If mixed with an equal quantity of milk there will only be 1 per cent. of starch in the mixture. Such an amount is non-injurious and almost certainly is beneficial, for it encourages the growth of lactic acid bacilli and the formation of lactic acid. These organisms are of undoubted advantage in the prevention of the growth of proteolytic 5. If a starchy food is used in the first few weeks of life it is advisable to begin with a milk mixture which will not contain more than 0.5 per cent. of starch and to gradually increase the amount as the child gets older. Indeed, at any age when a starchy food is first given it should be in very weak solution and slowly strengthened up to as much as 3 to 5 per cent. If the stools become very acid, or if they give a distinct starch reaction, the percentage of starch in the diet must be reduced. 6. Special care must be paid to these considerations in the first two months of life because of the deficiency of salivary secretion. Further investigations may possibly show that this is a point of little importance as the pancreatic secretion may be sufficient in quantity and activity. 7. The evil effects of starch in early life are due to (a) excess; (b) its administration in the form of a more or less insoluble emulsion instead of as soluble starch; and (c) the substitution of starch for the necessary protein, fat, and salts. In other words, the mischief results from deficiency of necessary proximate principles of diet rather than from the presence of starch.

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LUNG PUNCTURE: A NEW APPLICATION OF CLINICAL PATHOLOGY.

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I .- General.

PUNCTURE of the pleura has long been practised as PUNCTURE of the pieura has long been practised as a valuable aid to diagnosis. For many years before the birth of bacteriology the procedure yielded important knowledge. But prior to the advent of the bacteriologist a "dry" puncture of the chest wall was wholly negative in its information. The needle either entered a pleural effusion or it entered the lung. If the latter, the very small amount of blood-stained fluid which was because the away by the swringe was neglected. And even brought away by the syringe was neglected. And even to-day it is the rule for this valuable material to be put aside without examination. As a matter of fact, these few drops of lung juice may yield very important positive information as to the presence of disease within the lung itself and also as to the nature of such disease. During the past four or five years I have every now and again employed this method of investigation with extremely useful and interesting results. As I can find no reference to such an application of clinical pathology I have thought it well to collect such observations as I have been able to make with regard to it.

In actual practice a diagnostic puncture of the lung may be made under two conditions: (1) a pleural effusion is suspected and the result of the puncture negatives this; or (2) no fluid is suspected in the pleural sac, but the lung is deliberately punctured for the express purpose of discovering material obtained is no less valuable in the first than in the second of these two conditions.

II. — Indications.

The indications for lung puncture will vary somewhat with the desire of the physician for accurate knowledge with regard to the condition of the patient. In brief, it may be said that the puncture is indicated: 1. In any case yielding signs of consolidation of the lung, in which careful examination of the sputum fails to reveal the nature of the disease. It is, perhaps, pushing the value of "ocular demonstration" rather far to say that lung puncture is indicated in a straightforward case of lobar pneumonia, even when there is no sputum for examination. But it should certainly be undertaken in any such case if the desired clinical course is departed from in any way to the prejudice of the patient. The puncture will frequently reveal the existence of a mixed infection (e.g., B. influenza and pneu-mococous) when this is not suspected. Two other indications 2. In abscess it is useful to obtain a specimen of pus from the actual seat of suppuration, for thereby a knowledge of the causal microbe is gained, often a matter of great difficulty or impossibility when dealing with the sputum. 3. In bronchiectases the same comment holds; the flora of the sputum is notoriously varied and difficult of interpretation.

III .- Technique.

The mode of performing the puncture follows exactly that of exploration of the pleura. For obvious reasons it is advisable to use a good-sized needle. Provided this be quite clean and sharp the patient suffers very little discomfort. And if due regard be had to the anatomy of the heart, big vessels, and diaphragm no damage is at all likely to occur. The syringe, of course, has been recently boiled and contains no disinfectant. The puncture is made at a point on the surface of the chest immediately over an area of lung yielding abnormal physical signs. The needle is inserted into the lung, the piston is withdrawn about an inch so as to keep up a gentle suction, and the needle is then slowly removed whilst the skin is supported by the finger and thumb of the left hand. As the needle leaves the chest wall two or three drops of bloody fluid are seen to spurt from it into the barrel of the syringe.

The method of dealing with the material depends somewhat upon the amount obtained. Sometimes the amount is so small that it is advisable to utilise the whole of it for purposes of cultivation of micro-organisms, the method resolving itself into one of "lung culture." If, however, the quantity admits of this, or if a cytological, rather than a bacteriological, examination is suggested from the nature of the patient's illness, films are also prepared from the material and stained as in the case of pus. In either case the needle is inserted into a little sterile salt solution, just sufficient of which is drawn up into the barrel to mix with the lung juice, and to enable this to be completely discharged. If a bacteriological examination only be decided upon the diluting fluid may well be a little sterile broth from a culture tube. The mixture of lung juice and diluting fluid is now squirted out, partly on a glass slide for film examination and partly on to the surface of an agar slope, which is incubated at 37.5°C. As the material removed from the lung is almost certain to contain a little blood, even hæmophilous microbes, such as B. influenzæ, need no other medium than ordinary agar.

IV. - Illustrative cases.

The following cases demonstrate the assistance in diagnosis and treatment afforded by lung puncture.

CASE 1. Abscess of lung following perforated duedenal ulcer.—The patient was an International football player, under the care of Mr. C. M. Hewer of Tarporley, who diagnosed perforation of a duodenal ulcer. The perforation was sutured by Mr. G. P. Newbolt of Liverpool. A week after the operation signs of pleurisy developed at the base of the right lung, with fever and severe illness. Percussion dulness followed at the seat of the pleurisy, but exploration of the pleura by needles was negative. When I saw the patient with Mr. Hewer there were marked signs of consolidation of the lung, high intermitting fever with sweats, and dilated heart. The condition of the abdomen was satisfactory. Four separate punctures with a good-sized needle failed to show fluid in the pleura. The lung juice obtained the nature of a disease process within the lung itself. The at the last puncture, however, was dealt with as above

described, and on the next morning there was seen to be a copious and pure growth of streptococcus on the agar slope. On further examination the streptococcus was found to be S. fecalis. Polyvalent anti-streptococcus serum was given liberally and undoubted benefit resulted. The consolidated lung then underwent liquefaction, and large quantities of very feetid pus were expectorated, as much as 1½ pints in the day. But the acute and alarming symptoms had passed off. Vigorous treatment in the open air, with respiratory antiseptics by the mouth and by inhalation, led to complete recovery.\(^1\) In this case the lung puncture was not performed deliberately but during the search for an empyema. But the important information obtained from the examination of the lung juice in this instance, proving as it did the presence of a pulmonary focus of infection by streptococci derived from the bowel, led me to employ the method directly in other cases where there was doubt as to the nature of the disease in the lung.

CASE 2. Abscess of lung following incomplete abortion. - A woman, aged 30 years, came under observation 14 days after a miscarriage, suffering from fever, rigors, anæmia, and shortness of breath. The uterus was curetted and treated with antiseptics without improvement. A week later signs of consolidation appeared at the base of the right lung in front. with local pain and cough. There was no sputum. Exploratory puncture of the lung drew off two or three drops of bloodstained pus, and these yielded a pure culture of Staphylo-The signs persisted and the patient grew oocous aureus. worse. An operation was advised, but it was considered that the indications for resection of a rib and exploration of the lung were insufficient. Death occurred a week after the puncture was made. Post-mortem examination showed an abscess situated in the right lower lobe of the lung close to the pleura. The pus from the abscess gave a pure culture of S. aureus.

CASE 3.—Appendioectomy; general peritonitis; pneumonia.—A child, aged 5 years, was admitted to the Great Northern Central Hospital under the care of Mr. E. C. Stabb. Laparotomy revealed a gangrenous appendix, which was removed. The child did very well until the tenth day, when signs of peritonitis and pneumonia appeared. Puncture of the lung was undertaken, and a few drops of bloody fluid were obtained which gave a copious growth of pneumococci, B. ooli, and B. influenza. The proof of the mixed infection of the lung was very striking. A dose of pneumococcus vaccine was given, but the child was obviously in a desperate condition at the time and died four days later.

Case 4. Mycosis fungoides; streptococcal and staphylococcal infection of the skin; extensive pneumonia.—A man, aged 38 years, who had suffered for several years from recurring attacks of mycosis fungoides, came under observation with a large axillary abscess due to staphylococcus infection. There were also present several superficial foci of streptococcal infection on the chest and limbs. The abscess was incised, scraped, and drained. A spreading pneumonia developed, but whether this was streptococcal or staphylococcal in origin was uncertain. Lung puncture gave a little blood-stained fluid which both in films and on culture showed abundance of Staphylococcus aureus. Two small doses of the killed staphylococcus were given as vaccine, but the condition proved to be the usual mode of termination of this uncommon skin disease.

Case 5. Erysipelas; bronchepneumonia.—An infant, aged 7 months, was admitted to the Great Northern Central Hospital under my care, suffering from extensive erysipelas of the scalp. Several small superficial abscesses developed, and from these a pure culture of Streptococous pycgenes was obtained. The condition improved under treatment by antistreptococcus serum. There developed later several vesicles on the scalp, and from these a growth of S. aureus was obtained. Patches of consolidation also appeared in the lower lobe of the right lung. Puncture of one of these areas revealed a pure staphylococcal infection. The infant was accordingly vaccinated, but without good effect.

CASE 6. Delayed resolution in pneumonia; negative lung punoture.—A young man, aged 20 years, was admitted to the Great Northern Central Hospital under my care on the second day of his illness, suffering from pneumonia, with consolidation of the right lower lobe and some associated bronchitis.

A pseudo-crisis occurred on the seventh day, but the temperature rose again on the same day, and the signs of consolidation remained unchanged. On the twenty-third day the temperature was still raised, in an intermittent fashion, and the physical signs, as well as a skiagram, showed the lung to be still hepatised. The leucocyte count was 20,000. Examination of the sputum showed no tubercle bacilli. The solid lung was punctured, and the blood-stained fluid was submitted to culture. The agar tubes remained sterile. By the twenty-sixth day the temperature was normal and the general condition was excellent. Injections of fibrolysin were given; the patient left the hospital in good health but with the lung still solid.

V. - Concinsion.

Altogether I have punctured the lung for diagnostic purposes in some 14 cases. Those above cited serve to show the kind of information that can be elicited by this mode of examination. It may possibly be found of service in suspected cases of acute pulmonary tuberculosis, in which condition sputum is so commonly absent. In one such case I punctured the affected lung, but failed to demonstrate the tubercle bacillus in films prepared from the material obtained. At a time when vaccine therapy appears to be so promising in dealing with many localised infective conditions the prompt isolation of the causal micro-organism becomes a point of paramount importance. When the affected organ is the lung the particular investigation here referred to may be the sole means of obtaining the necessary culture from which to prepare the vaccine.

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THE DYSPEPSIA OF OLD AGE.

BY W. SOLTAU FENWICK, M.D. LOND., SENIOR PHYSICIAN, THE LONDON TEMPERANCE HOSPITAL.

AFTER 65 years of age functional disorders of digestion become extremely common, and even when no abnormal symptoms exist old people usually suffer from an enfeebled or capricious appetite and find that they can only avoid indigestion by the observance of a limited dietary. As the result of a laborious statistical inquiry into the relative frequency of various forms of dyspepsia at different periods of life, Samuel Fenwick found that 21 per cent. of all persons over 65 years of age suffered more or less from chronic indigestion. My own investigations, while generally confirming this estimate, have been more directly concerned with the causation of the digestive complaints met with in advanced life, and seem to indicate that out of every 100 cases of chronic dyspepsia in persons over 65 years of age 66 are secondary to organic disease of some important organ of the body, while the remaining 34 owe their symptoms to a progressive degeneration of the secretory structures of the stomach and intestines. In the former class the disorder of digestion usually takes the form of a chronic gastritis due to disease of the kidneys, prostate gland, heart, lungs, liver, pancreas, chronic gout, or inefficient mastication, while in about 7 of the 66 cases, or in 10 6 per cent. of the entire number, longcontinued hypersecretion due to chronic ulcer in the vicinity of the pylorus, gall-stones, or diseased appendix is the cause of the constant indigestion. The true dyspepsia of old age, which depends upon a series of retrograde changes in the alimentary tract, has hitherto received little or no attention, and I am consequently obliged to rely upon my own observations for the following notes upon the subject.

Pathology.

Some years ago, while pursuing with von Recklinghausen a histological investigation of stomachs taken from persons who had died from different complaints, I was much struck by certain morbid appearances presented by the organ in the case of old persons who had died either from an accident or some acute disease and in whom the other viscera of the body were quite healthy. Further investigations have fully confirmed these earlier impressions, and it is now quite certain that with advancing age a progressive degeneration affects the secretory structures of the entire digestive canal. Although after the age of 50 these changes are fairly constant, careful examination will often detect their existence at a much earlier period, and in one instance

¹ This case was fully reported by Mr. Newbolt in the Liverpool Medico-Chirurgical Journal for January, 1907.

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they were extremely well marked in a man in his forty-first year. To the naked eye the pyloric third of the stomach presents an attenuated appearance, the rugæ being practically absent and the mucous membrane abnormally smooth, pigmented in patches, and firmly adherent to the subjacent muscular coat. The pyloric orifice is also less patent than usual and readily tears when stretched. In more advanced cases glistening lines or streaks may be observed running parallel to the lesser curvature, or irregular patches of thin, scar-like tissue are scattered over the mucous membrane near the pylorus. In such it is usual to find that the walls of the stomach are so thin and white as to resemble tissue paper, while from the size of the organ it is obvious that a considerable degree of gastrectasis must have existed during life. Post-mortem digestion is rarely encountered. rule, the small intestines exhibit the same pallid, thin, and inelastic appearance, while the colon is distended with gas and unusually translucent. Extensive atheroma of the abdominal aorta, coronary and mesenteric arteries may usually be

On microscopical examination of the pyloric region the first sign of disease is found to consist of an overgrowth of the connective tissue that surrounds and supports the tubular glands, with the result that the latter appear attenuated and unduly separated from one another. Even at an early stage of the disease the columnar epithelium which covers the surface of the mucosa and lines the mouths of the ducts has disappeared and the cells of the glands have lost their individual outlines and present a granular appearance. As the disease progresses the ever-increasing interstitial tissue twists, distorts, and finally compresses the glandular structures until their extreme fundi are merely represented by a series of minute cysts lined by a cubical endothelium. Finally these disappear and the mucous membrane is converted into a thin layer of fibrous tissue. Coincidently with these changes in the mucosa the submucous coat suffers from a similar but less intense form of cirrhosis, accompanied by an obliterative arteritis of its nutrient vessels, with the result that the intervening muscularis mucosæ becomes more or less destroyed by compression. At first the muscular tunic shows signs of hypertrophy, but sooner or later it also becomes involved by an interstitial fibrosis and its contractile fibres either atrophy or are affected by a fatty degeneration. Unlike the similar condition which results from ordinary interstitial gastritis, indications of hyperæmia are absent and the peritoneal coat is never thickened. The cirrhotic changes rarely extend beyond the central zone of the stomach; indeed, the connective tissue of the fundus is usually very thin and fragile in appearance, while the glands are either dilated and devoid of cells or are incompletely filled by globules of fat. In the small intestine the villi are markedly shrunken and distorted, and the follicles of Lieberkühn are filled with masses of degenerated cells, while in advanced cases the mucous membrane is more or less completely destroyed by an interstitial fibrosis. Changes of a similar character are almost always present in the colon, and the head of the pancreas is usually atrophied or fatty.

If one may argue from the somewhat similar changes which affect the gastro-intestinal tract in cases of chronic interstitial nephritis, pernicious anemia, and diabetes, it would seem probable that the atrophy of the alimentary organs which occurs in old age is the expression of a mild but chronic toxemia, the poisons of which produce irritation during their elimination by the glands of the gastric and intestinal mucous membranes, and are themselves possibly produced by some abnormal chemical changes in the contents of the large bowel.

With regard to the chemistry of digestion in this condition, I have usually found that the total acidity of the gastric contents after a test breakfast is less than normal, and varies between 30 and 45. Free hydrochloric acid is never met with and the proteid acid is also diminished in amount. Lactic acid is never present. At an advanced stage of the disease the motility of the stomach becomes much impaired, but undigested food is never found in the viscus in the early morning.

Symptoms.

The dyspepsia of old age is common to all classes of the community, but is rather more frequent in women than in men. It usually develops between 60 and 70 years of age and gradually increases in severity with advancing formed in an efficient manner, and new teeth should be

years. As a rule the symptoms commence in an insidious manner, but occasionally their onset is somewhat abrupt and dates from an accident or an acute illness. Flatulence invariably constitutes the most prominent symptom of the complaint. On rising from bed in the morning a sense of fulness, weight, or distension is usually experienced in the upper part of the abdomen, accompanied, perhaps, by nausea, giddiness, or palpitation, and not infrequently followed by an attack of retching which serves to expel a quantity of odourless gas from the stomach. As time goes on it is noticed that the appetite for breakfast steadily diminishes and articles of food which were previously enjoyed are renounced one after another until a piece of toast or a few thin slices of bread and butter constitute the entire meal. At midday the desire for food is more pronounced and a fairly substantial meal may be taken with relish, but during the afternoon epigastric discomfort, eructations of gas, and a marked disinclination to mental work frequently manifest With the progress of time the sense of general discomfort becomes gradually augmented and it is found that abdominal distension and gaseous eructations are almost constantly present, although the individual himself is often oblivious of the constant noisy belchings or borborygmi which annoy his acquaintances and distress his relatives. Occasionally pyrosis, preceded by a cramping pain in the epigastrium, is a troublesome symptom, but regurgitations of an acid fluid into the throat are rarely the subject of complaint. Nausea and retching after food are by no means infrequent, but vomiting is seldom observed. Palpitation of the heart, flushing of the face, tightness of the chest, and a difficulty of inspiration are common in stout persons and greatly add to the general distress. The flatulence is often particularly severe at night and for some hours the patient may be obliged to sit up in bed and to make frequent and varied efforts to expel the gas from his stomach. These nocturnal attacks are particularly common in persons who partake of a light meal of liquid or semi-solid material before going to bed. The bowels are always sluggish in their action and the stools are hard, deficient in colour, and evacuated with difficulty. Anal prolapse develops in many instances, but piles are rarely met

These symptoms may exist in varying degrees of severity for many years, during which the individual maintains his physical strength in a surprising manner and suffers but slight loss of weight. He usually finds, however, that breathlessness ensues upon exertion and that mental worry or anxiety or physical fatigue will at once induce a severe attack of flatulence even in the absence of food. gradually the indications of intestinal disturbance manifest themselves, and when these become established the failure of nutrition at once attracts attention. Week by week the body diminishes in weight, the lips and conjunctive become pallid, the skin loses its elasticity, and presents a dry, scurfy appearance, and there is a rapid deterioration of both the physical and mental powers. The patient now constantly wakes about 5 o'clock in the morning with colicky pains in the left side of the abdomen, and a call to stool results in the expulsion of much flatus and perhaps a little opalescent fluid. In some cases, and more especially in men, the pressure of the distended intestines upon the bladder induces a frequent desire to micturate, while the passage of flatus is often attended by dribbling of urine. The constipation which had previously been a marked feature of the case is interrupted by attacks of diarrhoa, which although not severe are productive of great debility and are followed by further impairment of the appetite and persistent dryness of the tongue. These symptoms, while they continue to exhibit a progressive character, are relieved to some extent by a residence in a bracing locality, careful dieting, and cheerful companionship, but are exaggerated by a damp atmosphere and by indulgence in liquid food. In some instances cardiac failure or an attack of diarrhoea brings life to a sudden termination, but as a rule death ensues from general exhaustion after a period of unconsciousness.

Treatment.

The treatment of senile dyspepsia is essentially the same as that adopted in the allied conditions of achylia gastrica and atrophy of the stomach. Mastication must be perinserted when necessary. The state of the mouth requires careful attention, and a wash composed of Condy's fluid, boric acid, or other antiseptic should be employed after each meal. Special precautions must be taken to protect the patient from exposure to cold, and it is advisable that a woollen or flannel belt be worn next to the skin of the abdomen both summer and winter. Fluids always increase the tendency to flatulence, and consequently beef-tea, broths. and soups should be avoided, and only a small quantity of hot water be allowed at the end of the principal meal. Tea always disagrees, and the various sweet preparations of cocoa are apt to excite gastric fermentation; but a palatable beverage may be prepared from the cocoa nibs or husks. Some individuals are able to take coffee without discomfort. The addition of a tablespoonful of brandy or whisky to the hot water taken after meals is often of value in allaying the epigastric distension, but wines, malt liquors, and effervescent drinks must be avoided. Raw milk should be prescribed with caution, and in most cases it requires to be diluted with limewater, mixed with citrate of sodium or peptonised, before the patient can digest it. The fact that subacidity always exists renders it necessary to restrict the diet to finely minced white fish, chicken, game, brains, tripe, sweetbreads, calves' feet, eggs, and scraped or pounded raw meat. Green vegetables and raw fruits always increase the indigestion, but cauliflower, seakale, stewed celery, and asparagus may be given in moderation, or a baked apple may be taken with the midday meal. Toast is preferable to bread, while buns, cake, and pastry must be prohibited. Fats may be allowed in mild cases and cod-liver oil is often of much benefit, but in advanced cases fatty substances are apt to produce nausea and diarrhea. The various digested and semi-digested cereal foods, maltine, and sanatogen help to vary the diet, but barley, oatmeal, and rice must be given with caution.

The main indications for medicinal treatment are to correct the subacidity and to relieve the flatulence and constipation. For deficient digestive power of the stomach it is customary to prescribe dilute hydrochloric acid after meals in combination with pepsin, papain, or other artificial digestives, but when given in the ordinary way the mineral acid seldom produces any good effect, while pepsin and its allies are useless. A better plan is to administer 6 onnces or more of a 0.05 per cent. solution of hydrochloric acid, combined with one and a half drachms of glycerine twice a day after the principal meals. As a rule, the best aid to gastric digestion is to be found in the administration of lactic acid bacilli in the form of Metchnikoff's sour milk. If this is properly prepared and a tumblerful be taken with the meals each day many of the dyspeptic phenomena vanish after about a fortnight and the flatulence is greatly relieved. According to my experience the various tablets composed of lactic acid bacilli at present on the market are of very little value. Maltine and takadiastase are chiefly of use when intestinal dyspepsia exists and should be given with the meals. Tonics always increase the flatulence and even the various bitters prescribed with the view of stimulating the appetite usually disagree after a few days. In order to relieve an attack of flatulence a draught containing ammonia, ether, and spirit of cajuput is usually employed, but a far better remedy is to be found in the alcoholic essence of peppermint introduced by Ricqlès and now obtainable at most of the large chemists in London. One teaspoonful or less in a sherry-glassful of water seldom fails to relieve the feeling of distension or an attack of wind colic. For the constipation salines and mineral waters should be avoided, and recourse be had to a mixture of cascara and maltine, a confection of sulphur and guaiacum, the infusion of senna pods, or to an occasional dose of grey powder.

Harley-street, W.

SUSSEX COUNTY HOSPITAL, BRIGHTON.—The elective committee of the Sussex County Hospital on Oct. 27th received with the greatest regret the resignation of Mr. T. Jenner Verrall, senior honorary surgeon, after 24½ years' service in connexion with the institution. The committee recognised the great value that his services have been to the hospital, and the unvarying care and attention that he always paid to the patients under his charge. Mr. Verrall was appointed an honorary consulting surgeon, and Mr. A. H. Buck, senior assistant surgeon, was appointed surgeon. Mr. H. N. Fletcher was appointed assistant surgeon.

SINUSITIS OCCURRING AS A CON-COMITANT COMPLICATION OF INFLUENZA.¹

BY R. M. MANWARING-WHITE, M.D. EDIN., HONORARY SURGEON TO THE VICTORIA INFIRMARY, NORTHWICH.

In previous epidemics I had noticed the complication of a catarrhal condition of the accessory sinuses of the nose, and so I made a careful study of it during the recent epidemic of influenza which we had in this district. The efficient treatment of this simple complication gives such relief to the patient and engenders such thanks that I thought it suitable for a short paper.

Influenza, to our knowledge, has visited this country in epidemics for very many years. In text-books published previous to 1908 no mention is made of sinusitis; are we then dealing with a new complication, or did it occur and was unrecognised? On looking through the literature I think we have distinct evidence of its presence in former epidemics, but still it cannot have been common until the last few years. During last winter the greater number of those suffering from influenza had also sinusitis, but in many instances treatment for the complication was unnecessary. It first came under my notice in 1906-07, and attracted attention by the extraordinary daily attack of acute pain occurring at the same hour. In my experience it is more common in men than in women, and does not occur in children, due to the fact that the sinuses do not develop until puberty.

Etiology. -Sinusitis is not necessarily influenzal in origin. but might be due to any severe acute catarrh. The micrococcus catarrhalis is the organism now usually present in cases of clinical influenza. I examined the nasal discharge of a number of cases during the last epidemic and usually found the micrococcus catarrhalis, but not in a single instance could I demonstrate the Pfeiffer bacillus. The nasal mucous membrane is very liable to catarrh, and its continuity with the accessory cavities renders the latter prone to the same conditions by simple extension of the catarrhal process, then organismal infection readily occurs. The method of infection I believe to be by inhalation rather than from the blood stream. Air inhaled for the greater part passes into the nostrils vertically, and the largest stream passes along the middle meatus, in which we have the opening of the frontal sinus. Another and smaller stream passes up to the superior meatus and enters the sphenoidal sinus. This latter stream is very much slower than the former. Thus it is that the frontal sinus is more liable to infection than the other accessory cavities. We must not, however, lose sight of the fact that it appears to be almost impossible in many cases of apparent frontal sinusitis to state that the anterior ethmoidal cells are free from disease. Waggett says that in all cases of frontal sinusitis we may conclude that the anterior ethmoidal cells are also affected. Similarly, in infection of the sphenoidal sinus there is also infection of the posterior

ethmoidal cells.

Symptoms. - The symptoms of an inflammatory condition of the accessory sinuses of the nose are considerably modified according as the ostium of the cavity remains patent or becomes at times closed from swelling of its mucous membrane. In the former case a spontaneous cure results, while in the latter there is retention and consequent aggravation of the symptoms. In considering the frontal sinus we must remember that we are also probably dealing with the anterior ethmoidal cells. The attack of influenza is ushered in with the usual aching of the limbs, back, and head, and the other cardinal symptoms. On the next day the headache appears to be concentrated in the frontal region, and we get a watery discharge from the nose, sometimes almost entirely unilateral. On the third day the headache increases in severity and is described as neuralgia in the course of the supraorbital nerve with often deep-seated pain around and in the orbit. Whereas during the preceding days it was continuous, the pain now comes on at practically the same hour each day and passes off again in three or four hours; during the rest of the day the patient is more or less free from

¹ A paper read before the Lancashire and Cheshire Branch (Altrincham Division) of the British Medical Association.

trouble, but on the following day the pain returns at the same hour and lasts about the same time. Occasionally the attacks occur two or three times during the day but more usually there is only one attack, which in the large majority of cases commences about 10 A.M. and lasts until about 1 P.M.

These pains are peculiarly aggravated by straining, coughing, and blowing the nose or by sneezing, unless by so doing there is a copious discharge, which of course affords relief. The cessation of pain frequently occurs pari passu with the discharge from the nose. The discharge, which was at first watery, is now thick and purulent and contains yellow particles in it, like the sulphur-yellow granules of actinomycotic pus. At other times the discharge is homogeneous in consistence and of a canary-yellow colour; frequently also we find streaks of blood present, due possibly to the violent attempts made to blow the nose. Percussion over the affected sinus is extremely painful, and the difference on the two sides is most marked. In a few cases I have been able to demonstrate on percussion a distinct dull note on the affected side, as compared with the marked resonance of the bone on the healthy side. In very aggravated cases I have seen a slight cedema and redness of the skin over the affected side, also of the eyelid and conjunctiva. Pressure on the supraorbital foramen, and rarely also on the infraorbital foramen, excites the most acute pain.

The symptoms continue for some days, in a few cases disappearing about the end of the first week, but more usually persisting for from 10 to 14 days. After that time they usually gradually subside, the yellow discolouration disappearing from the discharge, which also becomes more watery. In some cases the yellow purulent material and a watery discharge seem to alternate. In one case when the trouble disappeared from one side it commenced in the other. In two cases extension occurred to the ear-I presume along the Eustachian tube possibly due to violent attempts to blow the nose; in the one case followed by an otorrhea and in the other only by deafness, tinnitus, and otalgia, with injection of the tympanum, which disappeared in a few days, and the hearing gradually returned. StClair Thomson records a case of tense ædema without redness of the right eyelid, and tenderness of the upper and inner angle of the right orbit. No pus could ever be discovered in the nose, yet on incising the swelling there was an escape of free fluid pus welling out from the frontal sinus and containing the micrococcus catarrhalis in pure culture. The pain may not disappear entirely with the cessation of the discharge, but may continue for two or three months; this, however, is quite unusual.

Sphenoidal sinusitis.—This probably never occurs without infection also of the posterior ethmoidal cells. Suppuration in these sinuses is not nearly so common as in the frontal, and I have only met with two cases and one of these was doubtful The pain, as in frontal infection, is periodic, but is situated mostly in the occipital region; it may be present on the vertex and at the back of the eyes, and described by one patient like a hundred needles pricking the back of the eye. The discharge passes into the superior meatus and from there into the pharynx, and the patient is continually expectorating: it is very similar in consistence and colour to that observed in frontal sinusitis. Through irritation of the pharynx there is produced a most hacking and persistent cough. At times during the acute pain there may be marked somnolence, the patient being in a dazed condition. When we realise how near to important structures at the base of the brain the sphenoidal sinus is situated, it seems easy to imagine most untoward symptoms. There are usually conjunctivitis and cedema of the eyelid, and vision may be affected. It has been reported that optic neuritis and total blindness may occur, due to the pressure on the optic nerve as it passes through the wall of the sphenoidal sinus. The condition of one of the patients I saw appeared to be so serious that the relatives thought he had had a stroke, and for some weeks I did not recognise the true nature of the condition.

Maxillary sinusitis occurring during an attack of influenza is rare compared to frontal infection. I have only met with two cases which I could definitely say were influenzal in origin, and this I consider rather tends to prove that the vast majority of cases of antral disease with which we meet are dental in origin. The usual symptoms of antral suppuration are present, including swelling and cedema of the

cheek, but the pain differs from that which occurs in frontal sinusitis by not being so markedly periodic, although it also has that tendency. The character of the discharge is similar to that which occurs from the frontal sinus under the same conditions.

Diagnosis. - Given a case of influenza, if there is unilateral nasal discharge with periodic headache coming on at the same hour each day, we may safely conclude that we have to deal with suppuration in one of the accessory sinuses of the nose. To differentiate the sinus involved the locality of the pain is of great importance in giving us a clue to the seat of infection and usually definitely settles the question. If there is any doubt the best method is afforded by anterior rhinoscopy; if after thoroughly cleansing the nose we find pus oozing into the middle meatus, then it is either coming from the antrum or from the frontal and anterior ethmoidal cells, whereas pus in the superior meatus must necessarily come from the sphenoidal sinus and the posterior ethmoidal Transillumination will readily distinguish frontal from antral disease, in a healthy antrum the bright light under the orbit and the red glare of the pupil being particularly noted. Other methods, such as puncture of the antrum with introduction of a cannula, and X ray photographs are quite unnecessary.

Prognosis.—I have only seen one case of sinusitis occurring as a complication of influenza which became chronic, and that did not seem severe enough to suggest operative treatment. The majority appear to be quite cured in a week to ten days, a few cases persist for two or three weeks, and I know of one which has persisted for about three months. Many patients recover without any treatment at all, and few would pass into the chronic stage if efficient local treatment was adopted during the early stages of the attack. The least favourable cases are those where free drainage from the sinus is hindered by some form of nasal obstruction.

Treatment. - Unlike a large number of diseases with which we have to deal, very great benefit is derived from treatment. The one case which I have mentioned as becoming chronic I saw more than two years ago, before I realised the rationale of the treatment. At first I tried tobacco snuff, from which some of the patients derived considerable benefit, also in addition an atomiser used frequently with a chloretone and menthol mixture was useful, but I rather believe the case of otalgia, to which I have referred, was caused by too violent use of this instrument. I have in consequence now quite discarded it. Last year I had one case which received no benefit from this treatment, and he consulted a surgeon who wrote to me confirming my diagnosis, and suggested the passage of a probe daily into the frontal sinus, The passage of a and if this failed operative treatment. cannula into the frontal sinus is an extremely difficult procedure, which Tilley says can only be acquired by considerable practice coupled with an intimate knowledge of the nasal fossæ and their accessory sinuses. The patient mentioned, I may add, recovered without the passage of a cannula or operative interference.

The treatment which I now always adopt is as follows, and luckily it appears to suit all the accessory sinuses equally well. Hot fomentations are applied over the affected side, and a teaspoonful of the following mixture is put in a jug of boiling water, and the vapour is inhaled every three hours, a towel being placed over the head to concentrate the vapour as much as possible: 5 minims of oil of eucalyptus, ½ drachm of menthol, ounce of rectified spirit, and methylated spirit to make up 14 ounces. This treatment relieves the pain and usually stimulates a free discharge from the nose, and the patients say "it clears the head." If unsuccessful, but I have never found it fail, I should pack the neighbourhood of the middle meatus with cocaine and adrenalin. In antral suppuration I should also recommend that the head be kept low as much as possible and on the opposite side so as to secure more efficient drainage. Sandeman has invented a modified Politzer bag which is first emptied of air, the nostrils closed tightly, and the bag allowed to expand suddenly as the patient svallows, but it is difficult to understand how the method can be of practical value when used in a congested nasal cavity. Some relief of pain may be procured by the internal administration of such drugs as aspirin. phenacetin, &c. When the soft tissues over the sinus become red, swollen, ædematous, and very painful on pressure it may be assumed, in the case of the

frontal sinus, that the fronto-nasal duct is obstructed and that pus is making its way through the walls of the sinus, and if the treatment above mentioned fails it then becomes the duty of the surgeon to open the sinus from the outside. Both Tilley and StClair Thomson record cases in which operative interference has been necessary, but so far I have not met one.

Northwich.

A CASE OF TERTIARY SYPHILIS TER-MINATING IN SUDDEN DEATH FROM ABDUCTOR PARALYSIS OF THE VOCAL CORDS.

BY ROBLEY H. J. BROWNE, L.R.C.P. LOND., M.R.C.S. ENG., FLEET SURGEON, ROYAL NAVY.

An able seaman, aged 30 years, was placed on the sick list on Sept. 9th with partial aphonia; there was also some dyspnœa, which was said to have been noticed for "about a month." The patient had in addition well-marked ozena; the bridge of the nose was sunken. There was a history of complete syphilis dating back to 1902; the man had been several times under treatment, both on board ship and in hospital. On examination of the chest the entry of air was fair on both sides, but less satisfactory on the left side than on the right. The heart sounds were not quite normal, the second sound being unduly accentuated; this suggested the possibility of aneurysmal mischief. The aphonia passed off in two or three days, and a cough cleared up almost entirely. Treatment included inhalations of steam with entirely. Treatment included inhalations of steam with tinctura benzoini and the internal administration of a mixture containing 1-16th of a grain of perchloride of mercury and 10 grains of potassium iodide. On Sept. 15th he expressed himself as fit for duty and was allowed to try.

On the 18th the man came again, having woke up in the middle of the night "feeling ill." There were considerable dyspnæa and a rise of temperature (100 8° F.). He was put in bed (on milk diet) and the mistura biniodidi was repeated every 4 hours, the inhaler being again used. Whilst doing duty he had been taking a draught every morning containing 15 grains of potassium iodide and 3 minims of liquor iodi in 4 ounces of water, as originally recommended (I believe) by Larrieu. On the afternoon of the 18th there was some alarming dyspnœa, and the temperature rose to 103°. By the following morning the dyspnœa had passed off almost entirely and the temperature was normal; the patient got rid of some thick purulent sputum with much relief. The general condition rapidly improved; the temperature kept normal, the pulse averaged 80, and the respirations 20; there were no developments in the chest symptoms The voice was still rather weak, but was much stronger than when he was first seen. There was some paroxysmal dyspnœa which disappeared after he had, with difficulty, expectorated the tenacious pus referred to above; this took place two or three times a day. The man was, in my opinion, a most undesirable person to retain under the my opinion, a most undesirable person to retain under the conditions of life on board ship, and I was arranging to send him to hospital in a ship which was to leave Cromarty (where we were at the time) on the 25th. With that object in view he was allowed to get up for half a day on the 23rd, and for the greater part of the 24th. He took food well, and expressed times! (on the carning of the 24th). himself (on the evening of the 24th) as quite fit for the journey on the following day. Shortly after midnight (24th-25th) he apparently woke up, got out of bed, and (pointing to his throat) shook a patient in the next bed who called a sick-berth steward sleeping close by. The patient had by this time returned to a chair alongside his bed, where he immediately collapsed. I was at once summoned, and arriving at the sick bay very shortly after the seizure found the man dead. The face was congested but not cyanosed, the heart had stopped, and further measures (artificial respiration and injection of strychnine) were futile. The congestion of the face passed off very quickly and air was twice heard to escape from the larynx with a sibilant noise.

Necropsy. - A post-mortem examination was made on the following day by Surgeon L. C. Hunt and myself, when the

following lesions were found. On examining the larynx the cords were seen to be in the "cadaveric position"; they were thickened, and there was some scarring in the neighbourhood, the result of old ulceration; this extended up towards the base of the epiglottis. The trachea was extensively scarred and ulcerated, with cicatricial tissue in several places; there was gradual narrowing of the lumen, and 3 inches below the larynx there was a tight annular stricture, which would just admit a No. 7 bougie. Below this stricture the ulceration and contraction extended down the trachea into both bronchi; a succession of pus-bathed ulcers were found in this position, the left side being more affected than the right. The lung tissue was normal. The right side of the heart was full of blood, suggesting the prior cessation of respiration. There was some thickening of the mitral valve, and a few patches of commencing atheroma of the aorta were seen. Several glands in the neck were enlarged, and one or two near the bifurcation of the trachea were breaking down (gummatous).

Taking into consideration the clinical symptoms and the post-mortem appearances, I am of opinion that the immediate cause of death was abductor paralysis of the vocal cords. In a recent clinical lecture by Dr. Herbert French 1 the following passage occurs: "Paralysis of vocal cords may be a cause of sudden death. In syphilitic subjects particularly, special portions of the brain may suffer from nerve-cell degeneration. If the centre controlling the movements of the vocal cords is attacked, it is a most unfortunate fact that it is always the abductor muscles of the larynx which get paralysed first, so that before the adductors become paralysed there may be a sudden bringing together of the cords by adductor spasm, and unless tracheotomy is performed instantly the patient cannot breathe, and death occurs as certainly as if he were killed by strangulation." In this case of course it is more probable that the recurrent laryngeal may have been directly involved in some of the diseased structures, but this was not actually demonstrated at the post-mortem examination. When first called to the man I thought it most probable that an undetected aneurysm had burst, and I must admit that (in the absence of cyanosis or other evidence of respiratory obstruction) I did not consider the question of tracheotomy. However, I have not the slightest doubt that the patient was dead beyond recall when I reached him, and in any case the presence of a tight tracheal stricture so low down would have rendered the operation futile. The severe lesions discovered post mortem were quite out of proportion to the clinical symptoms and physical signs. Syphilitic disease of this type is fortunately very rare, and I consider the case sufficiently interesting to bring forward.

H.M.S. Temeraire.

RAPID RECOVERY IN A CASE OF TROPH-NEUROTIC ANÆMIA BY INTRA-MUSCULAR INJECTIONS OF SODIUM PARA-AMINO-PHENYLARSONATE.

BY T. WILSON PARRY, M.A., M.D. CANTAB.

I WAS urgently sent for, in the late evening of June 26th. 1909, to attend a lady in a dead faint. The history I elicited was the following. She had had a nervous shock in March, 1908, from which she had never properly recovered. Since then she had been going steadily, but surely, down hill. She was 54 years of age, and the mother of 12 children, the youngest living being 20. Having had pains about her body, which she attributed to rheumatism, she went on her own account to Harrogate early in June. She tried drinking some of the sulphur-water and taking one or two baths, but felt so ill afterwards that she abandoned the idea, and a medical man whom she consulted advised her to return home at once, as she was quite unfit to follow any form of hydropathic treatment. It was on her immediate return from Harrogate that I was called in to see her. She had been violently sick, and was only slightly conscious. Her pulse was very small, rapid, and could be obliterated by the most delicate pressure. Her heart sounds were very indistinctly heard, being very

¹ Guy's Hospital Gazette, August 7th.

small and distant, but no murmur could be detected. Her skin was deathly pale with a slight tinge of yellowness, and was markedly dry. The conjunctive were colourless. There was no nystagmus. Her tongue was clean, but sore, and her temperature was 103° F. I could find no organic lesion; nor did I find in the urine any trace of sugar, albumin, or indican.

During the next few days it was my endeavour to stem the sickness of the patient by gastric sedatives, and to bring her stomach into condition for receiving arsenic, as one felt if any drug would do her good it must be this one. On June 29th I attempted arsenic, strychnia, and small doses of iron; and on July 1st she was given calomel (12th grain) three times a day, as an intestinal antiseptic, in case the anæmia was septic in origin. On July 2nd I stopped the mixture I was giving by the mouth, and replaced it by intramuscular injections of sodium para-aminophenylarsonate, an organic salt of arsenic prepared by Messrs. Burroughs, Wellcome, and Co., under the name of "soamin." As it has less than one-fortieth of the toxicity of arsenious acid much larger doses can be given, and results are more quickly obtainable. I injected intramuscularly one grain of this preparation in the morning, and one in the evening of July 2nd. The spot chosen for puncture was a point midway between the anterior superior spine of the ilium and the summit of the intergluteal fold of the buttocks. I injected one side in the morning and the opposite side at night. The injections were only given on alternate days. On July 4th the same two doses were given, and on July 6th two grains were administered in the morning and one at night. The temperature, which had been daily dropping, reached normal on this day and practically continued so for the rest of the time. On July 8th two grains were injected both morning and evening, and these same doses were repeated on July 10th. On July 12th three grains were injected in the morning and two in the evening, and these same doses were repeated on July 14th. On July 16th three grains were given both morning and evening and these doses were continued, on alternate days, till August 9th, when in all 100 grains of the preparation had been injected. During this time the patient was gradually passing from a state of sickness, giddiness, faintness, and amnesia to first toleration of and then satisfaction in taking food. Her vertiginous attacks were at first almost constant, extreme giddiness occurring if she merely turned her head while in the prone position. After a while they occurred only when she sat up, and eventually they disappeared altogether. She told me she could not remember any of the journey from Harrogate home nor any of the events that happened for more than a week after this. After she had been about a fortnight under treatment she was moved from her bed to a couch by an open window and a week later to the garden, where she lay all day in the open air. At the end of a month she could walk a short distance unassisted. On August 19th she went to the seaside, where she continued to improve in a steady and uninterrupted manner.

Dr. Wyatt Wingrave kindly examined the blood for me on June 30th, before the injections of the drug were given, and again on August 9th, after the hundredth grain had been administered. The following are the analyses of the two examinations:—

							Ju	ine 30th.	Au	gust 9th.
Hæmoglo	bin						 65	per cent.	 93	per cent.
Red corpu	iscles						 3	,500,000	 4	,800,000
White	,,							2,800		3,250
Differ	entic	u:								
(a)	Whit	e-								
	Po	lym	orp	hic	cells		 34	per cent.	 55	per cent.
	Mo	onor	nucl	ear	,,		 32	**	 21	,,
	Ly	mp	hocy	ytes			 34	,,	 24	,,
	Eo	sinc	phi	les			 1	,,	 0.5	,,
(b)	Red-	-								
	Po	ikile	ocyt	es				A few.		A few.
	Me	gal	ocyt	es				,,		,,
	Mi	croc	yte	8				,,		,,
	Ch	rom	aph	ile g	gran	ules		,,		,,
	No	rmc	bla	ts				None.		None.
Bacteria								••		,,
Colour inc	lex	•••					 0.9	per cent.	 0.9	per cent.

From the above table several points are clearly demonstrated. As a definite leucopenia was established by the first blood count (only 2800 white cells being found in the cubic millimetre) a diagnosis of both pernicious anæmia and

leucocythæmia could be at once dismissed. The colour-index being slightly below normal was also evidence against the former. As there was a decided diminution in hæmoglobin and also in both red and white corpuscles, the first thing that struck one on looking at the result of the examination was that a severe hæmorrhage had taken place. This, how-ever, was not the case as there had been no bleeding from any part of the body. The next thing noticeable was the large percentage of mononuclear leucocytes which were present in more than double their normal number. No nucleated red cells could be found, but the red corpuscles themselves showed considerable variation in size and shape, megalocytes, microcytes, and polkilocytes all being found. All the evidence, therefore, seemed to suggest a troph-neurotic influence in interfering with the balance and the renewal of the red corpuscles, attributable, no doubt, to the severe mental shock that had been sustained. It has been my lot to have several cases of severe and even fatal anemias, as also cases of diabetes, that have undoubtedly originated in a sudden severe mental shock. When comparing the second column with that of normal blood it will be seen that there is still a slight deficit in hæmoglobin and red cells and also a more noticeable one The polynuclear leucocytes, as also the in white cells. lymphocytes, have regained their normal percentage, but the mononuclear cells are still above their normal. though the state of the blood had not quite regained its healthy normal balance, the case was one that had immensely benefited by the treatment employed; so to the intramuscular injections of this arylarsonate I must perforce attribute the striking clinical and hæmatological changes that had taken place. And all this in so short a period as 39 days.

Crouch End-hill.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

MEDICAL SECTION.

Oxaluria.

A MEETING of this section was held on Oct. 26th, Dr.

J. MITCHELL BRUCE being in the chair.

Dr. Robert Maguire read a paper on Oxaluria and the Treatment of Calcium Oxalate Deposit from the Urine, with a Method for the Solution of Calcium Oxalate Calculus whilst in the Urinary Passages, which is printed in this issue of The Lancet (see p. 1333).

Dr. BRUCE said that the paper was a record of very careful work, and the conclusions which Dr. Maguire had felt justified in drawing might be of great clinical importance.

Dr. ROBERT HUTCHISON said that the paper was of great practical interest to physicians. The paper might be divided into two parts, the theoretical and the pathological and practical part. He (Dr. Hutchison) was one of those who were profoundly sceptical of the so-called oxaluria symptom complex. He felt strongly that the creation of this symptom complex was the work of imagination. He pointed out that Dr. Maguire in his paper had not touched on the question of the magnesium salts in the urine, and there were other obscure factors that might come into In regard to the plan followed by Dr. Maguire of giving acid phosphate of soda for some time the result would be to increase the acidity of the urine, but in stone there was a strong tendency for oxalic acid and uric acid to alternate, therefore one would run a risk of throwing down uric acid. So far as he could understand, Dr. Maguire seemed to think that it was possible to clear away the calcium oxalate and then give something to treat the uric acid; but the practical difficulty arose how to know when one layer of the stone had been cleared away so that the next layer was ready for treatment. Concerning the composition of commercial acid phosphate of sodium, he said that at the London Hospital they did not have any great difficulty in procuring commercial preparations that were practically pure.

Dr. H. Beckett-Overy said that persons who appeared perfectly healthy might have a considerable amount of

oxalates in the urine. He described the successful treatment of oxalates by giving the citrates of calcium and soda.

Dr. John Anderson gave details of the case of a young woman who complained of no pain whatever in her left side but did complain of pain in her right side. There were blood discs in the urine and calcium oxalate crystals. By means of X ray photographs 10 irregular shaped calculi were seen in the left kidney and one stone only in the right kidney. These stones were removed at one operation, and the stone in the right kidney that caused the pain was of a flattened discoid form, and the stones in the left kidney that caused no pain were "spiky."

no pain were "spiky."
Dr. NESTOR I. C. TIRARD congratulated Dr. Maguire very warmly on his paper, but wished that the observations therein had been confirmed by further information. It was felt that at present there was some doubt how far the case recorded by Dr. Maguire could be regarded as definitely solving the question of solution of the stone. Dr. Maguire admitted that possibly it was not so much solution as disintegration. With regard to the pharmacology of the subject, they had all been in the habit of using acid phosphate of sodium in treatment in cases of nervous dyspepsia without any definite thought concerning its action as a solvent of oxalic acid. When he (Dr. Tirard) as a solvent of oxalic acid. When he (Dr. Tirard) administered phosphate of sodium it had been usually with some idea of its purgative action or of its action in changing the composition of the urine. If they were to use the drug with some new hope of causing a diminution in the stone in cases of oxalic acid then they would be largely indebted to Dr. Maguire for his observations. But he (Dr. Tirard) would like more cases and more evidence. He admitted, however, that in the one case brought forward by Dr. Maguire the evidence of the pain over the ureter and the history of the hæmaturia appeared almost conclusive. With regard to the purity of commercial acid sodium phosphate the attention of those concerned in the production of the British Pharmacopœia was directed towards the variable amount of the water of crystallisation. He did not think even if there was a variable quantity of water of crystallisation that the chemical action of the compound would thereby be seriously affected.

Dr. MAGUIRE, in reply, observed that in one of the large hospitals at Vienna from 5 to 6 per cent. of the patients were found to have oxalates in the urine. In reference to the impurity of the commercial acid phosphate of sodium he could only say that he had tried the salt from three chemists. There was no doubt that in the acid phosphate of sodium supplied there was more water of crystallisation than it ought to contain.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Presidential Address.—Drug Treatment of Inebriety.— Exhibition of Cases and Specimens.

THE first meeting of the session of this society was held on Oct. 22nd, Dr. J. B. HELLIER, the President, being in the chair.

The PRESIDENT delivered an address on the Medical Student and his Curriculum from a Teacher's Point of View. Mr. W. ASTEN read some notes on the Drug Treatment of Inebriety. The treatment was essentially that first proposed by Dr. McBride, and consisted in the hypodermic injection of atropine and strychnine twice or thrice daily for a month or six weeks, with attention to general hygienic conditions, and tonics by the mouth. At the commencement of the treatment patients were told that its success depended on their regular attendance at the surgery for injections. He described 7 cases, all of them presenting marked degrees of alcoholism, which had been treated in this way. In 5 treatment was commenced in September, 1905, July, 1907, March, 1908 (2 cases), and July, 1909, respectively. These cases had remained cured up to date. In the two other cases relapses had occurred after two months and four years respectively. Mr. Asten strongly urged the desirability of carrying out this treatment wherever practicable, in view of its simplicity, economy, and the favourable results obtained. Several members quoted cases that had been successfully treated by this method.

Mr. H. LITTLEWOOD showed: 1. Six Inches of Sigmoid Flexure thickened from Chronic Diverticulitis, which had led to fistulous openings between the colon, bladder, and the abdominal wall. The patient, a woman, aged 65 years, had

for 20 years passed fæces and flatus per urethram, and fæces and urine through the abdominal wound. At the operation chronic thickening of the sigmoid was found and a funnel-shaped diverticulum opening into the bladder and on to the surface of the body in the left hypogastric region. This was removed and the fistulous openings closed. Some weeks later fæcal material escaped through the abdominal wound and 6 inches of the bowel were then resected and united end to end. The fistulæ remained completely closed. 2. Gall-stones in the Appendix and in an Appendical Abscess. The patient, a man, aged 52 years, had several attacks of gall-stones and some attacks of appendicitis. At the operation an abscess was found containing three gall-stones; a gall-stone was also found in the appendix. There was a softened patch in the appendix wall, but no opening could be found; probably the gall-stones in the abscess were the result of previous attacks, the opening in the appendix having healed. He has made a good recovery.

Mr. G. Constable Hayes showed two cases of Primary Carcinoma of the Middle Ear. 1. A man, aged 47 years, with suppurating discharge from his right ear for eight months. Squamous-celled carcinoma had filled the whole middle ear and mastoid, destroying the roof and infecting the dura mater. 2. A woman, aged 35 years, with suppurating discharge from the right ear since childhood. She showed facial palsy and a suppurating sinus over the middle of the mastoid. A squamous-celled carcinoma filling the middle ear had destroyed all except the outer wall of the mastoid. The growth extended into the posterior fossa.

Dr. T. Wardrop Griffith showed: 1. A case of Amyotrophic Lateral Sclerosis. There was a slight degree of spastic paraplegia with evidence of nuclear disease in the spinal centres of the upper limbs, profound wasting of both sternomastoids, and some weakness of the voice without much alteration in its quality. The left vocal cord was immobile and in the cadaveric position; the abductors of the right cord were paralysed and the adductors weakened. 2. Two cases of Disseminated Sclerosis in young women. In one case when the patient was seen two years previously she could not walk without assistance. In 12 months she improved so much that she was able to play hockey and was regarded by her friends as cured. The symptoms, however, gradually returned, confirming the original diagnosis.

Dr. R. A. VEDALE exhibited a specimen showing numerous diverticula of the sigmoid flexure, with resulting diverticulitis and local peritonitis. Several coils of the small intestine were firmly united to the sigmoid by long-standing adhesions.

Dr. C. OLDFIELD showed two Suppurating Ovarian Cysts from patients who had both had acute abdominal symptoms for 3 or 4 weeks; the organism in the one case was the bacillus mesentericus, and in the other streptococcus in pure cultures. Both cases recovered without infection of peritoneum or abdominal wall.

Mr. A. L. WHITEHEAD showed cases of (1) Lymphocythæmia with Multiple Retinal Hæmorrhages; and (2) Traumatic Detachment of the Retina which was treated by Puncture of the Sciencia.

Mr. MICHAEL A. TEALE and Dr. E. F. TREVELYAN showed a case of an unusual form of Keratitis in a child which had produced extreme photophobia for several years. It was finally treated by tuberculin.

Dr. W. H. MAXWELL TELLING showed a case of Hypertrophic Cirrhosis of the Liver in a child. There was marked clubbing of the fingers and toes.

Mr. J. F. DOBSON showed a specimen of a Cancerous Stricture of the Sigmoid Flexure from a case in which acute obstruction was caused by the impaction of a foreign body.

Cases and specimens were also shown by Mr. H. Collinson, Dr. O. C. Gruner, and Mr. W. Thompson.

MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.

Paroxysmal Tachycardia.—Congenital Patency of Interventrioular Septum.—Optic Neuritis in Middle-Ear Disease.—A Subcutaneous Operation for Hernia.

A MEETING of this society was held on Oct. 22nd, Professor ROBERT MUIR being in the chair.

Dr. J. S. McKendrick read a short paper on Reflexes in Cardiac Disease, with notes of a case of Paroxysmal Tachycardia. At the outset of his paper Dr. McKendrick referred

to the work of Mackenzie on visceral reflexes, and especially drew attention to the reflexes in cardiac disease. Of these the viscero-sensory and viscero-motor reflexes occurring in angina pectoris were discussed, and reference was made to Lee's reflex, the secretory reflexes, and the pilomotor, autonomic, and pupillary reflexes. The case was that of a man, aged 83 years, who for fully a year before his death had attacks of tachycardia and paroxysmal dyspncea, associated with profuse salivation. His lungs and abdominal organs were sound, the urine contained no albumin, and there was no nervous element in the case. The heart, as a rule, was normal in size and there was no valvular disease; but during the periods of paroxysmal tachycardia it became perceptibly enlarged to the left and a systolic mitral murmur could be heard. By the next day the heart had returned to its normal size and all trace of the murmur had gone. The sphygmogram during the quiescent period showed ordinary cardiac arrhythmia with frequent extra systole of the ventricle, and the rate varied from 65 to 75 beats in the minute. During the tachycardial state the pulse was regular, of low tension, and showed well-marked pulsus alternans, the rate being often 150 beats per minute. During each of these seizures, which lasted from ten minutes to several hours, there was a profuse salivary discharge. On analysis this secretion proved to be almost pure saliva, with no gastric elements. It varied in amount from 10 to 25 cubic centimetres in each The blood pressure was never high, averaging from 125 to 135 mm. Hg, and it did not materially vary either during or after the tachycardial seizure. The tendency to low blood pressure, the dilatation of the heart during the attack, and the pulsus alternans all went to prove that the causation of the attack was probably myocardial and due to disturbed contractility. There was no anginoid pain or hyperalgesia of skin or muscle. The salivary flow was believed to be due to a cardiac reflex through the vagus to the nucleus of the fifth nerve, thereby stimulating its lingual branch. Such cases had occasionally been seen by Mackenzie in true angina pectoris, but no case had been found by Dr. McKendrick in medical literature where the salivary flow was an accompaniment of paroxysmal tachycardia. Polygraphic tracings were difficult to obtain owing to the dyspnæa. The patient died suddenly, probably from vagus inhibition. No post-mortem examination was made.

Dr. J. M. COWAN, in reporting a case in which the bruit de Roger was present, pointed out that in the majority of cases of congenital heart disease the lesions are so extensive that death ensues shortly after birth or in early childhood. During life cyanosis is generally well marked and often The defects are frequently multiple, and an obtrusive. accurate diagnosis is usually possible only on post-mortem examination. Cases, however, occur in which the defect is single, unaccompanied by cyanosis, not incompatible with average health, and associated with distinctive physical signs. Such a defect is the persistence of a communication between the ventricles, a condition described by Henri Roger 30 years ago, and present in the case reported by Dr. Cowan as follows. The patient, an engineman, aged 44 years, was admitted to the Glasgow Royal Infirmary on Dec. 18th, 1908, complaining of swelling of the face of three months', and of the feet of two months', duration. He had never suffered previously from any ill health. On admission he was slightly cedematous and notably anemic. His urine contained albumin and blood in abundance, with hyaline and granular casts.
Under treatment the symptoms rapidly subsided and he was dismissed in fair health on Feb. 21st, 1909. For two or three weeks he remained fairly well, but symptoms recurred and he was readmitted on March 21st with general anasarca and notable dyspnæa. The symptoms gradually progressed, infarct of the lung ensued, and he died on April 1st. The main interest of the case lay in the cardiac lesions. On admission it was noted that the apex impulse was diffuse but not well sustained, and was palpable in the fourth and fifth left interspaces. A long, fairly harsh systolic murmur was audible all over the cardiac area. It was heard best down the left margin and at the foot of the sternum, was fairly well heard at the apex, and was conducted to the axilla and the left scapular angle. It was not conducted into the carotids or towards the left shoulder. The second aortic sound was clear and distinct, but no second sound was heard on auscultation over the ventricles nor at the xiphoid cartilage. The murmur thus closely corresponded to the original description of it by Roger (Académie

de Médecine, 1879) which Dr. Cowan quoted. Its distribution made it certain that the mitral valve was incompetent, and a jugular tracing showed well-marked tricuspid regurgitation, but the maximum intensity of the murmur at the left xiphoid margin and the absence of the second sounds over the ventricles were during life unexplained. Post-mortem examination showed the heart much enlarged, all its cavities dilated, especially the left auricle and ventricle, and the left ventricular wall greatly thickened. The aorta showed some atheromatous patches, and the aortic cusps were a little thickened. At the anterior angle of the membranous septum was a conical aperture about one-eighth of an inch in diameter, surrounded by thickened hard cicatricial tissue surmounted by a few fresh vegetations. The mitral valve was dilated, admitting three fingers. In the anterior cusp was an aperture surrounded on its auricular surface by fresh granulations. Similar granulations occurred on the corresponding surface of the posterior cusp. The foramen ovale was not occluded. The tricuspid valve was dilated, admitting four fingers; its anterior cusp was thickened, shortened, and hardened, and the underlying ventricular wall was thickened and in part covered with fresh granulations. The infundibulum was enlarged and the pulmonary valves were normal. The pericardial sac contained some fluid and a free tag of recent fibrin. There was an infarct of the left lung and a recent pleurisy. The capsules of the kidneys were slightly adherent; there was well-marked parenchymatous nephritis; there were two pelves in the right kidney.

Dr. J. ROWAN and Dr. J. STODDART BARR reported upon a further investigation into the frequency and significance of optic neuritis and other vascular changes in the retine of patients suffering from purulent disease of the middle ear.

Dr. A. G. FAULDS read a short paper upon the Operative Treatment of Hernia in Boys, in which he recommended, as an alternative to the usual open operation for radical cure, the following procedure: (1) reduction of the hernia; (2) insertion of the operator's left forefinger into the canal by invagination of the scrotum; (3) transfixion of both pillars of the ring by one or two ligatures passed subcutaneously; and (4) occlusion of the ring by the drawing tight and tying of these ligatures. Gratifying results were claimed for the operation, which, however, had not proved invariably successful.

Bradford Medico-Chirurgical Society.—The opening meeting of this society was held on Oct. 19th, when Dr. W. Ward-Smith, the President, delivered Some Remarks on the Commoner Deformities of the Lower Extremity due to Rickets, with Especial Regard to their Treatment. After briefly reviewing the general treatment of rickets the President passed on to the consideration of knock-knee, bowlegs, and coxa vara. The treatment of these conditions depended upon (1) the age of the patient; (2) the extent of the deformity; and (3) the circumstances and surroundings. No operative procedure should be adopted until the active general symptoms of rickets had subsided. There was a strong tendency to natural correction. Enormous benefit could be derived from proper local non-operative treatment while the bones were soft. Treatment might be tabulated as follows: (1) rest and recumbency with daily massage and passive movements; (2) rest with fixation of the limb and an apparatus providing pressure; (3) apparatus supporting the limb and permitting application of pressure and yet allowing the patient to walk; and (4) operative. In the youngest children the first method of treatment was usually sufficient. In more advanced cases, in knock-knee, a light wooden external splint should be applied, extending from the upper part of the thigh to 3 inches below the sole of the foot. means of a wide strap the knee was drawn firmly to the splint. This splint could be daily removed for massage and passive movement. In bow-legs the splint was placed on the inner side of the legs. In older children between the ages of 2 and 6 some form of ambulant splint should be used. The best form was an external iron extending from the pelvis to the heel of the boot. A joint at the knee and ankle permitted antero-posterior movements at these points. A broad soft band taking a wide grip of the knee drew it towards the brace. When the patient had passed the age of six years osteotomy was indicated. After describing the various operations of osteotomy and the after-treatment the President then went on to speak of coxa vara. He spoke first of the anatomical condition existing in that deformity. There was a serious limitation of т 3

the movement of abduction of the lower limb, due to (1) the contact of the neck and great trochanter with the margin of the acetabulum; (2) tension on the lower part of the capsule of the joint; and (3) the adaptive contractures of muscles and fascize on the inner side of the thigh. It was more often unilateral than bilateral, and more than 75 per cent. occurred The affected limb appeared to be shorter, and in advanced cases was shorter than the normal side. The great trochanter was higher and more prominent than on the sound side. The diagnosis from morbus corrected on the following points: (1) the gait was usually erect, net with the body bent forwards, as in morbus come; (2) the pain was in the groin, not referred to the thigh or the knee; no "starting pains" (3) there were flexion and external rotation as against adduction and internal rotation in hip disease; and (4) absence of involuntary muscular spasm so frequent in hip disease. The X rays would always clear up a doubtful case. Treatment was at first preventive—general and medicinal treatment of rickets. The local treatment aimed at removing the body weight from the hip: rest with recumbency or an instrument which would conduct the weight of the body through the pelvis. Thomas's knee splint with the bars fixed into a swivel in the heel of the boot, permitting movement of the ankles, was the best instrument. In some cases where the bone was yet soft forcible abduction of the thigh under an anæsthetic might be employed. The limb was then put up in plaster-of-Paris in a position of abduction for some weeks, and for five or six months subsequently treated on a Thomas's knee splint. If these measures failed osteotomy should be employed, usually sub-trochanteric. In conclusion, the President expressed his thanks to Mr. W. H. Thompson and Mr. Norman G. Meade, who had generously permitted him the use of their cases and beds at the Children's Hospital, and to his brother, who, from his association during the last two years with Mr. Robert Jones of Liverpool, had been able to give him considerable help in regard to many points in coxa vara and in the use of Thomas's splints.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Oct. 29th, Mr. C. Gordon Watson, the President, being in the chair. - Dr. W. Langdon Brown read a paper on Some Intestinal Intoxications and Infections. He said that the infant started with a sterile alimentary canal but speedily acquired bacteria there, chiefly organisms derived from the skin of the nipple. In bottle-fed children there were many more organisms of the bacillus coli class. In children and adolescents there was slight evidence of putrefaction shown by little indican and ethereal sulphates in the urine, while in middle life the putrefactive processes were more abundant. The bowel had three lines of defence: epithelial resistance, bactericidal resistance in blood, and antitoxic resistance in the liver. The great seat of putrefactive change was the large intestine. Proteins putrefy, carbohydrates ferment, and to a certain extent these two processes were antagonistic. Intoxications might result from: (1) alteration in intestinal flora because of changed conditions, and bacteria thrive that produce septic toxic substances; (2) spread of bacterial processes up into the small intestine and (3) passing of normal intestinal bacteria into the blood from lowered resistance of epithelium, or lowered bactericidal power of blood-e.g., bacillus coli communis in the production of gall-stones, cystitis and phlebitis in influenza. In many instances it would be difficult, if not impossible, to draw a hard-and-fast line between intoxications and infections, because we could not tell whether the microbe had been able to enter the portal blood stream and had become bacteriolysed there, or whether the intestine had merely absorbed the toxins produced in the intestine. example of a disease that might be either an intoxication or an infection, they might take Hamilton's work on "louping or paralytic chorea in sheep, because it gave us a clue as to the line along which research would have to be carried out in man to establish the pathology of like conditions. Hunter had laid great stress on oral, gastric, and intestinal sepsis as the cause of pernicious anæmia. Rolleston explained the production of cirrhosis of the liver by the view that alcoholic excess led to a prolonged gastric catarrh, which, by lowering resistance, enabled toxic substances to be absorbed from the bowel. Hamilton's suggestion was that a microbe was absorbed from the intestine, bacteriolysed in the portal blood, and its liberated toxins anchored on to the liver substance. Chronic affections of the joints had been attributed to a chronic infection or intoxication,

and either the alimentary or the genito-urinary tract might be the "open door" by which the infective agent enters. The prevention and treatment of a case of proved intestinal intoxication was summarised as follows: (1) a simple diet, largely of milk; (2) ordinary regulation of the bowels without any drastic purgation; (3) naphthalene tetrachloride may be used as an intestinal antiseptic; (4) attention to septic conditions of the mouth; and (5) identification of the microbe responsible and the preparation of the appropriate vaccine.

Rebiews and Notices of Books.

4 System of Operative Surgery. By Various Authors. Edited by F. F. Burghard, M.S. Lond., F.R.C.S. Eng., Teacher of Operative Surgery in King's College, London; Surgeon to King's College Hospital; Senior Surgeon to the Children's Hospital, Paddington Green. In four vols. Vol. I. London: Henry Frowde, Oxford University Press; Hodder and Stoughton. 1909. Pp. 751. Price 36s. net per vol., or four vols. £6 6s. net to subscribers.

THOSE who are most conversant with the recent progress in operative surgery appreciate most the rapid advance that is made year by year, in fact, but very few years are required to render out of date a work on operative surgery which at its first appearance was fully abreast of the time. One of the most remarkable points in connexion with medera surgery is the great widening which it has undergone, so that it is barely possible now for one surgeon, however encyclopædic his knowledge, to give an adequate account of the present position of the subject. Therefore, we notice that there is an increasing tendency to issue systems of surgery in which the special knowledge possessed by various operators can be combined for the production of a work dealing with the whole science.

This volume commences with a chapter dealing with the principles and technique of wound treatment by Mr. C. B. Lockwood. The matters dealt with are the air infection of wounds, the arrangements of operating theatres, the sterilisation of instruments, dressings, and materials used in operation, the purification of the hands of the operator and his assistants, and the skin of the patient where the operation is to be performed. The drainage of wounds and the treatment of infected wounds are also considered. From other writings of Mr. Lockwood we know the exactitude with which he treats all the elements entering into an operation, and this chapter fully reflects the great care, both theoretical and practical, which he devotes to his operations. As he points out, the increasing attention paid to the minutize of disinfection has been followed by a gratifying diminution in the proportion of cases in which the slightest taint of sepsis has been found. The greater the experience of the assistants, the greater the probability of rigid asepsis, but in hospitals, as Mr. Lockwood mentions, house surgeons and dressers are only appointed for limited periods, and as a result of this their terms of office come to an end at a time when they are beginning to be fully efficient. This system doubtless tends to a slight increase in the percentage of sepsis, but its educational value is immense, while it leads to the sending out into the world of large numbers of highly trained men. We concur in Mr. Lockwood's opinion that as a result of the present system of surgical education the inhabitants of the British Isles have at their disposal one of the best medical services that exist. As to the methods dealt with in this chapter there is little to say and we agree with almost every word which is written. Differences of opinion, no doubt, will exist on some of the details of the methods of sterilisation, but those who follow the teaching laid down here cannot go wrong.

A valuable section is that dealing with the methods of

local analgesia; it is written by Captain J. W. H. Houghton, R.A.M.C. He mentious that his article is little more than a full abstract of three papers by Mr. A. E. Barker, but that fact in no wise detracts from its value. The first chapter of the section deals with infiltration and regional analyssis. He prefers for this purpose a solution of beta eucaine with sodium chloride and adrenalin chloride, the beta eucaine being of the strength of 1 in 500 and the adrenalin chloride being of the strength of 1 in 200,000. We agree that this solution is extremely satisfactory. Spinal analgesia is also described, and the author favours stovaine, employing a solution containing 5 per cent. stovaine and 5 per cent. glucose. He attributes the distressing headache which occurs in some 15 to 20 per cent. of the cases to disturbance of the patient during the operation, for he finds that those patients whose heads are sufficiently raised, and whose position is unaltered after the injection, appear to escape all but the most trifling by-effects.

The editor himself has undertaken the section on amputations, and in nearly 200 pages he has supplied an excellent account of this important branch of surgery. The illustrations are especially good and should prove useful in elucidating the text. Detailed criticism would here again, as in the technique of asepsis, resolve itself usually into questions of opinion, but we think it would have been well in the description of Syme's amputation to lay more stress on the great superiority of dissecting the heel flap from above rather than from below in the way it was described by Syme himself. Moreover, we cannot agree that the functional results of Pirogoff's amputation are not so uniformly good as those after Syme's amputation. The operation is not improved by dissecting any heel flap as described in the text, and surely the author is in error in saying that it is difficult to secure bony union; fixation of the portion of os calcis by a silk stitch is useful in ensuring union of the bones. We fully agree with his praise of the Stokes-Gritti amputation, and consider that it is not nearly so frequently employed as it deserves.

Mr. Burghard is also responsible for the section on blood-vessels and lymphatics, and his account of the suture of blood-vessels is quite up to date, as is also his description of Matas's operation, but we feel inclined to protest against the name "endo-aneurysmorrhaphy" which he applies to it. This account is illustrated with some diagrams taken from Matas's paper and should assist in popularising the operation in this country. The ligatures of the arteries in various parts of the body are described, and he includes a chapter on the ligature of the abdominal aorta. We appreciate the difficulty of prophesying as to the domain of surgery in the future, but we doubt very much if ligature of the abdominal aorta will ever take its place amongst the recognised operations of surgery.

The section dealing with operations on nerves, also from the pen of Mr. Burghard, represents the modern teaching. The sections dealing with operations upon muscles, tendons, and bursæ contain a very good account of these important subjects, and especially good is that portion treating of tendon transplantation. The operations connected with bones and joints have been divided into two parts, and only those performed for non-tuberculous affections appear in this volume. In discussing the vexed question as to the frequency with which simple fractures should be dealt with by operation Mr. Burghard steers a middle course between those who hold that operation is never needed in simple fracture except for faulty union or non-union, and those who advocate early operative interference in all cases where a skiagram shows that exact apposition of fragments cannot be effected and maintained.

Plastic surgery has been very satisfactorily dealt with by Mr. T. P. Legg, and though it has not been possible to include a full account of this important branch of surgery within the 80 pages allotted to him, we are interested to see that the chief methods are very adequately described, quite sufficiently fully to enable a surgeon to undertake them. The account is greatly assisted by the numerous valuable illustrations with which it is supplied, some of which represent cases which have been under Mr. Legg's own care, and show the devices he adopted in order to secure good results. Success in plastic surgery depends more on the skill and adaptability of the individual surgeon than on the special method employed.

Judging of this new system of operative surgery by the first volume which has reached us we need have no hesitation in stating that Mr. Burghard has been very successful both in the choice of his contributors and in the substance of their contributions.

The Relation of Medicine to Philosophy. By R. O. MOON, M.A., M.D. Oxon., F.R.C.P. Lond. London: Longmans, Green, and Co. 1909. Pp. 221. Price 4s. 6d. net.

Dr. Moon has not attempted the impossible task of trying to treat exhaustively the wide subject of the Relation of Medicine to Philosophy within the compass of 221 octavo pages, and it might have been well to indicate on the title page the limitatons which he has set himself. His book is a modest and simply written collection of statements about medicine and philosophy throughout the ages, chosen so as to show, to use his own words, "how intimately medicine has been bound up with the current thought and philosophy of the day; how medicine no more than art can work away by itself, uninfluenced by the intellectual milieu in which it finds itself." Until some 300 years ago philosophy practically included all knowledge, and without going back so far as Aristotle it is enough to mention the names of Descartes, of Newton, and at a somewhat later date of Kant, and of Young as instances of master minds. So Plato considered that the philosopher should be "synoptic"—i.e., a man who insists on seeing things together. Dr. Moon commences by considering the pre- and post-Hippocratic schools of medicine, and then passes on to Galen, whose ideas, together with those of Aristotle, dominated medical and philosophical thought practically up to the Renaissance. Galen, following Aristotle, was a firm believer in the doctrine of final causes, a belief which, it will be remembered, Lucretius so earnestly denied as regards the bodily organs, as where in Book IV., 833, he says:---

> "Nil ideo quoniam natumat in corpore ut uti Possemus, sed quod natumat id procreat usum."

"Since nothing was born in the body that we might use it but that which is born begets for itself a use" (Munro).

Dr. Moon opens his fourth chapter with the statement that there remains one cause of the general decadence of medicine after the death of Galen for discussion, which by many has been regarded as the most important of all—namely, the rise of Christianity. The title of this chapter is "The Influence of Early Christianity on Medicine," but Dr. Moon has grasped the fact that the common attribution of the sterility and mysticism of the medicine of the time was due to the great power of Orientalism in the early centuries of the Christian era. It was no part of Christianity proper to consider the body an evil worthless thing, that mistaken idea was a part of Persian Dualism. The Christian, considering that his body was the temple of the Holy Ghost, was led to temperance and clean

living, while the notion of the brotherhood of all men induced the care for the sick, which that astute ruler, the Emperor Julian, saw to be one of the strongest points in favour of the despised religion. Dr. Moon gives all credit to the early Christians for their zeal in this direction and instances the organisation known as Parabolani, mentioning the derivation of the title from $\pi\alpha\rho\alpha\beta\lambda\lambda\epsilon\sigma\theta\alpha\iota$ ("to throw oneself into danger"). Many years before the Christian era a high-souled pagan had enshrined in immortal verse the nobility of nature evident in tending the sick. In his description of the great plague at Athens Lucretius tells how many of those who stayed to nurse the sick caught the infection, and he says, "Optimus hoc leti genus ergo quisque subibat" ("In this way many of the best died"). This was the spirit taught by Christ, and medicine could have had no more direct advocacy.

The rise of the Arabian domination is dealt with in Chapter V., and then follows an account of the various influences affecting medicine in the Middle Ages. As a rule the influence of Aristotle dominated all thought, and even a fairly free thinking philosopher such as Peter of Abano commenced a medical work by stating that medical questions might be treated according to the four causes. Dr. Moon gives much credit to that remarkable man the Emperor Frederick II., for refusing to admit any one to practise in the kingdom of Naples before having passed an examination by the Medical College of Salerno. The Emperor showed his desire for knowledge in curious ways. Salimbene (1221-1288) mentions in his chronicle a singularly brutal experiment of Frederick. "He fed two men most excellently at dinner, one of whom he sent forthwith to sleep, and the other to hunt; and that same evening he caused them to be disembowelled in his presence, wishing to know which had digested the better: and it was judged by the physicians in favour of him who had slept." The horror of the proceeding was not obvious to a thirteenth century autocrat, and must not be allowed to detract from his merits as the author of medical registration in his kingdom.

The Middle Ages passed away and the Renaissance dawned, an era which led to vast improvements in medical science owing to the revival of the study of human anatomy. We say revival, for although Galen's anatomy was founded on the dissection of apes, Mondino and others in the thirteenth century had dissected human bodies in a perfunctory manner. Vesalius upset many of the Galenic statements by his researches, and in fact the whole spirit of the age was one which favoured inquiry by the adoption of the belief that a thing was not necessarily right because someone had said so. We make no attempt to follow Dr. Moon through his account of medical and philosophical progress in the seventeenth, eighteenth, and nineteenth centuries, but we may add that he gives a short précis of the various movements and schools of thought. As an introduction to a subject of vast interest to those of the medical profession who have leisure in the midst of their daily toil to study one phase of the history of their profession we can recommend Dr. Moon's primer.

We are quite in accord with him in wishing for the time when medicine in all her several departments might be brought to a focus, just as Wagner endeavoured to bring into one whole music, poetry, painting, and dancing. Medicine "brought to such a focus as to subserve the purpose of a sane and rational life," says Dr. Moon, should now work hand in hand with philosophy, when philosophy in her turn will take from medicine all that is saved through the ages from ignorance and chaos, and "gather them up into one vast generalised truth which will at length enable men to lead the lives of intellectual and moral beings."

LIBRARY TABLE.

Formulaire, Consultations Médicales et Chirurgicales. (Medical and Surgical Formulary.) Par M. G. LEMOINE, Professeur de Clinique Médicale à la Faculté de Médecine de Lille; et M. E. GERARD, Professeur de Pharmacie à la Faculté de Médecine et de Pharmacie de Lille; avec la collaboration de M. J. VANVERTS, Chirurgien des Hôpitaux de Lille. Quatrième édition, conforme au nouveau codex 1908. Paris: Vigot Frères. 1909. Pp. 916. Price 7 francs.—This volume is divided into two parts, in the former of which we find a list of drugs and chemical substances arranged alphabetically, and under each heading is given an account of the physical and chemical properties of the substance and of its therapeutic action and use, and also a description of the way it may be employed. most cases a few prescriptions follow containing drug. A chapter on Organo-therapy follows and a useful list of incompatibles is also given. The second portion of the work contains an alphabetical list of diseases and symptoms, and under each heading is given a very brief description of the symptoms, with an account of the general hygienic management of the disease, followed by a more elaborate description of the usual treatment. It is obvious that in a volume of this size we must not look for a very full account of the treatment of disease, but for its size it contains a very great deal. The treatments indicated are reasonable and they may offer useful suggestions in cases of doubt, and the prescriptions supplied are, on the whole, well designed. An account of the principal mineral waters both in France and elsewhere is included. The principal health resorts are also briefly described. The book will be likely to prove of great practical service to any medical man who can read French. We do not know of any work in English which exactly represents it.

Minor Gynæcology. By V. ZACHARY COPE, B.A., M.D., M.S. Lond. With 11 full-page photographs and 30 illustrations in the text. London: John Lane. 1909. Pp. 274. Price 5s. net.—The author has written this work for the purpose of dealing with those aspects of minor gynæcology which are of most direct value to the practitioner; for this reason special stress has been laid on diagnosis and treatment, while only those operations and procedures are described which are usually undertaken by the family practitioner. At the same time care has been taken to indicate the occasions on which the services of the gynæcologist are likely to be required. The various chapters are devoted partly to a consideration of the affections of the different pelvic organs and partly to a description of the meaning of different symptoms—thus, for example, there are chapters on menstrual disorders and pathological uterine bleeding—and the author has included several sections on points not usually Thus, he touched upon in works of this description. devotes a chapter to the nervous system in relation to, women's diseases and one to medico-legal and medico-ethical points in gynæcology. These are of considerable value since it is more especially the gynæcologist in the practice of his specialty, or the general practitioner undertaking such cases, who is likely to require advice on questions of this kind. The important legal considerations involved often in the examination of single women by the use of the sound and the possibility of women seeking medical advice in the hope of having a sound passed, and so abortion being procured, are dealt with, as are also the legal points involved in the performance of operations, and the medico-ethical relations of syphilis and gonorrhoea. No doubt there is a place for an elementary work of this kind and the author is to be congratulated on the clear and orderly manner in which he has presented the chief facts of the diseases affecting the female pelvic organs. It is a pity he has not taken a little more trouble about the spelling of

the names of the authorities he quotes; thus we find M'Cann for McCann, Schultz for Schultze, M'Naughton Jones for Macnaughton-Jones, while the statement that the fundus of the uterus is normally on a level with the plane of the pelvic inlet is incorrect.

A Guide to the Feeding of the Infant during the First Year. By J. W. SIMPSON, M.D. Edin., F.R.C.P. Edin., Assistant Physician, Sick Children's Hospital, Edinburgh. London: Simpkin, Marshall, and Co. Edinburgh: James Thin. Pp. 80.—This little book contains a careful discussion of the various methods of feeding an infant during the first year, written in simple language and stripped of needless technicalities. It is divided into two parts, the first dealing with breast-feeding, the second with artificial methods of dieting. The necessity for regular feeding and for strict attention to details is forcibly urged. The contra-indications to breast-feeding are given, and the subject of weaning is discussed in detail. Various methods of artificial feeding are described, with full directions as to the preparation of the food and the manner of giving it. Dr. Simpson rightly inveighs against the use of patent foods. He mentions various difficult conditions as regards feeding, and gives simple hints in regard to the domestic management of conditions such as vomiting, colic, diarrhœa, and constipation. We have nothing but praise for this book, which should be useful alike to young practitioners and to mothers, for it is practical and explicit in its recommendations.

How to Become a Nurse: the Nursing Profession, How and Where to Train. Edited by Sir Henry Burdett, K.C.B. London: Scientific Press. Pp. 463. Price 2s.—This guide may be thoroughly recommended to young women contemplating a nurse's career. There is an introductory chapter on advice to women desirous of becoming nurses, which is simple, sound, and discreet; chapters on the chief branches of nursing and the remuneration which may be expected; general information as to training schools; and a very full directory of institutions for training and employment of nurses. This directory fills nearly 400 pages, and is well revised and up to date. There is a chapter on the working of the Central Midwives Board, in which Sir Henry Burdett shows a wise and non-committal attitude in his valuation of the working of the Act.

JOURNALS AND MAGAZINES.

Archives of Neurology and Psychiatry. From the Pathological Laboratory of the London County Asylums, Claybury, Essex. Vol. IV. Edited by F. W. MOTT, M.D. Lond., F.R.S., &c. London: P. S. King and Son. Pp. 330.—This volume of the Archives opens with an interesting article by Dr. Henry Mandsley on the subject of "A Mental Hospital-Its Aims and Uses." The establishment of such a hospital is advocated with the author's usual force and clearness. "Exaggerated apprehensions of danger and the common notion of insanity as a disgrace to be concealed or put out of sight, rather than a disease to be soon and wisely dealt with, are still responsible for much neglect of early attention and for many impediments in the way of its proper care and treatment. If a mental hospital, in close touch with the general hospitals and medical schools, helps to instil the notion of disease and to dispel unwarranted prejudices it will not have been built in vain." It is with regret that we notice that time passes by and little or nothing seems to be done by those entrusted with the management of Dr. Maudsley's munificent gift dedicated to the foundation of such a mental hospital in London. For a large proportion of the articles in this volume Dr. Mott is himself responsible, and of these three are given to describing the effects of syphilis upon the nervous system. The first of these consists of the Morison Lectures delivered at the beginning of this year before the Royal College of Physicians of Edinburgh, which contain an admirable résumé of our present knowledge of the subject. In another article Dr. J. P. Candler as a result of a research of a year's duration comes to the conclusion that the assumption that a particular group of diphtheroid organisms acts as the specific factor in the production of general paralysis is unwarranted and has not yet been substantiated by any published record. A particularly interesting article is that of Dr. C. U. Ariens Kappers of Amsterdam upon the Phylogenesis of the Palseocortex and Archi-cortex compared with the Evolution of the Visual Neo-cortex. Comparing his work with that of Dr. Mott, the author is of opinion that we find nearly the same principles as well in the progressive development of the palæo- and archi-cortex as in the progressive evolution of the visual neo-cortex. The volume contains many excellent illustrations.

The Dublin Journal of Medical Science.—The October issue of this journal is an "Educational Number" in which some 30 pages are devoted to a consideration of medical education and examinations in Ireland. Dr. Robert J. Rowlette contributes a Pathological Report of the Rotunda Hospital for the year ending Oct. 31st, 1908, and Dr. G. Jameson Johnston reports a case of retro-peritoneal sarcoma in a youth aged 21 years. Surgeon-Colonel D. Edgar Flinn gives an account of an outbreak of enteric fever at Clontarf in which the mode of dissemination was difficult to trace, but was in all probability by means of infected milk.

West London Medical Journal.—In the October number is published a very interesting and useful presidential address by Dr. Nev'lle Wood on Spa Treatment, an abstract of which appeared in the last issue of The Lancet. Mr. C. B. Keetley contributes the first instalment of some historical notes on the West London Hospital and people connected with it, among whom are noted Mr. Teevan, Dr. Thorowgood, Sir Alfred Cooper, Mr. J. Astley Bloxam, and Mr. Bowater J. Vernon. Notes of a case of Double Pneumonia followed by Empyema and Peripheral Neuritis are given by Mr. H. W. Chambers; and a case of Perforating Ulcer, which was the first symptom of tabes dorsalis, by Mr. D. C. L. Fitzwilliams.

The Midland Medical Journal.—The original matter in the October number of this journal consists in an abstract of a post-graduate lecture by Dr. Leonard G. C. Mackey on Bacteriology in the Diagnosis and Treatment of Disease. It gives a short account of recent work on opsonins and vaccines, and insists on the importance of a bacteriological examination of the blood to ascertain the actual germ at work in every case.

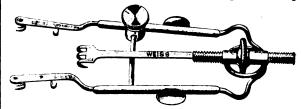
The Archives of the Roentgen Ray continues to occupy the foremost place among those papers bearing on its subject and published in the English language. Its prominent position in the X ray world is almost entirely due to the energy and enthusiasm of the editor, Mr. W. Deane Butcher. It is also due to the excellent form in which the paper is issued to its readers; and until recently, at least, no better reproductions of skiagrams were to be found anywhere. In the October number, which is now before us, we observe that the illustrations are being reproduced by an apparently different process from that in use heretofore, and we take the liberty of saying that the change is not for the better. We trust that it is due to a temporary arrangement, as these Archives are worth the best form that can be given them. In the text we find an article from the editor's pen bearing upon the risks attending Roentgen epilation. He comments upon the singular unanimity among experts in this country as to the harmlessness of the procedure, although many of the leading radiologists abroad, where X ray therapeutics are more extensively practised than in

this country, are by no means so sure about the The plea for caution is justified until further experience has been gained. An article follows by Dr. Walter of Hamburg on the Measurement of the Intensity of Roentgen Irradiations. In these days, when most radiologists pin their faith to the Sabouraud pastille, it is interesting to note that in the opinion of so great a worker as Dr. Walter "the most accurate and the most universally applicable means of dosage hitherto available is the simultaneous use of the milliampèremeter for the quantity and some scale of hardness for the quality." Dr. Alban Köhler of Wiesbaden describes a method of Deep Irradiation without Permanent Injury to the Skin. To attain this end he uses an X ray tube so constructed that the rays come from a comparatively large surface on the anticathode instead of the usual point, the radiating surface being from 1 to 1½ centimetres in diameter. A filter of leather is placed on the skin, and upon this a metal gauze made of No. 36 iron wire and 14 meshes to the inch. The X ray tube is adjusted a few centimetres above the gauze. "By this device we obtain a perfectly uniform irradiation at a certain definite depth, as uniform as if there were no metal network between the focus tube and the irradiated tissue." In this way he can give ten times the erythema dose, and while the exposed cutaneous cells are destroyed yet each little area so destroyed is surrounded by healthy uninjured tissue and healing rapidly follows. The idea is a novel one, and should be fully investigated. Dr. A. Béclère of Paris gives his experiences in the Radio-therapeutic Treatment of Tumours of the Hypophysis, Gigantism, and Acromegaly, in which he appears to have had some success. Mr. T. G. Beckett of Melbourne describes an ingenious method for regeneration of X ray tubes which he has found quite satisfactory for over three years. Like one recently brought forward by Bauer, it works by allowing a small quantity of air to leak in through a fine fissure or fissures which are normally covered by mercury. The arrangement is easily made, is efficient, and in a dry climate ought to be quite satisfactory. The possibility of water vapour getting in must be reckoned with in a climate like that of the British Isles, as it is known that such is prejudicial to the best work. The rest of the number is taken up with reports of societies, reviews, and an abstract of current literature.

Rew Inbentions.

A RETRACTOR FOR USE IN EXCISION OF THE LACRYMAL SAC.

Some form of retractor is almost a necessity in performing Firstly, to the operation of excision of the lacrymal sac. open out the incision which is awkwardly situated in a narrow place betwixt the inner canthus of the lids and the side of the nose; and secondly, because efficient traction on the tissues provides the best means of checking bleeding. At present Müller's and Axenfeld's tractors are the most generally used. The instrument shown in the illustration combines the actions of these two forms of retractors. The frame is that of Müller and it is no larger than his neat model. But by an alteration of the prongs at the extremity of the laterally-acting blades and the addition of a claw (something like an old-fashioned "back scratcher"), which can be drawn back by the milled nut at the spring end of the frame, this retractor will exert the powerful tractor action of Axenfeld's instrument and yet leave the upper end of the site of the operation free. In inserting the new retractor the instrument should be first closed, the blades approximated, and locked by a turn of the side check-screw, and the long claw pushed home to just behind the side prongs of the lateral blades. The claws are inserted into the wound just as in using Müller's instrument. Now the side check-screw is released and the blades, being forced apart by the spring of the frame, stretch the incision laterally; the side check-screw should now be firmly locked. The blades are then gently pressed into the wound by one finger and the milled nut at the spring end of the frame turned so as to draw back the long claw; the front claws on the blades are pivoted and so shaped that they oppose the backward drag of the long



claw, so that the incision is stretched tight. The field of the operation is well exposed and the traction exerted on all sides of the wounds acts as a most efficient hæmostat, yet the important upper limit of the wound is left quite free of any obstruction that would hinder the work of the surgeon.

The instrument is made in excellent fashion by Messrs.

John Weiss and Son, Limited, 287, Oxford-street, London, W.

Harley-street, W.

N. BISHOP HARMAN.

BRITISH MEDICAL BENEVOLENT FUND GUILD.

A MEETING was held at the house of Sir John Tweedy, 100, Harley-street, on Thursday, Oct. 28th, for the purpose of inaugurating a Guild in connexion with the British Medical Benevolent Fund. The object of the Guild is to make the fund more widely known and to obtain additional support for it, especially from women, and to supplement its work by giving help and practical sympathy to the beneficiaries of a more personal character than is possible for the parent fund. Sir John Tweedy presided, and among those present were

Sir John Tweedy presided, and among those present were Lady Tweedy, Sir William and Lady Church, Lady Barlow, Mrs. Butlin, Mrs. Scharlieb, Mrs. Rose Bradford, Lady Fripp, Mrs. West, Mrs. Liveing, Mrs. Godlee, Mrs. Croker, Lady Critchett, Dowager Lady Broadbent, Lady Broadbent, Miss Broadbent, and Dr. S. West.

Sir John Tweedy said that there was appalling distress among the poorer members of the medical profession, and without some such help as this Fund had been able to give hundreds of wives, daughters, and sons of practitioners would have had to face extreme poverty and destitution.

Lady TWEEDY gave particulars of cases of distress among the families of many members of the medical profession, and urged that in the new Guild ladies should be the missionaries of the Benevolent Fund. The Guild proposed to visit and take personal interest in the cases recommended by the executive committee of the Fund, to make gifts of clothing and other necessaries, and to do such other work as might from time to time seem desirable and be approved by the executive committee of the Fund.

Dr. West said that while the Fund would deal with money the Guild would give not money but money's worth. State aid sapped private charity, and many people had begun to feel that as they were compelled to contribute to old-age pensions they would now give their voluntary contributions not to the so-called working class, for which so much was already done, but to the poor of their own class. There could be no worthier object than the relief of the poor members of the medical profession, and the Guild appealed for support not to the medical profession only but to the public at large, upon whom it has such strong claims.

Dr. WEST then proposed a motion that such a Guild should be established. This was seconded by Lady CHURCH and carried unanimously.

The following officers
Dowager Lady Broadbent.
Chairman: Lady Tweedy.
Were appointed:—President:
Treasurer: Dr. Mary Thorne.
Honorary Auditor: Mr. Knox,
with a council and various committees.

The Guild was to consist of members who paid not less than 10s. 6d. annually and associates who paid not less than 2s. 6d. annually.

Subscriptions and donations to the Guild may be sent to Lady Tweedy, 100, Harley-street, London, W., and to Dr. Mary Thorne, 148, Harley-street, London, W. Paroels of clothing, &c., may be sent to 11, Chandos-street, Cavendish-square. Letters and communications should be addressed to the Secretary, 100, Harley-street, London, W.

LANCET. THE

LONDON: SATURDAY, NOVEMBER 6, 1909.

The Relation of the Medical Practitioner to the Practice of "Christian Science."

THE latest death due to "Christian Science," which has attracted attention owing to the publicity accorded to the inquest in the newspapers, is that of Colonel CHARLES ALEXANDER, a retired military officer. It was stated before the coroner that Colonel ALEXANDER, who was only 55 years of age, had enjoyed robust health, but had recently had an attack of influenza and a hunting accident. Apparently his practice of "Ohristian Science," which cult he professed, did not result in a very complete recovery from the influenza, but a more severe test of his faith and of the self-confidence of the "healer" occurred when he developed variouse ulcers on his legs. These developed in due course to a serious extent and it was stated at the inquest that they were washed but that no further treatment was accorded to them. On Monday, Oct. 25th, they were evidently worse than they had been before and his general condition was bad. Mrs. CAROLINE PAULINE MACDONALD, a "Christian Science healer." residing in Drayton-gardens, was consequently summoned by the patient's wife, he having refused to see a medical man. It is fair to both Mrs. ALEXANDER and Mrs. MACDONALD to say that according to their evidence the patient refused to have medical aid. Mrs. MACDONALD, however, appears to have been sufficiently aware of the serious condition in which Colonel ALEXANDER was and of the responsibility which might attach to herself in the case of his death, to advise the summoning of a medical man with the intention, however, that he should make a diagnosis of the case for the satisfaction of the relatives but should not administer treatment. The patient approved of her sending on these grounds for a medical man whom she knew, but this gentleman refused to attend in the circumstances. Monday, therefore, and Tuesday passed without the patient, whose perilous condition was obvious, receiving medical advice. On Wednesday, Oct. 27th, a medical man was summoned, who, according to his evidence, found the patient suffering from varicose veins and ulcers. He suspected that gangrene had set in and he formed the opinion that whatever steps might be taken it was then hopeless to attempt to save life. He was not asked to attend the patient or to give any treatment, but only to diagnose the case. In the evening he learnt that Colonel ALEXANDER was dead. Dr. B. H. SPILSBURY, who made a post-mortem examination, stated, as the result of it, that death was due to syncope following acute blood poisoning set up by the ulcers. To this he added, in reply to the coroner, that taken in reasonable time such ulcers should have been amenable to medical treatment, and accelerated death, a view which the jury adopted in their verdict, but rightly laying the responsibility of refusing medical aid upon the deceased himself.

So far as "Christian Science" is concerned this last case adds to its tragic chronicle the record of the unnecessary death of a man in the prime of life. Colonel ALEXANDER contributed fully to bring about his own untimely end, but Mrs. EDDY, the high priestess of the cult, and Mrs. MACDONALD, who allowed herself to pose as a "healer" of that which she had no power to heal, played their parts in the tragedy, as did the whole host of other persons with whose folly the deceased associated himself. And as there is no ground for hope that this case will be the last of its kind, the position of medical men summoned to make a diagnosis in such circumstances may be usefully considered. What the motive for such a summons may have been in this particular case is not quite clear. Something was said at the inquest about the probable feelings and views of relatives who were not "Christian Scientists," and perhaps consideration of such family feeling had its influence, but it is safe to presume that on occasions of this kind the question of the procuring of a medical certificate of the cause of death is not absent from the mind of the "healer" whose patient, instead of being healed, is apparently moribund. Two medical men in succession were invited to attend Colonel ALEXANDER, the first refused, and the second consented to go. The one who refused, who was claimed by Mrs. MACDONALD as an acquaintance, probably knew better what to expect than his colleague, and none can blame him for declining to take part as an ineffectual onlooker at a death-bed, with the almost certain consequence of attendance later at an inquest. On the other hand, we do not see that the medical practitioner who obeyed the summons could act in any other way than he did. If we weigh the considerations which should influence the medical practitioner who receives such an invitation, and if we assume that he has knowledge of the fact that a "Christian Science healer" will be present at the bedside and that there is no intention on the part of the patient or of the relatives to allow medical intervention, we must still remember that in the face of imminent death opinions and intentions may waver, and that it is the medical man's duty to save life where it is in his power to do so. In the circumstances imagined he may find a patient in such a state that it will be his duty to say to a wife, to a husband, or to a parent, "Here is a life that is being sacrificed; without medical aid death must come within a short period, but it may be averted." The alternatives so offered, not, perhaps, in the precise terms we have used, but with unmistakeable clearness and with gentle but firm insistence, would be a severe test of the faith of the "Christian Scientist," and the infatuation, which so often has allowed near and dear relatives to die without remonstrance or effort to save them, might relax. We may picture the case, moreover, as that of a patient who, in the early stages of disease, declined medical aid, but who, when that aid is at hand, lies unconscious and unable to feel or to express either dissent or assent. It would be a heavy responsibility that would then rest on those around him, and we believe that it would be the duty of the medical man to that in his opinion the absence of such treatment had lay its full weight upon their shoulders. His first effort,

however, would be to make those representations which would be most likely to procure for the patient medical aid and nursing with a view of prolonging life or of alleviating suffering.

We have referred to the possibility of a medical man being called in by "Christian Scientists" with the intention that he shall facilitate burial by certifying the cause of death, although he has not been allowed to treat the patient. In such circumstances it may, perhaps, be within his discretion either to refuse a certificate or to sign one naming the illness and adding that death was accelerated by neglect. We do not, however, recommend the latter course, as we are of the opinion that the mere opportunity for diagnosis cannot reasonably be regarded as attendance during the last illness within the meaning of the Births and Deaths Registration Act, 1874, and because the refusal of the certificate is more in accordance with the present practice. The result is that the attention of the coroner is drawn to a case in which deliberate neglect to procure medical aid has apparently assisted "natural causes," and an inquest is rightly held in order that all the facts connected with such a death may be ascertained.

Traumatic Late Apoplexy.

WHEN a man dies with cerebral symptoms soon after an injury to the head little doubt can be felt as to the causal connexion between the injury and the fatal issue, though even here it is possible that nothing more than a coincidence has occurred. When, however, a definite interval of apparent health, complete or almost complete, has intervened between the infliction of the injury and the occurrence of those symptoms, and the symptoms pass rapidly on to death, much doubt must arise as to whether the injury really was the cause of death. The old common law used to recognise a limit of a year and a day; if this period of time elapsed between the infliction of an injury and the death, the doer of the injury was not held accountable for the fatal result that followed. Whether, however, such a principle still holds in English law we leave the lawyers to decide. Cases have, however, from time to time been published where after the infliction of an injury of the head a very definite interval of almost complete health has followed, and has lasted for several weeks or even months, but at last the patient has died with symptoms pointing to a cerebral lesion, while at the necropsy sufficient evidence has been found to lead the observers to the conclusion that the original injury was really the ultimate cause of death. The whole subject is of great interest both surgically and legally, and may well repay a little consideration.

In 1878 DURET reported a series of experiments which he had made with regard to the effects on the brain of severe blows on the skull. These experiments were followed by lacerations and foci of softening in the neighbourhood of the lateral ventricles, of the aqueduct of Sylvius, and of the fourth ventricle. There was no doubt about the lesions produced, but there was less certainty about the correct explanation of their mode of production. Durer ascribed them to the alteration in shape of the lateral ventricles by which the cerebro-spinal fluid was, or might be, driven and then the child became more drowsy, but about five weeks

violently from them into the third and fourth ventricles, and where these channels are the most narrow there the lesions are found, because, he considered, that there the pressure would be greatest. In 1891 BOLLINGER of Munich published four cases in which death occurred at a late period after an injury to the head. The injury did not lead to unconsciousness, and during the latent period the patients were able to follow more or less satisfactorily their usual lives, and in each of the cases cerebral lesions were found corresponding in part to those described by DURET. For these cases BOLLINGER invented the title of "Traumatic Late Apoplexy." Cases such as these certainly do occur, though they are rare, and the name has been applied especially to those in which there is found a subdural hæmorrhage resulting from the brain lesion, and Bowen has collected 72 instances of "Traumatic Subdural Hæmorrhage." Bollinger employed Durer's experiments and theories to explain the cases he described. The main points on which BOLLINGER insisted were the absence of loss of consciousness, the capability to follow the ordinary mode of life during the latent period, which in his cases lasted from 12 to 52 days, and, lastly, the post-mortem findings. These explanations failed to satisfy STADELMANN, who, in 1893, pointed out that softening foci in the brain are frequently spontaneous in men who are getting on in years. And he urged that it is very dangerous to accept the causal relation between trauma and cerebral softening when a long interval has occurred between them. He was therefore led to lay down three criteria. applicable to cases of traumatic late apoplexy. Before the injury occurred no sign of ill-health should have been present, no alteration in the blood-vessels should have existed, syphilis, nephritis, alcohol, and heart disease must have been excluded, and cases occurring in the old must be left out of consideration because in advanced age arterio-sclerosis spontaneously caused is very common. He thought it advisable also to insist that the injury must have been great, and lastly, that the signs of disease must have developed within a short time and under observation. Several other papers have appeared on the subject, and much of the discussion which has taken place has been based rather on theoretical considerations than on the direct observation of cases.

We publish in this issue of THE LANCET an apposite case. For the full particulars we refer our readers to Dr. A. H. MILLER'S paper. Here we will merely summarise A child in perfect health was struck on the the facts. head with a stone held in the hand of another child. No unconsciousness followed though there seems to have been a little dizziness. She cried a little but she was able to walk home without assistance. No skin lesion resulted, but when she reached home she seemed to be a little drowsy and wished to lie down. For the next fortnight she was fairly well, though she showed some fretfulness and complained of headache, but she was able to go to school for two half days. The first definite symptom that appeared was slight drooping of the right upper lid, which was noticed four days after the accident. Ultimately the right third nerve became completely paralysed

after the accident she grew much brighter and was allowed to get up. Six weeks after the accident the right fourth nerve was also completely paralysed, and she was very drowsy. A week later suddenly she became semi-conscious and died 12 hours later. At the necropsy a large hæmorrhage was found covering both cerebral hemispheres, and on the under surface of the right temporal lobe was a small irregular cavity filled with blood formed by the breaking down of softened brain substance. It is clear that this case fulfils most of the conditions laid down by STADELMANN, though the initial violence was not great. But the site of the softening bore no relation to the ventricle, though it corresponded to the antipodes of the site of injury, and Dr. MILLER is inclined to ascribe the lesion in the temporal lobe to the agency of cerebro-spinal fluid and not to "contre-coup." For, as he explains in his paper, he considers that the wave of cerebro-spinal fluid set in motion by the blow would distend the cisterna basalis and would spread over the inner and under surface of the right temporal lobe, rupturing the small vessels suspended in the cerebro-spinal fluid in the meshwork between the arachnoid and the pia mater, and these vessels being torn and blocked by clot, there would result a loss of the blood-supply of the cortex of the brain adjacent to them, giving rise to softening. We have been much interested by the explanations put forward by Dr. MILLER, and if they are sound they would doubtless serve to explain many cases of traums of the base of the brain which are usually ascribed to "contre-coup." More cases must be reported before any dogmatic statement can be made, and any similar good examples of the long interval which may elapse between the infliction of a comparatively slight head injury and the occurrence of a fatal result should be published. When fair health has existed in the interval between the injury and the death it is difficult to overestimate the importance from a medical and legal point of these cases. They offer points of great clinical and pathological difficulty and cause much conscientious hesitation on the part of those called upon to give expert evidence in a court of law. As far as the patients are concerned, also, the more widely our knowledge of such injuries extends the more chance will there be of lessening the difficulty of prognosis. It has well been said that no head injury is so slight that it can be safely neglected, nor so severe that it need be despaired of. We are indebted to Dr. MILLER for his valuable report of a rare condition in a form which is a definite addition to our knowledge.

The Work of the Association of Public Vaccinators.

THE annual meeting of the Association of Public Vaccinators of England and Wales, which was held at Liverpool on Oct. 29th, and whose proceedings are briefly reported in another column, marked the conclusion of the tenth year of the existence of a body which may well be congratulated on the vitality which it manifests and the position to which it has attained. The elaborate report of the secretary of the association, Mr. GREENWOOD, gives a minute survey of the work of the association during behalf of the urban boroughs, and Mr. A. MAUDE on

its ten years' existence, years throughout which a continual attempt has been made to discredit vaccination in the eyes of the people and of the legislature. We can think of no branch of work in the medical or in any other profession which has sustained such organised, continuous, and baseless attacks, and in spite of all the work of the public vaccinator has been throughout well and loyally performed. The sterling strength and sense of some of the officials at the Local Government Board have here been of great support, but we must not fail to realise the additional help to the cause of vaccination which the Association of Public Vaccinators has exercised. If full support had been given to the association by the majority of public vaccinators the danger to the public health which exists owing to the presence of so many unvaccinated persons in the country would be enormously minimised, and public vaccinators themselves might possibly be in the enjoyment of some fixed tenure of office, instead of being liable as they are now to dismissal at four weeks' notice by the board of guardians.

The medical profession has much to think of, but of that profession some 12½ per cent. in this country are public vaccinators, and it shows no great enterprise that the active work and financial support of the Association of Public Vaccinators should be left to a small hardworking minority. On this point Mr. GREENWOOD speaks in trenchant terms, and his strictures are of greater value in that he is not a medical man, but a solicitor of wide business experience, who views (for the secretary's report to the Council of the Association of Public Vaccinators is, we believe, entirely his personal work) with some astonishment the lack of unity in the medical profession. Mr. GREENWOOD is not the first person to have this feeling. In the report there will be found an historical survey of the work performed in ten years. The association was started to watch the interests of vaccination and vaccinators during the drafting of the Act of 1898. Its suggestions and recommendations were received in a generous manner by Mr. HENRY CHAPLIN, then President of the Local Government Board. A complete register of public vaccinators was made and has been since maintained. In 1901-02 local sub-secretaries or correspondents were appointed, one roughly representing each union, and an exhaustive report was compiled containing the opinions of the Council of the Association upon the administration and practice of vaccination and the changes desirable in it. The association, having the interests of its members before it, naturally opposed the principle of State payment for vaccination to other medical men than its members, but it must always be remembered that, as vaccination is in the hands of the medical profession as a whole, no untenable claim by the public vaccinators to a monopoly has been In 1903 came the cry from boards of put forward. guardians with regard to the expenses of house-to-house vaccination, with its attendant notices, reports, and reiteration of visits; and a Departmental Committee sat to investigate the question. Three witnesses were allowed to give evidence for the public vaccinators-viz., Dr. A. E. COPE representing London, Dr. A. DRURY on behalf of the rural districts of England and Wales. Their evidence covered 18 pages of the Blue-book, they answered 646 questions in the witness chair, and occupied that chair for the whole day. Returns on various points had been obtained from 800 public vaccinators, and these were sifted and tabulated by the witnesses and submitted in evidence. The report of the Departmental Committee was made in May, 1905, and in the same month the Association of Public Vaccinators, having appealed to the Local Government Board in vain for the issue of literature which should enlighten and instruct the public upon the law and practice of vaccination, proceeded to do that work itself. The association printed and published an excellent popular pamphlet, "The Truth about Vaccination," of which 75,000 copies were distributed before the close of the year. In May, 1907, however, the President of the Local Government Board issued an Order reducing the fees of all public vaccinators, though the action was not in accord with the recommendations of the Departmental Committee, which had also made suggestions to relieve public vaccinators from unnecessary and unpaid work. Mr. Burns has shown during his tenure of office great sympathy with medical aims and an enlightened conception of the claims of preventive medicine, and we do not think that he saw that by his Order many public vaccinators were handed over to the tender mercies of anti-vaccination guardians. There were certain facts, and unfortunately one or two scandals, which made the course taken by the President of the Local Government Board a probable one, but the results to some 3000 hard-working medical men could not have been foreseen by him. The work of the Association of Public Vaccinators has been rendered proportionately difficult by the existing condition of affairs.

An important memorial was offered to the President of the Local Government Board in May, 1908, and representations are still engaging the careful consideration of the Department, the question of the security of tenure of the office of public vaccinator especially pressing for settlement When Dr. DRURY of Halifax took office as President of the Association of Public Vaccinators in 1908 a new sphere of work was undertaken in the form of direct propaganda in favour of vaccination. Replies were made to the unscrupulous statements of the antivaccinationists in the public press; the President and other officials appeared at meetings to defend the principle of vaccination, and an excellent pamphlet on the "Prevention of Small-pox" was largely circulated. Some valuable suggestions for spreading a proper knowledge of the subject were also made by the secretary. In the first three years of its existence the numbers of the association rose from 340 to 970, and they have remained much at that level, but it is not to the credit of public vaccinators that this figure is below one-third of their number. The fact that the work of the association increases is shown by the mere details of the labour undertaken in its secretariat; the fact that the active members of the association have continued and increased the amount and scope of their work is proof that they, who are the best judges of the question, consider their work worth doing, for there is only one paid official; surely one-third of the public vaccinators should not be left to provide labour and finances for the rest of their fellows, especially as a graduated subscription is levied in proportion to the empluments of the subscribers.

Annotations.

"Ne quid nimis."

EPIDEMIC ABORTION IN CATTLE: A STUDY IN VETERINARY BACTERIOLOGY.

THE report of the Departmental Committee appointed in 1905, under the presidency of Professor (now Sir) John Macfadyean, to inquire into the causation of epizootic abortion in cattle has been issued recently, and confirms in a very complete manner the researches of Professor Bang on the same subject. Bang in 1897 had described as the causal organism of this condition a very small non-motile, non-Gram-staining bacillus which he found in the exudate bet een the fcetal membranes and the uterine mucous membrane, and also in the stomach and the blood of the fœtus. The report points out that even after several months of infection the disease may be localised to one spot of the uterus, and in one case even where there was a twin pregnancy one horn was considerably affected, while the other was apparently healthy. The bacillus was best found in the exudate around the fœtal membranes and here were seen small bacilli, oval or rod-shaped, sometimes lying singly but in many cases being markedly clumped. This clumping is attributed to the agglutinating action of the animals' serum, and it is one of the characteristics of the bacillus when grown on serum media. Bang had described the bacillus as growing in a shake culture only in a definite zone of the tube (from ½ to 2 centimetres below the surface), but the English cultures were found to grow best either on or just underneath the surface. The bacillus grew on all the ordinary media, but the agar-gelatin-serum medium which had been used by Bang was found the most favourable. Ordinary agar, on which Bang had failed to obtain cultures, was found to give good growths, although they took ten days or more to appear. On potato a growth was obtained very closely resembling that obtained with glanders. The organism only grew between 30° and 37° C. and it was destroyed by heating for ten minutes at 60°C. As regards the methods of spread of the disease some interesting facts come to light. The two natural modes of infection are by the vagina and by the mouth, and when animals were experimentally infected by these routes it was found that whereas by the vaginal method five gave positive results and three negative, when the animals were fed with virulent material three gave positive results and only one failed to become infected. This, then, would point to the food being a very important factor (if not the most important) in the spread of the disease. No opportunity occurred to test whether a clean cow could be infected by a bull which had recently served an infected cow. The committee succeeded in infecting all of eight cows by experimental intravenous inoculation, while three out of five became infected when large quantities of infective material were injected subcutaneously. While they are of the opinion that bovine abortion is essentially a disease of cattle and is not likely to spread to other animals, yet it was found possible to infect experimentally animals such as ewes, goats, bitches, and guinea-pigs. In the absence of an Order requiring the disease to be reported, it was impossible to obtain exact figures as to its prevalence, but the committee has established from bacteriological examinations that it was present on 55 farms in 36 counties in Great Britain, so that it must be common. The disease runs a chronic course, and there are no symptoms by which it may be recognised. The agglutination test was found to be untrustworthy. The subcutaneous injection of an "abortin" prepared from the basillus after the antenner

of tuberculin, however, has given promising results, as also has the "complement fixation" test of Bordet and Gengou. It was attempted to immunise non-pregnant animals by means of large doses of the living cultures of the abortion bacillus, but the results have been disappointing in the case of ewes with which most of the experiments were done. In the case of cattle, however, the two immunised animals tested both resisted successfully the intravenous inoculation of large quantities of infective material, while all of the non-immunised animals became infected. Treatment of infected cattle by means of vaccines also gave very promising results, two of the three animals treated being cured, while in one case the treatment failed. The details of the experiments are given in an appendix to the report signed by Sir John Macfadyean, who investigated the subject at the Royal Veterinary College, of which he is principal, and Mr. Stewart Stockman, chief veterinary officer to the Board of Agriculture, who had charge of the bacteriological investigations at the Board's laboratory and experimental farm. These observers are to be congratulated on having firmly established the causative agent of epidemic abortion in the herds of Great Britain, and their researches afford a foundation for measures which should eventually eradicate or diminish a disease of great importance to the agricultural community.

ALPINE MISADVENTURES DURING THE LAST TWELVEMONTH.

FROM Oct. 15th, 1908, to the same date of the present year, the deaths due to misadventure on the Alps (Swiss, French, and Italian) were no fewer than 84-a figure which seems to justify the Roman journalist in remarking that what Sir Leslie Stephen called the "playground of Europe' might more fitly be styled its "graveyard." The statistics from which this return is taken, compiled at Domodossola and just communicated to the press, set forth that the greatest number of casualties befel the Swiss and the Germans next in order were the English-speaking "Alpinisti," then the French, and finally the Italian. But if the last-named nationality figures lowest on the numerical side it takes highest place on the tragic, no misadventure of the twelvemonth equalling that of the three intrepid Milanese "peak-stormers," the Signori Sommaruga, Bompadre, and Castelnuovo, whose fate seems to have been identical with that of Signor Marinelli Damiano, who, with the two guides Imseng and Pedrazzini, was engulfed past all recovery in one of the crevasses of the Monte Rosa. Search parties, strong in numbers and equipment, succeeding each other at short intervals, have in both cases had to return from the quest baffled and disappointed. Next to the Monte Ross, on one of the many lichen-frescoed façades of which might be inscribed the warning-

"Mitte sectari Rom quo locorum Sera moretur!"

the Ragno-kulm, in the Valle Vigezzo, seems to have been the deadliest lure, drawing to his destruction the Genoese Signor Enrico Cavallo, just when the pious care of their bereaved parents had renewed upon its rocks the tablet recording the tragic end of the brothers Zoja. On the Swiss side, the Jungfrau still maintains her sinister priority in tempting climbers to their doom-six casualties being registered this year to her account. In nearly every case the false economy which dispenses with an experienced guide is primarily to blame, and next to that the foolhardihood which attracts the nature-student to a rare flower or mineralogical specimens on the brink of an abyss. Refuges such as those in course of erection by the Paduan Alpine Club on the Venetian ranges are well inspired, particularly when available on the sudden descent of a mist; but nothing can excuse the lack of precaution which leaves the skilled

guide out of account or which neglects the personal equation in the matter of bodily fitness for the climb. This latter condition is, as THE LANCET and its contemporaries, Swiss and Italian, have often pointed out, one of vital importance to the mountain climber, particularly when approaching the meridian of a life passed in sedentary work. Half an hour's interview with a physician previously to essaying a mountain ascent would have obviated many a casualty, due ostensibly to misplaced footing but really to cardiac lesion and cardiac failure.

ENTERICIN IN THE TREATMENT OF ENTERIC FEVER.

WE have received a copy of the Transvaal Medical Journal for March containing a paper by Mr. John Maberly of Woodstock, Cape Colony, relating his experience with a drug to which he has applied the name of "entericin" in the treatment of enteric fever. He published a paper in THE LANCET in February, 1897, on the use of a tincture of Monsonia biflora in dysentery, and the results he obtained encouraged him to try this drug in cases of hæmorrhage in enteric fever, with effects which he claims justified his expectations, so that he made it a matter of routine to administer this drug to all his cases in the third week of the disease. During the Boer war of 1900-03 he introduced the drug to the notice of Dr. W. Darley-Hartley, who employed it in cases under his charge in the Military Hospital at Woodstock. Dr. Darley-Hartley in a letter written to Mr. Maberly in July, 1903, stated that he found nothing so effective in the treatment and prophylaxis of hæmorrhage in enteric fever and that he never lost a case from this complication when tincture of Monsonia biflora had been given as a prophylactic, which he came to regard a routine in the latter part of the second and in the third week of the disease. Mr. Maberly wished to employ this treatment in the earlier stages, as he believed it would afford a curative method of treatment, but the peculiarly constipating effect of the drug in this disease proved a great objection. He therefore endeavoured to separate the active principle, and after many failures he succeeded in 1905, with the aid of an analytical chemist, in isolating a body which he describes as of stable but indefinite composition, to which he has applied the name of entericin. In the paper before us he records his results in four cases of enteric fever. The first case was in a young woman five months pregnant who was first seen on the fifth day of the disease. She was given 2 drachms of entericin every six hours, the temperature became normal on the sixteenth day of the disease, and her pregnancy went on to full term. In the second case the temperature became normal on the seventeenth day of the disease after 11 days' treatment with entericin, and in the third and fourth cases it became normal on the fifteenth day after nine and six days' treatment respectively. The cases were not kept on a rigid milk dietary, as strained meat, soups, milk, custards, jelly, and soaked biscuits were allowed. All the cases gave a positive Widal's reaction, and there were other cases of enteric fever in the district, some of which proved fatal. In the May number of the same journal Dr. R. P. Mackenzie, superintendent of the Johannesburg Hospital, records a case treated by the same drug. The patient was given doses of ½ drachm every six hours. After some days he complained of griping after its administration and it was stopped, but was resumed in doses of 1 drachm every four hours on the next day owing to the appearance of blood in the motions. No further hæmorrhage occurred. In the July number Mr. Maberly reports two further cases in which the treatment was commenced in the early stage before Widal's reaction had developed, and in both of them the dose was increased to 2 drachms every four hours. In one

case the temperature remained permanently normal after the eighth day of the illness, while in the other after the seventh day there was an irregular fever lasting several days. In both cases Widal's reaction became positive during the course of the illness. Mr. Maberly rightly deprecates the drawing of definite conclusions from so small a number of cases, but he is encouraged to hope that entericin gives promise of being a valuable drug in the treatment of enteric fever. The evidence he offers of its value is sufficient to warrant a more extended trial, and it is to be hoped that he will give details of the manner of its preparation with a view to this object being carried out.

THE ADMINISTRATIVE TREATMENT OF PULMONARY TUBERCULOSIS IN GLASGOW.

In connexion with the problem of dealing with the consumptives of a large city an interesting memorandum has been prepared by Dr. A. K. Chalmers, medical officer of health of Glasgow. In this document Dr. Chalmers draws attention to the alteration that has gradually taken place during the last 30 years in the manner of providing institutional treatment in these cases. At the beginning of that period such treatment was provided in the general and Poorlaw hospitals. But long before the present movement in favour of sanatoriums began the practice of the general hospitals in Glasgow in relation to consumption underwent a change which of itself was calculated sooner or later to raise the question of special hospitals for the treatment of the disease. Although this change would appear to have begun at a date subsequent to the discovery of the tubercle bacillus, it was determined rather by altered views of treatment than by any theory of infectivity. Between the years 1880-84 and 1907 the proportion of admissions for phthisis to the total medical admissions fell from 15 to under 3 per cent. in the Royal Infirmary, and from 16 to 2 per cent. in the Western Infirmary. Of recent years special provision has been made for the treatment of phthisis in the parish hospitals of Glasgow (272 beds) and the parish hospital of Govan (144 beds). Sanatoriums have also been erected at Bellefield (52 beds), Bridge-of-Weir (140 beds), and Lanfine (14 beds). The Poor-law institutions at Lanfine are available without charge to those who are eligible; at Bridge-of-Weir children are admitted free, males pay on an average about 15s. weekly, and females somewhat less; at Bellefield some are admitted free, while the amount paid by the others averages over all admissions 7s. 6d. per week-These institutions serve to illustrate some of the anomalies attending our present methods of providing medical relief. The consumptive pauper is able to obtain accommodation and treatment at any time in a Poor-law sanatorium, but there is no equivalent provision for the consumptive who may be just above him in the social scale. And, again, the consumptive wife is refused the provision which would be available for her husband in similar circumstances. Dr. Chalmers goes into the cost of providing sanatorium treatment for all cases in the city. He estimates that as fully 1200 deaths occur annually in Glasgow from pulmonary tuberculosis, the number of persons who become tuberculous during the year, allowing for recoveries, must considerably exceed this. By the provision of 100 beds for training purposes, that is to say for teaching patients the proper course of procedure, a number of patients equivalent to the number of deaths could be afforded one month's training at a cost for maintenance alone of about £8000 annually, plus the annual interest on the capital sum spent on site. The obvious criticism is that nothing approaching effective treatment-i.e., cure of the disease-could be undertaken in the time allotted to each patient. Dr. Chalmers then turns to

the work done by the tuberculosis dispensaries established in the city and the home visitation and supervision connected therewith, and we are in agreement with his contention that the extension of this line of work holds out the best hopes for the future. Our Glasgow correspondent reports this week the recent resolution of the health committee of his city advocating such a course, and also the adoption of compulsory notification. Finally, Dr. Chalmers's belief is that to grapple with the problem effectively it will be necessary to replace in sanatoriums the accommodation which has been withdrawn from the general hospitals in Glasgow.

THE UNIVERSITY OF LONDON AND THE MEDICAL FACULTY.

WE report in another column the proceedings at the interesting meeting of the Faculty of Medicine of the University of London on Monday last, when the fate at the hands of the Senate of the scheme for the creation of a Faculty Board was duly reported. It will be remembered that the Faculty had approved by resolution the formation of a Board which could fairly place medical views before the Senate in an authoritative way. This the three members of the Faculty upon the Senate cannot hope to do, while no coherence of view or attitude can be expected from the whole body of the Faculty. The formation of this Faculty Board was approved by the Academic Council but not, we understand, by the External Council; and now the Senate has followed the lead of the latter body, proposing to create a Board merely empowered to report to the Faculty instead of a working body desired by the Faculty which would have possessed advisory powers to the Senate, and possibly in the future some executive authority. The Royal Commission which is now sitting may be expected to take notice of the circumstances.

THE TREATMENT OF PELLAGRA.

In view of the increasing prevalence of this disease in the United States an important monograph on "The Prognosis and Treatment of Pellagra" by Dr. C. H. Lavinder has been published by the Public Health and Marine Hospital Service of the United States. As regards the treatment of pellagra, Dr. Lavinder remarks that there is no known specific for the disease, thus showing that little progress has been made since Sir Henry Holland wrote in the Medico-Chirurgical Transactions (London, 1820): "In short, it appears certain that mere medicine has done very little for the relief of pellagra." Lombroso, in his search for a remedy, got the idea of using arsenic, and the results exceeded by far his expectations. But he does not seem to have regarded arsenic as a true specific for pellagra, although considering it a valuable remedy in some cases, acting in a certain sense as an antidote for the toxins of spoiled maize, to which he attributed the disease. Of the more recently introduced preparations of arsenic it was thought well to try atoxyl and soamin, but they proved of little value in Dr. Lavinder's hands, although he was not willing to discard them as useless. He found Fowler's solution of benefit in some cases. Dr. Babcock used both atoxyl and soamin extensively at the State Insane Asylum at Columbia, South Carolina, but he did not observe any permanent benefit from the treatment They were administered by intramuscular injection in doses of 0.2 to 0.5 gramme every other day for two or three doses. followed by an interval of about ten days. He also thinks that Fowler's solution is a remedy of importance. Dr. Wood of Wilmington, North Carolina, speaks disparagingly of atoxyl as a result of his experience. It is clear, therefore, that the newer arsenical remedies are not generally so favourably regarded as the older form, Fowler's solution, which has been used by Lombroso in doses of from

5 to 30 drops, increasing the dose according to tolerance. Dr. Lavinder and Dr. Babcock tried mercury succinimide, but they achieved no results with this drug except in syphilitic cases. It proved to be quite irritating locally. At Columbia a trial was made of the method, recently advocated by Babés, of combining the use of atoxyl and arsenic trioxide, the former being injected hypodermically in doses of 0.5 gramme, and the latter being used internally in the form of pills containing 0.001 to 0.002 gramme taken three times a day, and externally in the form of an ointment containing 2 per cent. of arsenic trioxide. Turning to the serum method of treatment, Dr. Lavinder attempted to treat two patients with blood serum taken from cured cases. One patient died from pneumonia shortly afterwards, and the other showed improvement only for a short time and is not expected to recover. He remarks that he was unable to secure properly cured cases for obtaining the serum, and this may account to some extent for so poor a result. Commenting on a reported case of a cure by transfusion of blood from a cured patient, Dr. Lavinder admits the possibility that the blood from any healthy individual might have a similar beneficial result. It would be interesting to hear the result of further researches upon the condition of the blood in pellagra. Although the specific toxic properties of the damaged maize which are believed to cause it have not yet been isolated, it is not at all improbable that further research will lead to their isolation and the preparation of a corresponding antitoxin.

THE PROMOTION OF NATIONAL HYGIENE BY THE ROYAL INSTITUTE OF PUBLIC HEALTH.

WHILST pundits are engaged in paper controversy upon the possibility of saving the nation from the hygienic sins of its fathers, and politicians embroiled in party warfare impatiently push aside measures aimed at the physical wellbeing of their constituents, it is a very encouraging thing that active educational movements dealing with the art of living healthily are being carried on by more than one public-spirited society. We have alluded before to the excellent objects of the National League for Physical Education and Improvement and the more transcendental aims of the band of enthusiasts engaged in promoting "National Eugenics," and now we desire to draw attention to the action of the Royal Institute of Public Health in creating a Department of National Health, under the patronage of Her Majesty Queen Alexandra, and the vice-patronage of the Princess of Wales, and a committee of influential ladies. This department has been created by the Council of the Institute " in view of the great necessity which exists in the interests of the public health of a knowledge on the part of the people of the more simple truths connected with domestic hygiene and infant rearing," a necessity which none can deny. The work of the department at present consists of two branches, instruction and examination. Elementary and advanced courses of instruction are given by medical practitioners to those having ready access to the homes of the poor, such as district visitors, the members of the Salvation Army and other religious bodies, such subjects as food, air, clothing, sleep, cleanliness, and infectious diseases forming the staple of the lectures. Junior and senior certificates are awarded to those who satisfactorily pass the respective examinations held after these courses are concluded. At the class which was recently held under this scheme at the Clapton Congress Hall there were no less than 400 students, and certificates of proficiency were awarded to those who had passed the necessary examination at a public meeting on Oct. 18th. It is good to realise that so many foci of hygienic enlightenment have been kindled amongst

those very poor people who most need their influence. examination branch of the department's work has been established to provide an authoritative qualifying test for health visitors and school nurses, by which municipal and educational authorities may be assisted in the selection of women for those posts. From the syllabus which has been forwarded to us it would seem that this examination will be thorough; and though it will consist of written papers and viva voce interrogation we trust that these tests will be made as practical in their intention as is possible. Common-sense capable women with a sound knowledge of principles are wanted for these public health offices, not people crammed with a surfeit of technical knowledge. We have ourselves known of a nurse who admitted to having learnt several pages of a physiology book off by heart without in. the least degree understanding them; she knew the long words and was quite content. We have too high an opinion of the Royal Institute of Public Health to imagine that it will encourage this sort of false knowledge in the candidates for its hygienic hall-mark. Those who wish to hear more of these courses and examinations can do so by applying to Mr. James Cantlie, honorary secretary of the institute, at 37, Russell-square, London, W.C.

THE PHARMACOLOGY OF ERGOT.

THE great therapeutic interest connected with ergot, and the constantly changing opinions as to its active constituents, render it most desirable occasionally to review the progress that has been made. The most recent work on the subject is critically reviewed in the Journal of Pharmacology and Experimental Therapeutics for August by Mr. W. H. Cronyn and Mr. V. E. Henderson of the Pharmacological Laboratory of the University of Toronto. Summarising their own experiences and those of other workers, they conclude that most galenical preparations of ergot contain considerable amounts of the active principles, but do not show any great or marked action when given by the mouth. They consider that the doses usually recommended for these preparations are much too small. They point out that when injected intravenously a fall in blood pressure always precedes the rise, except after the administration of ergotoxin. Quantitatively, the galenical preparations of ergot show great variations in pharmacological action. They conclude that ergotoxin is a highly active alkaloid, having the properties of ergot most desired in medicine. It brings about a long enduring contraction of the walls of the arterioles, and increases the movements of the uterus. Its action is feeble when given by the mouth, but it is more marked in subcutaneous injections, and much more so when given intravenously. The last-named method is recommended in cases where a rapid and certain action is desired, either in shock or in post-partum hæmorrhage.

TYPHOID FEVER AT A SILVER MINE.

DURING August typhoid fever on a somewhat wide scale broke out in a mining camp near Cobalt, Northern Ontario, and in the town of Cobalt itself. Cobalt is situated in the district known as New Ontario, about 300 miles from Toronto, and is the centre of an active silver mining industry. During the past year or so there has been a large influx of population to the district, most of whom have been miners attracted by the promise of high wages. As in the early days of the majority of mining localities, the laws of health have been ignored, the consequence being that typhoid fever has been present to a greater or less extent for some considerable period. In August, however, matters became really serious. Cobalt having by this time a population of over 5000 was by the laws of the province outside the jurisdiction

of the Provincial Board of Health of Ontario, but as the local authorities were unable to cope with the situation the services of the board were called upon. Dr. C. A. Hodgetts, the secretary to the board, and Dr. Bell, one of the medical inspectors to the board, went to Cobalt, and under their directions efforts have been made to effect the necessary sanitary reforms. They found appalling sanitary conditions. All the wells were near the surface and the contiguous latrine arrangements were absolutely primitive. They caused more than 70 wells to be closed, warned the mine-owners that pure water must be supplied to the workers, and ordered the mines to be equipped with a dry-earth bucket system. These measures soon bore fruit, but as late as Oct. 9th, in the miners' camp outside the town, there were 56 cases of typhoid fever, and in the town itself there were 41 cases. The disease has not been of a severe type, although there have been several deaths. The mine-owners are now fully aware of their responsibilities and informed how best to proceed. They are providing hospitals for the benefit of the miners, to which all those suffering from typhoid fever are taken. In connexion with these hospitals a rather remarkable instance of religious intolerance has been reported to us by a local correspondent. He states that "the Cobalt branch of the Lord's Day Alliance objects to the delivery of milk to the hospitals on Sunday, and the chairman of the hospital board has been informed by the Express Company that they cannot deliver milk sent from Toronto to Cobalt without being liable to prosecution by the Alliance. The hospitals are thus unable to procure a sufficient milk-supply.' Religion is a very good thing, but we seem to remember that Christ expressly provided against this sort of fanaticism when he pointed out that the Sabbath was made for man and not man for the Sabbath.

APPENDICITIS WITH HÆMATURIA.

In the New Zealand Medical Journal for August Mr. P. H. V. Hammersley has reported a case of appendicitis in which a very rare complication occurred. In 1905 he saw a lady "of mature age" who complained of attacks of dyspepsia accompanied with pyrosis, nausea, pain, and flatulence. The uterus was retroverted and retroflected and the right kidney was freely moveable, but there were no signs of disease of the vermiform appendix. In August, 1908, she was again seen, and said that every three months she was seized with vomiting, rigors, and colic. These symptoms subsided, and at the end of the second day she noticed that the urine was tinged with blood. The attacks were not influenced by menstruation but, though more or less periodical, were provoked by unwonted exertion. In November Mr. Hammersley saw her during an attack when the symptoms had subsided. The urine was so deeply tinged that it looked like pure blood. The right kidney was freely moveable but not tender, and there was no pain over the appendix and no abdominal rigidity. The temperature and pulse were normal. The urine did not contain anything abnormal except blood, and cystoscopy showed only a little pouting of the right ureteric orifice which in an ordinary case would not have been regarded as worthy of note. Skiagraphy yielded no evidence of calculus. At the end of January, 1909, Mr. Hammersley had an opportunity of seeing her at the beginning of an attack. After a few hours' malaise, nausea and vomiting of bilious fluid commenced, then a rigor supervened, the temperature rose to 102° F, and the pulse to 112, and colic set in. After 36 hours profuse perspiration and sleep followed. All the symptoms pointed to Dietl's crisis, but the kidney, which was easily palpated, was not in the least tender. On the other hand, there was a distinct feeling of fulness over the appendix, and pain was produced on deep pressure. No blood

was passed in the urine during or after this attack. Chronic appendicitis was diagnosed. At the end of February a cystic chronically inflamed appendix, evidently on the point of rupture, was removed. The appendix was bound down by adhesions to the back of the excum and ascending colon and practically lay upon the right kidney, which appeared to be normal and showed no sign of stone. The attacks ceased and the patient's appearance much improved. Mr. Hammersley suggests that by extension of the inflammation from the appendix to the adjacent kidney all the symptoms of Dietl's crisis and even the hamaturia were produced.

THE FIFTEENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

On the invitation of the Department of State of the United States Government the Fifteenth International Congress of Hygiene and Demography will meet for the first time on the American continent in Washington, D.C., from Sept. 26th to Oct. 1st, 1910. Section 3 of this Congress will be concerned with the Hygiene of Infancy and Childhood and of the School, and will discuss matters of the utmost import to all who are interested in public health and education. The President of this section will be Dr. A. Jacobi and the Secretary Dr. Luther H. Gulick, and these gentlemen will be glad to hear of any original work that is being done upon any branch of these subjects. Our own country at the present time offers a singularly favourable field for observations in school hygiene now that the medical inspection of school children and its corollary—the treatment of those found defective—have become thoroughly established amongst us. and we are sure that some important contributions to the proceedings of the section will be made by British medical men engaged in school work and in the investigation of children's diseases. The sectional bureau is at 1, Madisonavenue, New York City, where the Secretary may be addressed.

PUNCTURE OF THE LUNG AS A DIAGNOSTIC PROCEDURE.

WE publish in another column of this week's issue an interesting paper by Dr. Thomas J. Horder in which the value of puncture of the lung is carefully discussed from the point of view of the light it may throw upon the diagnosis of obscure conditions within the lung. Puncture of the pleura to demonstrate the presence of fluid and to establish its character is, as Dr. Horder points out, a process which has been in general use from a period long anterior to the methods of modern clinical pathology, though these have considerably extended its value. Dr. Horder shows how the investigation of the few drops of blood-stained fluid obtained in a so-called "dry" tapping—that is, in a case where no fluid is found in the pleura, but the lung is pierced insteadmay throw light upon the diagnosis, and further suggests that the deliberate puncture of the lung in certain cases may yield information of great importance in regard to diagnosis and treatment. The types of case suitable for puncture of the lung are, he suggests, those with signs of consolidation of the lung where careful examination of the sputum fails to reveal its nature, and cases of abscess of the lung and bronchiectasis. In regard to the manner of performing the puncture, he recommends the use of a good-sized needle attached to a syringe which has been recently boiled and contains no chemicals to interfere with the subsequent culture of the organisms obtained. After the needle is inserted into the lung the piston is withdrawn about an inch and then the needle is extracted, whilst the skin is supported by the fingers and thumb of the left hand. Various examinations, either bacteriological or cytological, may be made of the fluid obtained. Dr. Horder gives some illustrative cases in support of his advocacy of the procedure, and further claims as an advantage the fact that it may be the only means of obtaining a culture to prepare a vaccine for the treatment of localised infective conditions within the lung. The procedure is one which is certainly deserving of more extended trial, since it is obviously a valuable method for diagnostic purposes. The only conditions which suggest themselves as disadvantages are the possibility of infection of the healthy pleura or of the needle track in septic cases, and the occurrence of hemorrhage from wounding a vessel or an aneurysm in a pulmonary cavity.

MEDICAL OPINION AND PUBLIC APATHY.

THE two great medical services of the country, the sanitary service and the Poor-law medical service, both working under the Local Government Board, are the expression of the influence of the State upon the public health of the people. A new journal, the Medical Officer, has lately made its appearance, and a very promising appearance, which has for its object the dealing with the various problems of administration as they arise, with particular reference to the medical executive. The issue of this journal, which is dated Saturday, Oct. 9th, contains much interesting matter for medical men in Government and municipal services, and the leading article for that week is devoted to the insanitary condition of Gravesend, to which attention has within the last few weeks been prominently directed by Dr. R. J. Reece's report to the Local Government Board. Our contemporary expresses surprise that it is possible for a local authority, such as that of Gravesend, to continually flout the central health authority and to maintain insanitary conditions which were drawn attention to on behalf of the Board by Mr. Netten Radcliffe in 1877, by Sir Shirley Murphy in 1885, by Dr. Theodore Thomson in 1893, and now by Dr. Reece in 1909. But this story of Gravesend is in no sense alone, and a careful perusal of the reports of the medical inspectors of the Local Government Board will bring to light numerous instances in which repeated visits of inspectors have been made in years gone by, but where the conditions are now but little altered from those which obtained at the date of the first inspection, perhaps a quarter of a century ago. The problem of how to deal with these recalcitrant authorities is a very difficult one, and it cannot, unfortunately, be said that the creation of county councils has served to stimulate local opinion and activity in the manner which was once expected.

PREVENTIVE MEASURES AGAINST MOSQUITOES.

MALARIA is endemic in most tropical and subtropical regions where precautions are not taken against mosquitoes, and the story of a recent application of medical entomology to practical cases is an instructive chapter in the history of sanitation. It is now a matter of common knowledge that measures directed mainly against the breeding-places of the insects have proved successful in various parts of the world. An experiment on a comparatively small scale, but no less effective, has recently been made by Major P. G. Elgood, director of the Police School in Cairo, and was described by him in the Cairo Scientific Journal for July last. In the autumn of 1906 this school occupied an old palace containing from 150 to 200 comparatively small rooms, together with an average of one cess-pit to each two rooms. Mosquitoes abounded and were so troublesome that Major Elgood, who had already had experience of them in Burma and elsewhere, could not sit in his quarters after sunset, and the cadets were unable to obtain sleep. The public health department then came to the rescue, and he states that

when its preventive measures had been in operation for a few weeks the palace seemed to be more free from mosquitoes than any flat or club which he was in the habit of visiting at the time. In the summer of 1908 the school moved into new quarters at Abbassia, where it was soon found that the desert isolation of the locality was no protection against mosquitoes. Major Elgood, however, guided by the public health department, dealt with them by a simple method. Once a week a third of a teacupful of crude petroleum oil was poured down each of the 182 latrines, sinks, and other possible mosquito-breeding places which exist in the school. Twice a week each receptacle of water was emptied and filled. The result was that on the occasion of a visit made by an inspector of the public health department no mosquitoes could be found in the school, although all latrines and other likely places were searched by him. No special men were in charge of the work and the cost was estimated at about 10s. a month. Major Elgood draws particular attention to the simplicity and cheapness of the preventive measures which satisfied him so well. He also mentions, incidentally and without comment, that the prevalence of dengue in the school declined very much after the removal from Cairo to Abbassia.

THE MEDICAL TREATMENT OF LONDON SCHOOL CHILDREN.

THE education committee of the London County Council on Nov. 3rd approved and forwarded to the Council for sanction further arrangements with the hospitals for the medical treatment of children attending the public elementary schools of the metropolis.1 The day schools subcommittee reported that it had communicated with 55 hospitals and had received replies from 50. Of these 18 had either not expressed any desire to cooperate, or were sympathetic but unable to undertake additional work, and 5 are treating some 390 children a week without charge. The authorities of the remaining hospitals desired financial assistance, and the committee had negotiated with them on the basis already approved by the Council—viz., a payment not exceeding £50 a year for each additional medical assistant (working one half-day a week) and 2s. for each child treated. Final terms had been suggested in respect of 14 out of these hospitals, and the committee recommended that, as a beginning, agreements be entered into with eight of them to provide treatment for eyes, ears, and skin ailments-viz., Belgrave Hospital for Children, Clapham-road, S.W. (1760) children); Charing Cross Hospital, S.W. (2200); Hospital for Diseases of the Throat, Golden-square, S.W. (1000); King's College Hospital, Lincoln's Inn-fields, W.C. (500); London Hospital, Whitechapel-road, E. (4750); Metropolitan Ear, Nose, and Throat Hospital, Grafton-street, Tottenham-courtroad, W. (500); Royal London Ophthalmic (Moorfields) Hospital, City-road, E.C. (for not less than 3000 or more than 6000); St. George's Hospital, Hyde Park, W. (2000); and that the acceptance of the offer of the committee of the Charing Cross Hospital to provide treatment by means of X rays for 25 children attending public elementary schools be confirmed, expenditure not exceeding £35 being sanctioned in connexion therewith. The subcommittee explained that the London Hospital, which in July agreed to give free treatment, had withdrawn from that arrangement and wished to enter the class of hospitals to which the Council was prepared to make grants. It also recommended the Education Committee to accept an offer by the Hampstead Council of Social Welfare to provide gratuitously for one term treatment for the Hampstead children. The subcommittee estimated that provision has

¹ See THE LANCET, July 31st, 1909, p. 312.

still to be made for upwards of 21,000 children. In the discussion on the report an amendment to insert in the agreements with the hospitals a stipulation that the waiting-room and other accommodation should be satisfactory to the Council and the hours of treatment convenient to working-class parents was rejected, Miss Lawrance and other supporters of the committee's proposals urging that the amendment would give offence to the hospital authorities, and that if such important work could be entrusted to them at all they could be left to carry it out under the best conditions. The recommendations of the subcommittee were accordingly approved.

THE AERO CLUB OF THE UNITED KINGDOM.

THE Royal Automobile Club Journal of Oct. 21st publishes a special supplement drawn up by Mr. F. H. Butler, the founder of the Aero Olub of the United Kingdom, which gives a chronological summary of work done by members of that club and others during the period 1901-09. The Aero Club was founded at the end of September, 1901, and was registered on Oct. 29th of the same year as a limited company in connexion with the Automobile Club. The events mentioned in the summary are chiefly concerned with balloons, for we in these islands are, or at any rate were until very recently, far behind our continental neighbours in the art of flying by aeroplanes. Still, on Dec. 4th, 1908, Mr. Moore-Brabazon flew 450 yards in an aeroplane at Issy-les-Moulineaux, Paris, and on Sept. 8th, 1909, Mr. S. F. Cody flew for 40 miles in his biplane at Aldershot. The science of aeroplaning has apparently but little to do with medical matters, but in a former issue we drew attention to the difficulties which the new mode of transit might bring about in the future with regard to the spread of infectious diseases such as cholera or plague. The "avia loca" of the air know no frontiers, and flying machines will certainly have to be taken into consideration in any further regulations, such as the existing Venice convention, which may be agreed upon among the nations to prevent the spread or dissemination of disease. Another way in which flying machines may interest medical men in the not very far off future is their use as hospital "ships" or means of transporting the sick to regions of the earth where certain climatic conditions obtain. This use of aeroplaning has been already set out in realistic fashion by Rudyard Kipling, in his wonderful fantasy, "With the Night Mail." No one who has read it will forget his description of the Benedicite sung at dawn on the hospital boat for "consumptives bound for Frederikshaven or one of the glacier sanatoriums for a month." The date is 2000 A.D., but when we look back at the progress in scientific invention between 1859 and 1909 it may be that another 50 years will see Mr. Kipling's dream no longer a dream but a reality.

His Majesty the King visited the National Hospital for the Paralysed and Epileptic, Queen-square, on Nov. 4th, and opened the jubilee extension wing of the hospital.

THE Local Government Board, acting on the request of the London County Council, has ordered that the Notification of Births Act, 1907, shall come into operation in the metropolis on Nov. 30th next.

WE have been notified that the following members of the medical profession have been elected as councillors on the London borough councils, but possibly the list is incomplete: Camberwell, Mr. F. Lonnon and Dr. D. M. Serjeant; Finsbury, Mr. W. Lauzun-Brown; Fulham, Mr. J. J. Edwards; Hampstead, Mr. C. W. Cunnington; Islington. Dr. G. Madden and Dr. Kate Haslam; Kensington, Dr.

F. H. Anderson and Dr. F. H. Alderson; Paddington, Dr. J. Thoresby Jones; St. Pancras, Dr. R. M. Beaton and Dr. Paramore; Stepney, Mr. M. Feldman; and Westminster, Dr. Henry Dutch.

A TELEGRAM from the Governor of Mauritius to the Secretary of State for the Colonies states that 21 cases of plague with 13 deaths were reported during the week ending with October.

THE next meeting of the British Medical Association, as has been already announced, will take place in London, and Mr. Butlin, President of the Royal College of Surgeons of England, has been nominated President-elect. It is anticipated that the annual meetings of the Association in 1911 and 1912 will be held in Birmingham and Liverpool respectively.

THE friends and pupils of the late Professor Arthur Gamgee have initiated a fund which is intended to mark their high appreciation of his eminent services to science and his life-long devotion to the prosecution of knowledge. Subscriptions to the Gamgee Fund may be sent to Professor Arthur Schuster, Victoria Park, Manchester; Dr. A. D. Waller, Physiological Laboratory, University of London, S.W.; or Dr. G. A. Buckmaster, University College, London, W.O. A meeting of supporters of the movement will be held shortly, the date and place of which will be announced in due course.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

A COMITIA was held on Thursday, Oct. 28th, Sir R. DOUGLAS POWELL, Bart., K.O.V.O., the President, being in the chair.

The following gentlemen having passed the required examination were admitted Members of the College:—William David Keyworth, M.B., B.C. Cantab., and Charles Joseph Singer, M.B. Oxon., L.R.C.P. Licences to practise physic were granted to 104 gentlemen who had passed the necessary examinations.

The PRESIDENT announced that the Jenks Memorial Scholarship had been awarded to Mr. Phillip Dennis Scott. He also announced that the adjudicators of the Weber-Parkes prize and medals had decided upon the following subject for the next competition: "The influence of mixed and secondary infections upon pulmonary tuberculosis in man and the measures, preventive and curative, for dealing with them."

The following communications were received: 1. From Professor Emil Fischer thanking the College for the award of the Baly medal to him. 2. From the secretary of the Royal College of Surgeons of England regarding proceedings of their council on July 29th and Oct. 14th last.

A report was received from Dr. F. W. Pavy, the College representative at the International Medical Congress at Budapest. On the motion of the PRESIDENT the thanks of the College were returned to Dr. Pavy for the service he had rendered to the College.

The audited accounts for the year ending Sept. 29th last were laid before the College. The quarterly report of the College Finance Committee, dated Oct. 21st, was received and adopted.

The resignation of Dr. P. H. Pye-Smith as a member of the Executive Committee of the Imperial Cancer Research Fund was received, and Dr. A. Newsholme was appointed a representative of the College in his place.

Dr. Norman Moore was re-elected a member of the Committee of Management.

The books and other publications presented to the library during the past quarter were received and the thanks of the College ordered to be returned to the donors.

After some further formal business the PRESIDENT dissolved the Comitia.

THE INFLUENCE OF MIND AS A THERAPEUTIC AGENT:

ADDRESS BY DR. CLAYE SHAW.

A WELL-ATTENDED meeting was held at the rooms of the Harveian Society of London on the evening of Oct. 28th, the President, Dr. CHARLES BUTTAR, being in the chair. After the formal business the President introduced the subject of the evening's discussion—namely, "The Influence of Mind as a Therapeutic Agent," saying that his society had brought it forward, believing that the medical profession must take cognizance of the growing interest of public opinion in psychic methods of treatment. He had much pleasure in calling on Dr. T. Claye Shaw, emeritus lecturer on psychological medicine at St. Bartholomew's Hospital, to open the

The Validity of Suggestion.

Dr. CLAYE SHAW said: Mr. President and Gentlemen, I have accepted the honour of introducing a discussion by this society on the influence of mind as a therapeutic agent because it gives an opportunity to those who employ this line of treatment to give their results and their methods to the criticism of a practical audience desirous of knowing the grounds upon which we are asked to receive a process which differs in principle from the ordinary physical treatment adopted by the physician and surgeon. When any particular theory is brought forward and recommended as fit for application by responsible medical men who have specially studied the subject and have committed themselves to writing upon it, it behoves us to examine its claims impartially, and if the basis appears to be sound and the results credible it becomes our duty to avail ourselves of it in the interests of patients. It matters not that irresponsible and unqualified persons have adopted the arguments and the processes laid down by certain practitioners; the same might be urged against the use of ordinary medical and surgical therapeutical aids because some of these are employed by bone-setters and the exploiters of quack remedies. We do not decline to use electricity and magnetism because they were brought to notice by laymen, nor to treat hydrophobia by inoculation because it was introduced by a chemist. The function of a society like this is to analyse the pro and con arguments of a matter placed before it, so that authority may be given to the members to employ or to reject the conclusions from the evidence brought before them. As seen nowadays the influence of mind as a therapeutic agent is chiefly practised under the term "suggestion," derived from suggerere, to bring under notice or to present; and it is familiar under the term "hypnotic suggestion," though all suggestion is not of the hypnotic form. Our discussion-prefix might therefore be "on the validity of suggestion" are there any grounds for its acceptance into our pharmacopœia of remedies? can mental influences be brought to bear on structural defects? are there mental states which can influence bodily conditions and which can be brought into play to affect them?

Let us have a clear conception of what we mean by "suggestion." It is the insinuation of a belief or impulse into the mind of a subject by any means, as by words or gestures, usually by emphatic declaration; also the impulse of trust and submission, which leads to the effectiveness of Psychology"), "Suggestion is a process of communication resulting in the acceptance with conviction of the communicated proposition in the absence of logically adequate grounds for its acceptance." Perhaps there are people who take objection to the latter part of this dictum, because in some cases it would seem that there might exist logically adequate grounds for its acceptance, though the person acted upon might not be able to appreciate them. Suggestion is no new thing-it is of old application and was used in the different times of Tertullian, St. Augustine, Scaliger, Hobbes, and Locke. The basis of much of the treatment by suggestion is the unseen and the intangible, and it rests on what is called the spiritual mind. It postulates the exist-ence of conative processes, such as Will, Faith, Power of Attention, treating these as actual extities which can be influenced by being strengthened when weak or called into energy when dormant. In the majority of those who seriously entertained. In this, as in other matters where

practise it there is no idea of physical alteration in the sense of producing a change in tissue, their object being to strengthen will power and certain lines of thought, whilst weakening others which are adjuvant to the existing conditions of ailment. Others, however, do not go as far as this -they still appeal to what they call the entities, whilst acknowledging that the revival or the strengthening of these entities has an appreciable effect on the nerve structurethe reverse process, the influence of structure or material on the mental processes, they must ignore, because the dependence of mind upon structure is to them not necessary. They may perhaps go so far as to allow that the exhibition of proper diet, of tonics, &c., is useful as enabling the "mind" to act upon an improved tissue, which was before this physically impaired, and therefore incapable of playing its subsidiary rôle as the exponent of what the "mind" wants or intends, but this is not the primary object of the treatment, which is the strengthening or the correction of an intangible essential principle which overrides all other conditions of whatever sort they may be. This must be so, since the supporters of treatment by suggestion state that they have cured epilepsy, locomotor ataxia, neurasthenia, &c., conditions which most people associate with organic disease of tissue.

At the British Medical Association held at Exeter in 1908 when the discussion on treatment by hypnotic suggestion was in progress one distinguished member unhesitatingly affirmed that by his methods he had succeeded in effecting cures in cases of the kind I have referred to, and though histories and exhibition of the cases could not, in the circumstances, be given, the *ipse dixit* of the reader of the paper was received as being the truthful experience of a qualified and conscientious medical man who had clinically investigated the pathological conditions which he reported to be cures. There are, then, two schools: the one says that there is a purely mental element which is susceptible to influence by direction, by dictum, by appeal to as a primary and separate agent, and there is another which regards mental conditions as inseparably associated with nerve states, which denies the existence of such separate entities as will and active attention except in so far as they are exhibitions, the result of nerve states, secondary to, or parallel with, definite activities of the nerve elements.

The difference between the two schools is important; the one which we may call that of the unfettered or free thinkers does not really require any training at all in medical matters and very often it has none. upholders deal with an impalpable (and so far indemonstrable) something which they cannot materialise, they have no surgical cabinets, no anæsthetics, no pharmacologia, they appeal to the individual to cure himself, or to receive from them an authority which they will incorporate and transform into his will, and they try to assist him by taking upon themselves the responsibility of "suggesting that such and such results will follow the cultivation or employment of a definite mental process which they may, or even may not, indicate. In its extreme forms no education is required for this. The man who has studied the nature of disease and is unable to separate structure and function is pitted against him who violently dislocates the two and elevates the latter (function) into an independent and controlling position—these function-specialists forming the class called faith-healers, exponents of which doctrine are to be found in every section of society. Still there are many educated medical men of position and reputation who resort to suggestion as a remedial agency either alone or in combination with other medical and surgical methods, and though it may be difficult to say how much of their success is due to the one or the other factor of the combination, or even to the combination itself, yet people who have the interests of their patients at heart want to know, if possible, how much truth there is in the theory of those who employ suggestive treatment. They ask for information as to whether there is such a thing as mental influence upon structure (whether sound or morbid). They want to know how much of what had better once and for all be called "humbug"-if anyenters into the composition of treatment by suggestionwhether the air of mystery with which it is often associated is really part of the paraphernalia of the charlatan, whether the vaunted success is in fact merely that of the quack, or whether there is so much truth in the process that it must be

speculation exists, when the possible comes in the probable (the capability of proof or of proving) must be eliminated from consideration. We can scarcely avoid discussing the present position with regard to the spiritual life, because it is with this that suggestion is concerned. Is there such a thing? Is there, apart from the bodily tissue, a something which is independent of it which can operate upon and be affected by this body, which can be recognised as plus or minus in its power of action and which can be used by the patient for his own advantage? When we suggest to a person that he shall exercise his will are we not asking him to influence one of his ultimate faculties? How is his will to be influenced? What is the controlling agency that is to whip up or to put the brake on the dormant or the perverted will? Is there a higher will somewhere in the background? Yes, say the religious party, there is, and this is what we call the Deity, and He must be petitioned to give power to use the will in the right direction. Does the hypnotist, then, or the suggester, make himself into a deus ex machina? Does he impose his own will on that of the patient, and arouse it or guide it in a vicarious manner? If there is no such spiritual world, no such Deity, no such Essence, no such, as Häckel calls it, "gaseous vertebrate, outside the body as we know it, then millions of men have been for ages and now are mistaken, and immeasurable oceans of blood have been spilt over a myth. The teaching of the Church in all its forms is by suggestion and, what is linked with it, by authority. We are told—not asked, but told—to believe in what we have never seen, and cannot objectively prove.

The greater our experience the more we must acknowledge that there are possible powers and influences which, however we may eventually succeed in grasping them, are at present unknown to us more closely, and it is this indefiniteness, ignorance, and want of precision on our part which are made the ground of the spiritualists, the hypnotists, and the suggesters—our terra incegnita is their playground. Nor can we say that they are wrong. When modern science has demonstrated the actual truth of bombardment by ions as the cause of magnetic storms and the phenomena of the aurora borealis, when the composition of matter is said to consist of concentric whorls of electric ions rotating with inconceivable rapidity, who is to say to what at present unseen and unknown agencies we may not yet be introduced, or that our feelings that a spiritual world does exist may not be brought within actual demonstration? The modern school of psychology is absolutely materialistic in its teaching. It insists that Will, Attention, and conative processes are results, not causes, and if so that there are, of course, no such things as primitive faculties in the direction of compelling forces. But however strongly teachers and lecturers may be necessitated to inculcate this view it does not follow that they are quite satisfied with it, and instances are not wanting where men who have ceased teaching but not thinking find themselves saying, "Now that my teaching is done, I am constrained to own that there is yet something to be explained—'I will' goes beyond 'I must.'" Take the three processes of Voluntary Action, Attention, and Emotion. Modern psychologists say that the two former can be analytically split up into certain components, but that they depend chiefly upon the strength of the last (Emotion), but we know nothing of the real nature of Emotion. In recent lectures Dr. Mott has given the results of a most learned investigation of Emotion, entering fully into all that is known of its connexion with bodily and visceral states; but with deference I submit that we are still no nearer the understanding of the real nature of Emotion than we were, and if so then we cannot understand any more the real nature of the conative processes. Why is one person more emotional than another? What visceral or nervous condition tends to make Emotion strong or weak? I may have the fear of handling snakes, but when I see others doing it with impunity and am shown why they can do so my fear goes, so that Fear was a certain mental state which was changed by suggestion and further experience into confidence. The suggester would say, "By telling the person that there was nothing to fear, by continued insistence, combined with ocular demonstration, I have brought about a change in Emotion and with it a change in Will and in power of Attention. I have not imposed my will on him, but I have created a Will in himself by altering the factors which go to form it and thus creating a mental states from the point of view of the patient; in this

new function." Note, however, that the change was a gradual one, perhaps due to change in tissue—i.e., to new association-tracts being trained and aroused by physical processes, or, as they would say, by psychical ones. If they are correct—these psychical purists—there is a school in which ordinary medicine and surgery have little part. The study of Psychology is almost unknown in the medical curriculum. Of what use, we say, is it to study the intangible which has no basis capable of physical treatment when we know that we have a material at hand which when impaired or affected renders manifest mental obliquities? Stay, are we quite sure that mental defects and aberrations are necessarily connected with structural defects? Are we sure that people who think differently from the majority, and who cannot be brought to think in harmony with them, are therefore insane and impaired in structure? Is insanity always the result of diseased structure, or may it not be associated with a tissue which is somewhat different in kind and function from what is usually met with? There are some forms which lead us to think so. Most people concern themselves only with the structural side; they say "we know nothing about the other, therefore we do not trouble about it"; the others say, "We find from our experience that there is a mental world which can influence the physical, therefore we cultivate it." If these are wrong, if psychical processes cannot affect brain structure, what is the use of telling a man that he can do this or that if he tries—putting the active energy first. Without doubt many of us actually do use suggestion without noticing it. We raise hope or we inspire confidencehow? By personality, by arousing dormant tracts of thought. In the presence of one mental state it is difficult to recognise that there are others really existing (but dormant) of the opposite trend. That a person feels in a depressed way does not imply that the brain condition which is correlate with joy and contentment does not exist, it only means that the dormant state is overshadowed by another; this is very important, for in it lies most probably the explanation of treatment by suggestion, raising it into a reasonable hypothesis.

It is then not necessary to assume the supernatural and to profess to treat an essence without influencing the physical substratum, for the above shows that structure may be influenced by psychical processes, but it is in a physical manner. Take an instance of malignant disease-e.g., cancer of the rectum; by the operation of inguinal colotomy we can check the growth by removing irritation and by giving Rest; so with nerve affections, by diverting the current of thought and so giving Rest, during which time the morbid processes may become quiescent and may disappear. Most of us use Suggestion without perhaps appreciating what we are doing e.g., the annual holiday, during which we forget the work which has reduced us to a state of mono-ideism is nothing but suggestion—the comedy when we are in the doldrums is only suggestion. I have it on authentic evidence that during the great earthquake at Valparaiso paralytics jumped from their beds, as also did people with actual pneumonia, and moreover that they were cured. Of course, in all these processes there are secondary factors which contribute to the improvement or cure-e.g., the physiological changes brought about by Rest or Move ment-in whichever direction suggestion was nrged-but the Suggestion, or change of ideas, was the primary thing. When there is intense mental concentration all the paths of association which are en rapport with the dominant idea are enlisted to such an exclusion of others that for the time being these may be quite dormant, and so the ecstatic or the martyr at the stake feels nothing; it might even be possible to "hold a fire in the hand by thinking of the frosty Caucasus!" Much of the modern treatment of lunacy is suggestive—e.g., the dances, concerts, games, and gymnastics have the object of rousing dormant tracts, and the assurance that there is "nothing the matter" has had the best effects upon people who thought they were ill; but then it requires the man who gives the opinion to be sure of his facts. The quack, who may be a clever observer though ignorant of underlying morbid conditions, is often successful because he is a psychologist; he has a personality, he has perhaps studied trends of ideas, he is able to put himself en rapport with the trend of the patient's mind. I find that in dealing with mental impairment it is necessary to cultivate

way we may often anticipate and demonstrate what he was trying to conocal, and so you get his confidence and he will do what you tell him. To accomplish this some employ Mystery, anything to compel attention. And however we may be inclined to condemn such practices as "theatrical" and call them "tricks," these aids may be necessary to attain the ends. Thus I can understand that with the view of employing Suggestion a professional, right-thinking, up-todate man might deem such things as dress of a certain colour and shape necessary, or an approach of a certain formal nature, or a laying-on of hands in a definite way, a studied silence and a fixed gaze, part of a legitimate treatment, but they must be done with a true and complete knowledge of the actual condition of the subject.

Clever amateurs may be successful where the ordinary professional man fails, not because of supernatural powers, but because they are by nature more acute students of the trend of mental states, though they are dangerous and may do harm by not ceasing in time, or by engrafting a morbid trend, or by unscrupulous uses of their knowledge for their own private ends. After all, specialists in suggestion are not very numerous. Why are there not more of them if it is so valuable a remedial agent? It is certainly a lucrative line of practice and its adoption has no terrors for the patient. I take no account of Theosophists who believe themselves to possess a knowledge of the Divinity and His works by supernatural inspiration, nor of "Christian Science" devotees whose methods seem to me ridiculous, but, confining myself to those medical men who use suggestion pure or combined with hypnotism, I would ask, Must there not be valid ground for using it as a therapeutic agent? and I would add that personally I believe there is. One thing is certain—we are not all able to use it beyond a very limited extent. If, as its advocates urge, they are able to effect cures in cases where all other forms of treatment have failed, their claims must be received with the greatest consideration. Those who practise it will tell you that they cannot explain how they do it -that they have found out, almost by chance, that they have a power, a personality, which they themselves cannot understand, of influencing people affected more especially with functional ailment and perhaps indirectly even organic disease. Does this peculiar innate power account for the small number of specialists in this occult process? It is with such conditions as chronic inebriety, opium, or drug habit that suggestion is most powerful; with acute insanity I have not seen it successful, and though it has been fairly tried in asylum practice it has not obtained general recognition as a therapeutic agent. In the chronic alcoholic or drug-taker excess may be practised for a considerable time without irreparable damage to tissue, but in all these cases there is intense Desire, of which the chief constituent is *Feeling*. Now feeling we know may rise to a great height, but only to a *limited* height, and when unsatisfied it tends to disappear. We know by experience (as in the confessions of De Quincey) and there are few of us who cannot quote from our own experiences of alcoholics, smokers, and druggers, that by the exercise of will these habits may be overcome and the desire disappear, and this is accomplished by the arousing continuously of new interests and lines of thought. But when disease is established, when more than mere habit has supervened, there is a force acting against us which by its constant pressure prevents the opening up of other tracts and does not permit the feeling to die down.

It is not always easy to distinguish between functional and organic disease, and bearing this in mind we may be inclined to side with the exponents of suggestion that no case should be relegated to the scrap-heap of failures without this method having been tried. The Harveian Society will, bearing in mind the logical and experimental method of its great namesake, acclaim any addition to the list of therapentic agents for employment in the treatment of disease on satisfactory evidence that it has legitimate grounds for what it claims, and there are present to-night some of those who are competent to place these grounds for their claim to suggestion as a therapeutic agent before you.

The Pros and Cons of Suggestion.

Dr. J. MILNE BRAMWELL, in beginning the debate, first remarked upon the confusion existing in the minds of medical men between the effects of the drugs which they administered and the suggestive effect which these drugs had upon the patients' minds. Ellioteon, as well as Braid, the father of hypnoxism, had insisted that it was of the

utmost importance to determine the amount of mental influence exerted by drugs. Such distinguished physicians as Sir Andrew Clark and Sir William Gull had attained real and great success with the use of the simplest remedies in very different conditions, and the secret of the success of such men was that probably their patients caught the inspiration of their own enthusiasm. Dr. Bramwell also quoted Dr. Hack Tuke and Professor Benedict of Vienna; the former held that suggestion could produce a therapeutic effect unattainable by drugs alone, while the latter attributed curative results to magnets, which were really due to suggestion alone. This being so, was it not better, Dr. Bramwell asked, to use suggestion consciously than unconsciously? James Braid's earlier experiments in hypnotism were well known, but it was not so well known that after he had gained more experience he discovered that therapeutic effects could be obtained as well by simple suggestion as by inducing the hypnotic sleep, and that he had recorded that not 1 in 10 of those he cured passed into any condition resembling sleep. Bernheim and others had come to the same conclusion, in which the speaker also agreed. Dr. Bramwell then proceeded to quote some striking cases in which the utmost benefit had resulted from treatment by suggestion in people who had been invalids for many years, or who were suffering from acute neuroses which had reacted to no other treatment. Systematised suggestion, he said, would cure people even when they came absolutely disheartened and insisting that no power on earth could cure them. He instanced two cases of la grand hystéric, one with suicidal tendency, and a case of neurasthenia that had lasted for over 30 years, all of which had been cured by suggestion. Perhaps the best results were obtained in cases of obsession, and he would ask what drug could influence an unfortunate patient who dreaded to be in an open or a closed space, or had, for instance, a morbid fear of cats. One of the most remarkable of his cases was that of a schoolmaster with an obsession that he must throw himself out of his class-room window. He was cured in six weeks by suggestion, and has been well and doing useful work ever since. Dr. Bramwell could not explain the power of suggestion, and he did not lay claim to any mysterious influence over his patients. He was glad that the value of this branch of treatment was at last being recognised by the medical profession, and the Society of some 80 medical men interested in the subject which had been recently formed testified to the growing belief in suggestive therapeutics.

Dr. T. SEYMOUR TUKE, speaking as an alienist, was unable to make any encouraging report of the use of hypnotism and suggestion amongst insane patients. He considered that such agents could only operate in insane cases which were mentally and physically sound except on one point, cases, that is, which had not lost the power of attention and concentration. He had found suggestive treatment marvellously effective in cases of inebriety in which the will was under some sort of control, and admitted that possibly the mental physician, who was constantly in contact with his patients and was able to get into a sort of communion with the minds of some of them in a manner not attainable in casual conversation, with care and patience might exercise a slow and real suggestive influence over them, so that a cure might ultimately be effected, however gradually. It was, indeed, hard to attribute such a cure definitely to suggestion, but if suggestion could shorten any case of insanity it should be welcomed by those engaged in the treatment of that disease.

Dr. C. LLOYD TUCKEY said that he had been using hypnotism as a therapeutic agent for 20 years, during which time an enormous change had come over the medical profession's attitude towards its employment. Many diseases, such as genuine dipsomania, could not be reached by drugs. He had cured many such cases by hypnotism, as well as other intractable conditions, such as three cases of Ménière's disease. He had never known hypnotism do any harm to a patient, and he considered the medical profession ought to have this remedy at hand for use in suitable cases. It was unfair to medical students not to teach them anything about hypnotism and suggestion. There were no public facilities in this country for a man to learn the application of these valuable methods, either before or after graduation. When the medical per fession as a whole had been trained in the knowledge of

psychotherapeutics many cases would be prevented from going to quacks for such treatment.

Christian Science.

Mr. STEPHEN PAGET said that he had been invited to take part in the discussion only because he had lately been inquiring into the works of Christian Science, and into those of the Society of Emmanuel in London. He had never studied either psychology or the care of the insane or the methods of hypnotic treatment. In all that he had been saying about Christian Science and the present revival of "spiritual healing" he had addressed himself "to the man in the street," and he asked leave to speak as that man's representative. The man in the street wanted just now a definite and precise list of those cases which were open to mental healing, and a similar list of those which were not. He wanted to know the exact difference between functional diseases and organic diseases. He wanted to know under what conditions, and to what extent, and by what physical processes, hope and faith and love took part in a man's recovery after operation, or a man's power to pull through a long illness. If it were possible for a committee of the medical profession to draw up and publish a clear statement in general terms as to the diseases which were open to the influence of mind, and the diseases which were shut against that influence, such a statement would be of great public service. Only, to be acceptable to the man in the street, this statement would have to adventure beyond the bounds of psychology. And if the present discussion were to be of any public service they must adventure beyond those bounds; they must not be limited inside one set of ideas, but must look out over all facts of experience. The subject of the discussion extended beyond the authority of experts in psychology, such as were leading the debate. They ought to have non-expert evidence as well. They wanted some formula that should take into account the healings at Lourdes, and the healings which occur in Christian Science, and the conversion of drunkards, and the results obtained by good parents in the management of morbid-minded children, and the legions of cases that were cured of their faults, not by any treatment that they could reasonably call suggestion, but by the rude awaking of the will, or even by punishment. They would never get that formula so long as they kept inside psychology; nor, if they did get it in psychology, would "the man in the street" accept it from them. "For he is inclined," continued Mr. Paget, "to think that psychology neither is, nor ever will be, a complete science. You cannot, he says, truly state the influence of the mind on the body in terms of the natural sciences. Once you begin to use the old phrases of dualism you must give up, he says, the phrases of naturalism: you cannot so much as mention mind, and will, and consciousness, without you acknowledge certain philosophical principles which may be forgotten or denied with impunity by psychology. He is of opinion that psychology is apt to be unprincipled, especially when she gives herself to experimental researches; that she watches and analyses the working of mind before she has made up her own as to the true nature of ours. Always he insists that he is more than a succession of states of consciousness: always he hangs on, somehow, to idealism. In spite of all his free-thinking he still takes a theological view of the case; he will not let himself be explained away as a byproduct of natural forces; he is more than unscientific, he is anti-scientific; he appeals from science to faith. Where psychology uses the Greek word psyche he uses the English word soul; and if she says that he does not know what he means by that word, he hits back at her with a Tu quoque. He cannot think of hypnotism without fear lest it may root up with the tares the wheat also; and he finds no significance in the words subliminal consciousness. For he is a philosopher; and there is no more ancient feud than that which is between real philosophy and real science. That is why the man in the street is so taken with Christian Science. It offers him, with both hands, any amount of metaphysical phrases and any amount of religious poetry-all of it bad, and most of it false; still, it is acceptable to a man of his temperament. Of course, if psychology were a science in that sense in which we use the word of chemistry and astronomy, this discussion would have no reference to popular opinion. But, as things are, we find ourselves, in practice, between two opposed armies, and not in perfect agreement with either of them. If we go over to the experimental psychologists we turn our backs, to my thinking, on a

great many valid and essential facts of human experience; if we go over to popular opinion we turn our backs on another set of no less valid facts, and find ourselves further than we like from science, and nearer than we like to Christian Science. We are a neutral country, and we pay for that privilege. We have no standing army; but the neighbouring countries in time of war claim the right to march through our territory, and they do a good deal of damage to the harvest. Public opinion is in urgent want of some clear statement of the difference between those diseases where mind, as a therapeutic agent, has what may be called a good opening, and those where it has none. Such a statement, carefully prepared and widely circulated, would be an excellent safeguard against the ill deeds of Christian Science, and would be in accordance with the best traditions of our profession."

The Value of Hypnotism.

Dr. R. H. Cole said that 20 years ago, when a house physician, he first tried to hypnotise patients. Later he went to Paris and attended the Salpêtrière and Bernheim's cliniques, but was grievously disappointed in what he saw. He now returned to the consideration of the matter perhaps less sceptical than formerly, but with his belief still somewhat shaken. He had come to the conclusion that hypnotic suggestion might be powerful for good and for evil, and that only medical men (and those special physicians and not men in general practice) should be trusted with its use. In his experience of mental diseases he had only seen it do good in one insane patient. It had never had any effect in his experience upon people with fixed delusions, but it would cure dipsomania. Drugs should not be neglected when suggestion was being used. The medical profession should use all methods of healing short of actual spiritual ministrations, which were the business of the clergyman. Suggestion, Dr. Cole believed, acted through definite physical channels and was a proper method of treatment, but the physician was not concerned with faith in the spiritual sense.

Dr. J. F. Woods said that he had practised hypnotism for 17 years and had treated 4000 cases, and he described a few of them in which he had obtained remarkable results. One was that of a woman with severe asthma and delusions that she was going to be cut to pieces who was cured by suggestion at one sitting and had kept well since. Another case of severe soiatica which had resisted every line of treatment for eight months was also cured rapidly. He did not find it necessary to induce hypnotic sleep. His custom was to place the patient in an armchair and tell him to relax his muscles and compose his thoughts. He would sometimes stroke the forehead or epigastrium and when the patient was quite comfortable he would make suggestions of tranquillity, warmth, and restfulness. He would then leave the patient for half an hour and on returning often find him in a self-induced hypnotic sleep. Dr. Woods proclaimed himself an enthusiastic supporter of the forms of treatment under discussion.

Mr. H. W. ARMIT brought back the discussion to more general lines. He said that Christian Science and other allied irregular practitioners were seriously trespassing upon the province of medical men who ought, therefore, to examine carefully the principles underlying psychic treatment. It was noteworthy that a stranger would almost always influence a patient's mind more than a familiar practi-tioner, and it was therefore better that suggestion should be given by an unknown medical man than by the patient's usual attendant. During the debate many terms such as Mind, Will, Subconscious Mind had been used, of which nobody really knew the meaning, but because a thing was inexplicable it did not follow that it should be neglected when a valuable method of treatment had been founded upon it. Suggestive treatment was really very old, as witness the time-honoured method for the cure of functional aphonia. It was a disastrous thing that the public wished to credit the practi-tioners of hypnotism with "a special gift of God." In illustration Mr. Armit quoted the case of a man suffering from asthma, in which an unexpected cure had been effected by a hypnotic practitioner, who subsequently found himself in the embarrassing position of being regarded as a special agency of divine beneficence. That sort of attitude must be discouraged. The only way to stop the use of suggestive therapeutics outside the profession was for members of the profession themselves to employ them fearlessly and quietly.

Dr. E. L. ASH gave the conclusions drawn from his personal experience in hypnotism. He considered that something more than verbal suggestion was wanted, which something might be the induction of hypnotic sleep or a combination of suggestion with material means of treatment. He believed that the latter was the more valuable course to adopt. It was, indeed, adopted in a half-hearted manner by every medical man who gave a placebo and told his patient that it would relieve his condition, but it should be done thoroughly and earnestly after a study of the individual indications in each case. Drugs, massage, and electricity were the adjuncts to treatment which he adopted particularly. Genuine hypnotism (the state of somnambulism) was unsatisfactory in practice. Only a small proportion of cases could be hypnotised, and these, in his experience, did no better than those treated by simple suggestion. He quoted two cases of nocturnal enuresis, one of which he had failed to cure by hypnotism whilst the other was cured by suggestion, and a case of blepharo-spasm which had been cured by suggestion with light massage on the eyelids, although a similar case treated only by suggestion had not been relieved. He submitted the following conclusions: (1) That suggestion should be much more commonly used as a routine method of treatment; (2) the advantages of aiding suggestion as a therapeutic measure by the induction of the hypnotic state seem to be very doubtful; (3) that suggestion should be chiefly used as an adjunct to ordinary therapeutic methods, and regarded from this point of view is likely to ultimately prove to be one of the most valuable measures at our disposal; and (4) that the restriction of the practice of suggestive therapeutics to the narrow limits of a specialty, to the disregard of general medicine, is both unscientific and

Dr. W. H. BLAKE followed by describing a series of cases in which as a general practitioner he had used hypnotism with the utmost benefit. He insisted that it was impossible to ignore the value of mental therapeutic measures when such cases had been actually seen, and he urged the medical profession to master its principles. His most remarkable cures had been effected in a case of asthma for which the patient was accustomed to drench himself unavailingly with drugs, and in a severe case of dipsomania.

in a severe case of dipsomania.

After some remarks by Mr. HAYDN BROWN.

Dr. CLAYE SHAW wound up the discussion by a few wise remarks, in the course of which he said that the Harveian Society was bound to admit the testimony which it had heard that hypnotism and suggestion were valuable agents in the cure of definite disease.

BACTERIOLOGICAL INVESTIGATIONS ON SOME MODERN MOUTH DISINFECTANTS.

BY DR. EUG. PIASECKI.

(From the Hygienic Institute of the University of Lemberg, Austrian Poland.)

THE city of Lemberg being alarmed by a severe epidemic of scarlet fever in the year 1908 the local sanitary authorities endeavoured to discover what preventive measures might be commonly adopted both in families and schools. Professor Dr. Raczynski drew the attention of the sanitary commission to formamint, the use of which had been strongly advocated by Dr. Meredith Young 1* and others. It was accordingly resolved to submit this, and some other new drugs, to bacteriological investigation. Entrusted with this task by Professor Dr. Kucera (to whom I am greatly indebted for many kind suggestions), I decided to limit my inquiry to two newly-introduced methods—namely, antiseptic lozenges (formamint) and antiseptic spray (pyocyanase).

Although the nature of the great majority of infectious diseases which threaten the child of school age is not known, there is no doubt about the bulk of contagion being transmitted through the mouth or nose. This seems to be the case even with the acute exanthemata, where, amongst other proofs, we see inflammation of mucous membranes precede the cutaneous symptoms. A really effective method of disinfection of the mouth, nose, and pharynx must be, therefore, considered as a most powerful preventive against a whole series of maladies.

Amongst methods hitherto in use for this purpose I omitted gargling, in the first place, because it does not affect the pharynx, at least as it is commonly used and as it can be taught to school children; and, in the second place, because very exact investigations of Röse 2 have shown that really strong gargles irritate the mucosa too much to be used for hygienic or preventive purposes. Swabbing and douching are said to act very strongly, but, on the other hand, they require too much practice to be greatly employed outside hospitals. On the contrary, lozenges seem to be an ideal method from the purely technical point of view. Dr. Young 1 has insisted on their merits so exhaustively that there is nothing to be added. The process of spraying, mentioned above, presents several well-marked advantages, two of which are that it requires no special training and covers very accurately the whole surface of both mouth and pharynx.

A. - FORMAMINT.

If we omit purely clinical observations, there has not been as yet much written on the subject. Rheinbold and Daus simply state that "formamint saliva" (i.e., saliva taken immediately after sucking of formamint tablets) develops a distinct bactericidal action; moreover, they do not care to give more exact quantitative calculations than those expressed by the terms "many" and "few" colonies. Jaenicke published Loewenthal's observations, according to which five formamint tablets destroyed active movements in the case of bacillus fusiformis, spirillum sputigenum, and endamœba buccalis. Reissner was the first who endeavoured to estimate numerically the action of the drug. He gargled with tepid pump water and poured it afterwards into a sterilised glass vessel, from which a sample was taken on a loop of platinum wire and inoculated on agar plates. Colonies were counted after 24 hours' cultivation at the ordinary (!) temperature. This procedure was repeated at intervals of from two to ten minutes after sucking formamint tablets, the number of which was not stated. Three experiments of this kind showed reduction of the initial number of colonies to one-half after two minutes and to oneseventh after from five to seven minutes. Reissner also prepared several tables illustrating the action of formamint in vitro on different species of bacteria; as he does not, however, mention the method used, the description of this part of his work is incomplete. Meredith Young's article 1 on the subject will be remembered by the readers of THE LANCET; I shall therefore give only a brief summary of the results as far as they touch the bacteriological side of the question. Two experiments with formamint were made on a young healthy clerk whose bacterial flora amounted to 300,000 microbes on a swab with which the mucosa of the throat was touched on several consecutive "control" days. In the first of these the swab taken immediately after one tablet had been sucked was sterile; after ten minutes there were 35 microbes on the swab; and after 30 minutes there were 150 microbes on it. In the second experiment the man sucked two formamint lozenges—one every half-hour—and then gargled with sterilised water. The results were that the samples taken from the anterior faucial pillars showed 7500 colonies before the experiment and 80 colonies after it, while the samples from the posterior pharynx showed 965 colonies before the experiment and 80 colonies after it.

As to the details of the method, the swabs used were of constant size; they were brought into contact with the mucosa under possibly constant amount of pressure; each of them was immediately packed, labelled, and sent for examination to Professor S. Delépine who, after dilution of the initial sample in sterilised water, not only counted all colonies grown on agar plates at 37° C., but also determined the number of colonies belonging to some particular species, including staphylococcus pyogenes aureus, staphylococcus pyogenes albus, streptococcus, and micrococcus tetragenus.

Proceeding to new investigations, the first question I endeavoured to answer was, To what extent, and in how strong concentration does formaldehyde (i.e., the disinfecting component of the drug) act in vitro as a disinfectant in human saliva? For this purpose I made a series of experiments from Oct. 3rd to 15th, 1908. I collected in a sterile glass from 6 to 8 cubic centimetres of my own saliva, and inoculated a sample of it in the manner described further on. Then I distributed the saliva in several tubes, 1 cubic centimetre in each, and added to each of them a different dose of formalin, except for one tube in which the saliva was left in the natural state. All the tubes were immediately

The superior figures throughout the article refer to the bibliography

placed in a thermostat at 37°C., and samples therefrom were taken at certain intervals and inoculated. To prevent evaporation of the formaldehyde each tube was covered with a closely fitting glass cap. In two instances where I gave a formamint tablet instead of formalin, it was quickly pulverised in a sterile mortar and the tube was thoroughly shaken before taking each sample. Inoculation was executed by diluting 0.05 cubic centimetre of saliva in 5 cubic centimetres of physiological salt solution, and taking there-from another 0.05 cubic centimetre for addition to ascites fluid, which mixed with an equal portion of agar liquefied at 45° C., was poured out on plates and kept at 37° C. for 24 hours.

In order to be able to compare the value of the disinfecting action in different experiments I took the number of colonies in 1 cubic centimetre of saliva in the first proof (before adding formalin) as = 100, and then calculated percentage numbers, showing the increase or diminution of the microbes, as had already been done by Röse.² The results in "control" tubes (without formalin) were as follows:—

TABLE I.

				At the ginnin	g.	10 min. later.	•	30 min	١.	60 min. later.
Oct.	5th	•••	•••	100	*****	198		106		132
••	7th	•••	•••	100	*****	93	•••••	152	••••	167
••	15th	•••	•••	100	•••••	61		93		51

The absolute numbers at the beginning were respectively: 12,576,000, 30,976,000, and 35,360,000 colonies from 1 cubic centimetre of saliva.

The figures from tubes to which different doses of formalin were added are ranged below according to decreasing quantity of the disinfectant :-

TABLE II. Percentage of microbes left alive-

Date.	Date. Dose of formalin			nmedia iter add formali	ling	10 min later.		30 min. later.		60 min. later.		
Oct. 5th		0.05	•••	24	•••	0.05	•••	0.03	•••	0.12		
,, ,,	•••	0.025	•••	56	•••	0		0.01		0.03		
,, 15th		0.025*		6	•••	0.01	•••	0.07		0		
,, 5th	•••	0.01	•••	64	•••	0.09		0.03		0.04		
,, 15th	•••	0.005		45		0.14		0	•••	0		
,, ,,	•••	0.005*	•••	40	•••	12		1.5	•••	0.2		
., 7th		0.001		104		43		90		39		
** **		0.0005		111	•••	62		80	•••	48		
				* In	a tabi	let.						

As repeated microscopical investigations showed that the character of the microbic flora in my saliva was fairly uniform, somewhat marked differences between the figures from Oct. 5th and, say, 15th are to be attributed chiefly to differences in the antiseptic action of the saliva itself (Clairmont 7). Experiments with formamint tablets were made by adding one tablet (=0.025 formalin) to 1, or to 5 cubic centimetres of saliva, and they show an inferior antiseptic action as compared with corresponding quantities of pure formalin. The real volume of saliva in which a formamint tablet is dissolved during actual sucking in the mouth can be estimated to be 25 or 30 cubic centimetres. Accordingly, the first experiment on Oct. 7th (0.001 formalin in 1 cubic centimetre of saliva) would be nearest the natural conditions; but the figures-104, 43, 90, 39-ought to be somewhat increased (see above), and the antiseptic action, as estimated from experiments in vitro, would, therefore, not even equal an average of 40 per cent. in the first hour.

Repeated tests on the living subject, carried out on the same lines as in Dr. M. Young's experiments, gave contradictory results, which is easily understood, taking into account the rather weak action of the drug and the somewhat rough method. It is, for instance, impossible to ensure even an approximately constant amount of pressure of the swabs on the mucosa. I adopted, therefore, a more exact method—namely, that of Miller-Röse (Röse), which I modified in some details. With two healthy individuals (Δ = the author, and B = a school-boy 15 years of age), the bacteria contained in the saliva "normally" (i.e., without any drugs) were investigated, six or seven samples being taken at certain intervals during two or three hours. The whole daily curriculum of both individuals was carefully regulated, and especially during the test period of two or

three hours all the appreciable conditions were kept equal. As taking meals and speaking aloud are known to reduce the amount of microbes in the cavity of the mouth each individual abstained from both eating and speaking during the whole period. With A the first sample was taken three-quarters of an hour after breakfast, and with B one and a half hours after tea, both meals being carefully regulated as to both quality and quantity. This proof is to be found under C ("control") in each series. The second proof followed after 15 minutes, and as it corresponds in the "formamint" series to proofs taken immediately after sucking the first tablet, it is designated as 0. The following intervals are—15, 30 minutes, 1 hour, 2 hours, and 3 hours after 0.

Miller-Röse's method of taking proofs, which consists in gargling with an "indifferent" liquid (peptone, Witte, 1.0, chloride of sodium 5.0, and distilled water 1000.0), was, after two comparative experiments, found to be not more exact than a materially simpler way, which I therefore adopted. Proofs were taken by spitting about two cubic centimetres of saliva into a sterile tube, care being taken to avoid all forcible action of the respiratory or chewing muscles. From this I took 0.05 or 0.01 cubic centimetre of saliva and diluted it once or twice in physiological salt solution until the agar and ascites plate inoculated therewith contained from $\tau \delta_0$ th to τJ_0 th of the initial material. The plates were kept at 37°C. for 24 hours, and the colonies were counted afterwards with the help of a microscope and a counting plate. This procedure limits, it is true, our investigation to the anterior portion of the cavity of the mouth, but, on the other hand, as in the "formamint series" the tablets were held just in the same portion during sucking, there is full evidence that our method detected the action of the drug in favourable conditions. The table below shows the results expressed (in the same way as above with experiments in vitro) in percentage figures :-

TABLE III.

Person	ı A														
Date.		C.		0 mir	ı. 1	15 m in .		30 min		1 h.		2 h.		3 h.	Average 0-3 h.
Oct. 29th	•••	100		151		137		150		89	•••	169	•••	416	185
., 31st		100		138		187		-	•••	168		334		572	279
Nov. 7th		100		236		173	•••	153		433	•••	386		546	321
,, 30th	•••	100		124		185		296		376	•••	737	•••		344
Dec. 2nd	•••	100	•••	58		197		39		109	•••	232	•••		107
,, 4th		100		131		187	•••	681	•••	1181	•••	818		-	600
"5th		100		248	•••	617		213		578		469	•••	1181	551
,, 6th	•••	100		120	•••	319		70		230	•••	_	•••	_	185
,, 7th		100		138		114		103		237	•••	222	•••	_	163
,, 8th		100	•••	371	•••	384	•••	471	•••	1139	•••	1189	•••	1344	816
Average	•••	100		171		250		242		454		506		812	438

The absolute numbers of the colonies, calculated for 1 cubic centimetre of saliva, are in the column C respectively: 6,336,000, 8,832,000, 6,000,000, 5,715,000, 5,900,000 1,600,000, 2,300,000, 6,000,000, 12,200,000, and 3,800,000. 5.900,000,

TABLE IV.

Person B.							
Date.	C.	0 m	ln. 1 5 mi	n. 30 min.	1 h.	2 h.	Average 0-3 hr.
Dec. 14th	100	12	0 75	77	215 .	74	112
" 21st	. 100	10	4 190	28	20.	30	74
" 31st	. 100	2	7 123	155	200 .	195	146
Jan 6th	. 100	3	3 114	135	85.	143	105
" 11th	. 100	4	5 35	47	24.	60	42
Average	. 100	60	3 107	88	109	100	94

The absolute figures, relating to column C, are: 92,800,000, 49,200,000, 27,500,000, 17,500,000, and 50,700,000.

By these results Röse's conclusions are corroborated, according to which simple evaluation of bacteria-rate "before" and "after" taking a drug would not be sufficiently exact for our purpose. With Person A, for instance, we see that the amount of microbes is rapidly growing during the observation period; any somewhat weak antiseptic action would, then, not be detected, the results show-ing us more microbes "after" in spite of the drug. Now, if we compare the above "normal" averages with corresponding averages from days in which the drug was taken, we shall detect the microbicidal action even where it simply consists in limiting the growth of bacteria-rate.

Now I proceeded to the formamint series. The first type

of them (carried out with A only) consisted in experiments made in exactly the same way as above, with the unique difference that during the whole interval between C (control) and 0-proof two formamint tablets at once were sucked and swallowed. The results are to be seen in the table below:—

TABLE V.

Date.	C.		m m		15 min		30 min	1 h.	2 h.	3 h.	1	Average 0-2 br.
Oct. 28th	100		135	•••	20 9		112	 297	 320	 		215
Wov. 11th	100	•••	195	•••	96		317	 95	 356	 473		25.5
Dec. 10th	100		275	•••	200		150	 2375	 2925	 _	•••	1185
" 11th	100	•••	144	•••	126	•••	-	 3 65	 2470	 _	•••	776
,, 14th	100		44	•••	88		378	 255	 0	 _	•••	193
Average	100	•••	159	•••	144	•••	239	 677	 1254			445

The absolute figures relating to column C are 4,672,000, 5,375,000, 400,000, 5,700,000, and 900,000.

Compared with the average figures from the "normal" series, the above table shows the following differences, the mode of calculation being as follows. I took each of the average numbers of Table III. as = 100, and calculated for such case the relative value of corresponding average figures in Table V. The differences (- = below 100, + = above it) represent the amount of microbicidal action in the given moments of the observation period. For instance, Table III., column 0, average 171. If we take it = 100, the corresponding figure of Table V. (159) will amount to 93. Difference, -7Conclusion: the drug developed, immediately after sucking, a microbicidal action of 7 per cent. -i.e., killed 7 per cent. of the bacteria. C, \pm 0; 0 minute, \pm 7; 15 minutes, \pm 42; 30 minutes, \pm 1; 1 hour, \pm 49; 2 hours, \pm 147; average (from 0 to 2 hours), \pm 52. After a short period of antiseptic action, there is, then, an absolute disappearance of this action about half an hour after swallowing, followed by increased growth of bacteria, which amounts, after two hours, to nearly 150 per cent of the normal rate. This somewhat paradoxical result can be understood when compared with similar phenomena observed by Röse 2 after gargling with some liquid mouth disinfectants. This author demonstrated that some strong disinfectants lower the vitality of the epithelium of the mucous membrane, and thereby produce, after a short period of a decreased rate of bacterial growth, conditions more favourable to bacterial growth than before. I felt, therefore, authorised to consider the dose of two tablets (at least for A) as too large a one, and gave, in the subsequent series, smaller doses (one tablet each), repeated at intervals of half an hour. Tablets were held in the mouth as long as possible (by A for 15 minutes and by B for from 5 to 8 minutes), the second inoculation was made, as above, immediately after the first dose, consecutive inoculations, on the contrary, inasmuch as they coincided with taking of tablets (i.e., at 30 minutes, 1 hour, and 2 hours) before the latter, so that instantaneous effects of formamint are registered in the column 0 only. A took during three hours six tablets, and B took during two hours four tablets. The results with A (calculated as above) are shown below:—

TABLE VI.

Date.	C. 0	min. 15 min.	30 min.	1 h.	2 h.	3 h.	Average 1-3 h.
Nov. 8th	100	50 97	. 67	318	226	195	159
" 19th	100	285 157	217	260	482	1270	\$78
Dec. 9th	100	91	. 139	191	117	717	232
" 12th	100	300 150	. 437	362	437	137	504
" 13th	100	191 83	. 375	25	150	341	194
				—			
Average	100	183 125	. 167	231	282	692	279

The absolute figures relating to column C are: 9,600,000, 1,600,000, 2,300,000, 800,000, and 1,200,000.

The differences from the "normal" series (calculated as above) are: $C, \pm 0$; 0 minute, + 6; 15 minutes, - 50; 30 minutes, - 31; 1 hour, - 49; 2 hours, - 44; 3 hours, - 15; average (0 - 3 hours - 34—i.e., bactericidal action does not, on the average, rise higher than 34 per ent., whereas its maxima amount to 50 per cent. If we consider that there were, on the average, at the end of the observation period, about 13,000,000 bacteria in 1 cubic centimetre of saliva still alive, such a degree of disinfection can hardly be of any practical value. Besides, we see at the end of some series (Nov. 19th, Dec. 9th) considerable growth of microbes, from which it seems to follow there can be seems to follow there can be seems to follow there can be seemed to seem the difficulties to beat, as colonies of more resistant species (spore-producing bacilli) formed everywhere a vanishing minority, and were often totally absent. Neither was there any evidence of the so-called "selective" action (by which certain species are killed or have their growth limited and others are spared); the flora of the last plates in a series in the colonies (aspecially the superficial ones) cultivated from his saliva was that of micrococcus catarrhalis, alike in the times of perfect health and during slight catarrh of the times of perfect health and during slight catarrh of the times of perfect health and during slight catarrh of the whole growth of micrococcus catarrhalis more frequently in

of them (carried out with A only) consisted in experiments | mucosa irritation, by which bactericidal action finally turns made in exactly the same way as above, with the unique | into its reverse.

TABLE VII.

Person	B.												A٧	erage
Date.		C.	(min.	. 1	5 ml	n.	30 m	dn.	1 h.		2 h.	(0-2 b.
Dec. 23rd		100		117		97		76	•••	108		18		95
Jan. 3rd	•••	100		61		71		64		82	•••	53	•••	66
,, 8th	•••	100	•••	239		107		140	•••	61		81		136
Averag	e	100		106		92		93		84		51		92

The absolute figures relating to column C are 39,200,000, 35,000,000, and 12,700,000.

The differences from the average "normal" figures (calculated as above) are: $C, \pm 0$; 0 minute, + 61; 15 minutes, - 14; 30 minutes, + 5; 1 hour, - 23; 2 hours, - 49; arraye, - 2: an inconstant, and, on the average, very weak action

The reason of the difference shown by B, as compared with A, seems to consist, at least partially, in the fact mentioned above, that B was unable to hold the tablets in his mouth, as a rule, even half as long as A, whereby naturally the duration of the drug's action on the contents of the mouth was considerably limited. This was the case, though I never omitted reminding B of the necessity of tablets being held as long as possible. There is every probability that with younger children the duration of tablet sucking would be still shorter in accordance with the smaller degree of will power and the smaller degree of ability to concentrate the attention. It follows, then, that just within those age limits where formamint should do the greatest services we are entitled to anticipate still weaker effects.

Rosenberg sproved, it is true, the presence of formaldehyde in the blood after a formamint tablet had been sucked; thus one lozenge might act even after being completely swallowed. If, however, the concentration of aldehyde in the blood were sufficient to be taken into account, its action would be detected.

in the later stages of our observation period.

To the above conclusions an objection might still be made -namely, that bacteria which were left alive might belong to some more resistant species. This I partially prevented by using ascites-agar. We know that on ascites-agar a series of more delicate species (micrococcus meningitidis, gonococcus, pneumococcus, &c.) find better conditions of growth, whereas ordinary, more resistant saprophytes grow thereon worse than on pure agar. Besides, I proceeded to definition of species. Unfortunately, we do not possess as yet methods suited to define the species of each colony on fairly densely inoculated plates. I could, therefore, do no more than (1) direct my attention when counting the colonies constantly to their morphological characters; and (2) examine microscopically a series of proofs belonging to colonies which seemed to represent different species. With Person A I found in the series with six tablets from Nov. 8th in all the plates an overwhelming majority of streptococcus pyogenes. There were also a few colonies of bacilli belonging to the subtilis group and a species of Gram-positive micrococcus. In a series of the same kind from Nov. 19th on all plates only streptococcus was found, except one (0 minute), in which, on four colonies investigated, two belonged to pneumococcus. With Person B in the series from Jan. 8th (four tablets) in all plates almost exclusively micrococcus catarrhalis was found. Of other species we saw a few pneumococci, streptococcus pyogenes, and very small numbers of saprophytes (namely, Grampositive large micrococci, and very rarely bacilli belonging to the subtilis group). As far as can be seen from the aspect of colonies, the bacterial flora of the other series must have been of much the same composition. There is, consequently, no reason to believe that the bactericidal factor had any particular difficulties to beat, as colonies of more resistant species (spore-producing bacilli) formed everywhere a vanishing minority, and were often totally absent. Neither was there any evidence of the so-called "selective" action (by which certain species are killed or have their growth limited and others are spared); the flora of the last plates in a series had the same character as that of the first or "control" plate. As to Person B, the aspect of the immense majority of the colonies (especially the superficial ones) cultivated from his saliva was that of micrococcus catarrhalis, alike in the times of perfect health and during slight catarrh of the nose. It is conformable with the observations of Arkwright,9

the noses of persons suffering from catarrh than in normal noses.

Conclusions.—1. Formaldehyde develops in vitro, in certain concentrations, a strong bactericidal action on the flora of the saliva of healthy individuals. In concentrations, however, which can be considered as nearest to natural conditions with formamint tablet sucking, its action is weak. 2. Investigations carried out in the living subject give similar results. In the first place, after a large single dose of formamint (two tablets) there is a transitory bactericidal action, followed by a considerably augmented growth of bacteria in the cavity of the mouth. In the second place, with smaller, frequently repeated, doses (single tablets at one and a half hours' interval) the growth of bacteria is no doubt lessened, but only to an extent to which hardly any practical value can be attributed.

B.—PYOCYANASE.

Emmerich and Loew 10 saw that in mixed bouillon cultures which contained mostly bacillus pyocyaneus, the sediment as well as the superficial film (both composed of bacteria) disappeared after long standing. They attributed this to bactericidal ferments, acting not only upon the species which produced them. Further investigations corroborated this supposition. Old bouillon cultures of bacillus pyocyaneus, separated from bacteria and their residues and brought by evaporation to one-tenth of their initial volume, gave a liquid containing several proteolytic enzymes (nucleases); these observers named it pyocyanase. According to quite recent investigations (Schapiro 11) a number of bacterial species can be divided into three groups in accordance with their susceptibility to the action of pyocyanase. The liquid acts strongly on bacillus diphtheriæ, bacillus pseudodiphtheriæ, xerosis, vibrio choleræ, streptococcus pyogenes, pneumococcus, gonococcus, meningococcus, bacillus fæcalis alkaligenus, and bacillus dysenteriæ (Shiga). An intermediate position is occupied by bacillus typhi, bacillus paratyphi A, staphylococcus pyogenes aureus, micrococcus tetragenus, and bacillus pneumoniæ (Friedländer). A weak action is developed against bacillus coli, bacillus paratyphi B, and bacillus enteritidis; whereas bacillus pyocyaneus, bacillus fluorescens, and proteus find even conditions of growth in pyocyanase.

From these observations great advantages might be expected for the problem of so-called internal disinfection. The means which hitherto have been used for this purpose in addition to their bactericidal effects, produced more or less pronounced injurious effects on the tissues of the human body, whereas the bacteriolytic enzymes, being free from this defect, may be applied without fear in proper concentration to the mucous membranes.

Clinical and bacteriological investigations on spraying with pyocyanase in diphtheria (Zucker, 12 Muehsam 13) encourage the tree of it together with antidiphtheritic serum. In an epidemic of grippe caused by micrococcus catarrhalis, and observed in infants at a clinique in Vienna, Escherich and Jehle 14 proved that from 24 to 48 hours after pyocyanase had been instilled into the nose there was a total absence of micrococcus catarrhalis. Jehle 14 administered pyocyanase by instillation in the course of an epidemic of cerebro-spinal meningitis to a series of patients as well as to healthy "contacts" in whose naso-pharyngeal cavity meningococci were found. The meningococci disappeared after one or two applications of pyocyanase.

It is obvious, then, that in several diseases in which the mouth and the nasal cavity are unquestionably the only door of infection we may expect favourable results from pyocyanase as experience has shown. I do not refer here to the technical details of the investigations mentioned above, because they seem to be quite irreproachable, and in this respect they form a contrast to much that has been written about formamint. The question I proposed to myself was, Can the growth of bacteria in the cavity of the mouth in healthy persons be limited by the application of pyocyanase in a degree suited for general hygienic and preventive purposes?

The choice of method did not cause any difficulties. In order that they might admit of comparison with the previous investigations of the action of formamint observations were made on the same person A, and, as a basis for the appreciation of bactericidal action, the same series of "control" experiments was used, the results of which are shown above

in Table III. In the usual course of experiments the following changes ensued, as compared with the "formamint series." Immediately before the second inoculation (marked on the table with 0), I made, exactly in the manner described by the inventors, 20 sprayings with pyocyanase in two series of ten sprayings each, with an interval of five minutes between them, the utmost care being taken to cover equally the whole cavity of the mouth. Each compression of the bag was as complete as possible. The excess of pyocyanase left in the mouth was spat out. A curious phenomenon connected with these cases was intense salivation, which lasted over an hour or so. The colour of the two or three first samples of the saliva (i.e., until 30 minutes after spraying) was greenish. The results (calculated as above) are ranged below.

TABLE VIII.

```
Date. C. 0 min. 15 min. 30 min. 1 h, 2h. 3 h. Average 0-3 hr.

Dec. 19th ... 100 ... 11 ... 79 ... 106 ... 33 ... 29 ... — ... 4291 ... 897
,, 20th ... 100 ... 223 ... 405 ... 99 ... 117 ... 271 ... 4291 ... 897
,, 21st ... 100 ... 228 ... 348 ... 69 ... 391 ... 223 ... 520 ... $96
,, 23rd ... 100 ... 170 ... 288 ... 192 ... 51 ... 714 ... 1385 ... 467
,, 24th ... 100 ... 123 ... 124 ... 147 ... 214 ... 253 ... 371 ... $96

Average ... 100 147 249 123 161 298 1642 $83
```

The absolute figures relating to column C are: 7,500,000 1,650,000, 1,100,000, 2,700,000, and 5,925,000.

The differences (calculated as with formamint) from the "normal" series shown in Table III. are as follows: $C, \pm 0$; 0 minute, -14; 15 minutes, -1; 30 minutes, -49; 1 hour, -65; 2 hours, -41; 3 hours, +101; average (0 to 3 hours), -9. In spite of considerable oscillations, the bactericidal action of the liquid was therefore from 30 minutes to 2 hours after the application, a fairly distinct one; in some series, however (Dec. 20th and 23rd), the decrease of the bacteria rate turns during the third hour into its reverse; we have again an "irritation," just as in the series with a large single dose of formamint (see above).

These results lead me to suppose that, for Person A at least, we shall be perhaps nearer the optimum of pyocyanase action when giving, during the observation period of three hours, two smaller doses. In five ensuing experiments I accordingly made immediately before the second inoculation ten sprayings only, whereas ten other sprayings were executed at the middle of the observation period—i.e., one and a half hours after the second inoculation (between the fifth and sixth inoculations). The results are shown below:—

7

ú,

27

1

ù

TABLE IX.

Da	te.	c.	0 min	15 mi	a.	30 min	۱.	1 h.	2 b.		3 h.	A	verage 0–3 h.
Dec.													
Jan.	3rd	 100	 173	 358		370		2 89	 324	•••	352	•••	311
	8th	 100	 95	 235		93		286	 238		200	•••	191
•	9th	 100	 31	 42		115		138	 50		139		86
**	10th	 100	 62	 32		67		81	 95	•••	49		64
Αve	rage	 100	 93	 151		149		165	 154		187		146

The absolute figures relating to column C are: 15,525,000,7,900,000, 6,200,000, 12,050,000, and 13,975,000. Calculated as with formamint, the differences from the normal series are: $C \pm 0$; 0 minute, -46; 15 minutes, -40; 30 minutes, -39; 1 hour, -66; 2 hours, -70; 3 hours, -77; average (0 to 3 hours), -66. The rate of the growth of bacteria in the cavity of the mouth was accordingly less by from 39 to 77 per cent. (on the average by 66 per cent.), as compared with observations during which no drug was applied. Contrary to Table VIII., the action shows here a fairly constant increase towards the end of the observation period. Moreover, if we compare the figures obtained, not to speak about formamint, with those given by other mouth disinfectants which were recommended after investigation by sufficiently exact methods (e.g., mouth washes, Röse 2), we must consider pyocyanase, when used in the way described, as the strongest of them.

As to definition of species, microscopical investigations were made on plates from Dec. 24th, 31st, and Jan. 3rd, in the first of these series the bulk of the bacteria being streptococci; about a quarter of the colonies on all the plates belonged to micrococcus catarrhalis. On the two other days

(Person A had then a slight pharyngitis) an immense majority of micrococcus catarrhalis was found; of other species there was only pneumococcus. A "selective" action of pyocyanase (stronger on some than on other species) was not detected.

We had, then, just as in the preceding observations, a bacterial flora of fairly uniform composition, belonging to species which resist disinfectants less strongly. Schapiro¹¹ assigns streptococci and pneumococci to the least resistant group as regards pyocyanase; he does not, however, mention micrococcus catarrhalis, about which we conclude from Jehle's dissertation 14 that it is easily killed by pyocyanase. I endeavoured, therefore, to calculate the bactericidal power of pyocyanase in relation to that microbe, and for that purpose used Schapiro's method. To an ascites-agar culture of micrococcus catarrhalis (cultivated from the mouth of Person A) I added 2 cubic centimetres of bouillon and made an emulsion of bacteria with the help of a loop of platinum wire. From this I transferred, with a pipette, 0.2 cubic centimetre to a tube containing 2 cubic centimetres of pyocyanase, and placed the latter, together with a "control" tube (2 cubic centimetres of pure bacteria emulsion), in a thermostat at 37°C. I then inoculated samples from both tubes at certain intervals. As to inoculations, 0.1 cubic centimetre of well-shaken liquid was diluted in 5 cubic centimetres of physiological salt solution, and from this mixture the same quantity was again diluted in the same manner. From this second dilution 0.1 cubic centimetre was transferred to ascites fluid which was, together with agar liquefied at 45° C., poured out on plates. The results (counted after 24 hours' cultivation at 37° C. and calculated for 1 cubic centimetre of liquid) are given below :-

TABLE X.

•		15 min.	40 min.	1 h.	24 hr.
Bouillon emulsion	•••	4,925,000	7,700,000	7,225,000	Impossible
10% of emulsion pyocyanase		200,000 (= 4 %)	275,000 (= 3 %)	175,000 (= 2 %)	

The stock now investigated proved a little more resistant than the species ranged by Schapiro in his first group. On the other hand, it is to be considered far more sensitive to the action of pyocyanase than Schapiro's second group. This fact, together with the results of our experiments in the living subject in which micrococcus catarrhalis was not destroyed by pyocyanase in the course of three hours, lead us to conclude that, in spite of the results obtained by Escherich and Jehle with infants, we cannot expect a similar marked action of pyocyanase upon micrococcus catarrhalis in adults.

Conclusions.—1. Pyocyanase sprayed into the cavity of the mouth in a large single dose may sometimes, after a transitory period of bactericidal action, cause increased growth of microbes. 2. When sprayed in smaller, repeated doses pyocyanase develops a higher bactericidal action than any other mouth disinfectant which has hitherto been recommended after exact investigation. Before we can recommend pyocyanase, however, for daily use by healthy persons more extensive investigations are indispensable. Such a recommendation must be withheld until the perfect innocuity of the liquid for the mucous membrane of the human mouth is proved. Circumstances have unfortunately prevented me from carrying out such investigations.

From carrying out such investigations.

Bibliography.—1. Meredith Young: Modern Methods of Treating Infective Conditions of the Throat, The Langer, March 28th, 1908, p. 924. 2. C. Röse: Untersuchungen über Mundhyglene, Zeitschrift für Hyglene, 1901, vol. xxxvi., p. 161. 3. Rheinboldt; Ueber den Desinfektionswert des Formamints. Deutsche Medizinische Wochenschrift. 1906, No 15. 4. S. Daus: Zur Desinfizierenden Wirkung des Formaldehyds auf Schleimhäute, Medicinische Kilnik, 1906. No. 16. 5. P. Jaenicke: Zur Desinfizierenden Wirkung des Formaldehyds auf Schleimhäute, Medicinische Kilnik, 1906. No. 16. 5. P. Jaenicke: Zur Desinfizierenden Wirkung des Formaldehyds auf Schleimhäute, 1914., No. 30. 6. A. Reissner: Bin Beitrag zur Ubung der Mundhyglene bei Kindern. Deutsche Zahnaerztliche Zeitung, 1907. No. 142. 7. P. Clairmont: Ueber das Verhalten des Speichels gegen die Bakterien, Wiener Klinische Wochenschrift, 1906, vol. xix., p. 1397. No. 142. 7. P. Clairmont: Ueber das Verhalten des Speichels gegen die Bakterien, Wiener Klinische Wochenschrift, 1906, vol. xix., p. 1397. No. 142. 7. P. Clairmont: Ueber das Verhalten des Speichels gegen die Bakterien and Loew: Bakteriolytische Enzyme als Ursache der erworbenen Immunität, &c., Zeitschrift für Hyglene, vol. xxxi., Hyglenische Rundschau. vol. xvili., 1908, p. 453. 12. Zucker: Zur Lokalen Behandlung der Diphtherie mit Pyocyanase, Archi für Kinderheilkunde, vol. xilv. 13. Muebsam: Ueber Pyocyanasehehandlung der Diphtherle mit Pyocyanasehehandlung der Diphtherle mit Pyocyanasehehandlung der Diphtherle Deutsche Medizinische Wochenschrift, 1908, p. 231. 14. Jehle: Beobachtungen bei einer Grippenepidemie, &c., Jahrbuch der Kinderheilkunde, 1906, p. 716. 15. Ueber das Vorkommen des Meningococcus, &c., Wiener Klinische Wochenschrift, 1907, No. 1.

THE PROPOSED FORMATION OF A SPECIAL CIVIL MEDICAL SERVICE IN INDIA.

AT a meeting of the members of "the independent medical profession" of the Bombay Presidency held on Sept. 8th at Bombay under the auspices of the Bombay Medical Union and the presidency of Sir Bhalchandra Krishna, L.M., a memorial unanimously adopted was directed to be forwarded through the proper authorities to the Secretary of State for India (Lord Morley), dealing with the question of the present position of the independent practitioners of India and their claims that all civil medical appointments at present controlled by the Government of India should be thrown open to native practitioners, and that what they consider the present monopoly of these posts by officers of the Indian Medical Service should be done away with. The memorial, which is a lengthy one, has evidently been evoked by Lord Morley's recent despatches to the Viceroy of India, in which the former foreshadowed that no further increase in the personnel of the civil side of the Indian Medical Service would be approved, and that a strong effort should be made by the authorities in India to employ medical practitioners locally to fill appointments where suitable candidates were forthcoming. There can be no doubt that Lord Morley's pronouncement evoked feelings of keen satisfaction amongst native Indian practitioners, and their feelings are now echoed in the memorial which they have drawn up. The request for recognition, coming as it does from the educated Indians of Bombay Presidency, will obtain the sympathetic consideration of the India Office. Nevertheless, we regret to note that the memorialists have thought fit to embody what can only be considered as an indictment of the pioneer medical service of India—the Indian Medical Service—and this is not only unjust but tactless, as over 90 per cent. of the native practitioners who now demand to share in the medical appointments in India owe their very existence, their teaching, and their licences to practise in India, to the very service they now arraign.

By the medical profession of the United Kingdom little is known or understood of the ways and means whereby the medical administration of India is carried out. Medical education of the native practitioners is carried out by the medical colleges. These institutions are financed and controlled by the State, and in the majority of instances education is free. The appointments to professorships and lectureships in these colleges are made by the Government after due consideration of the names of suitable candidates put forward by the Director-General of the Indian Medical Service. Likewise appointments to civil surgeoncies are made, and sanitary and public health appointments are made on nominations put forward by the Sanitary Commissioner to the Government of India, who is also an officer of the Indian Medical Service. On the other hand, appointments on the military side are made by the Commander-in-Chief from nominations put forward by the Principal Medical Officer of His Majesty's Forces in India. Members of the independent practitioner class have no representative to foster their interests on the headquarter staff of either the civil or military supreme government. But as a matter of fact, neither the civil nor military medical service has any medical representative on the Viceroy's Council, and medical and sanitary questions have no prominent position, as they are included amongst a shoal of other matters in the "portfolios" of the "Home" and "Army" members. Sanitation and allied sciences suffer accordingly. These facts are stated in the memorial from Bombay, which brings home the inadequate representation of the profession generally in the government of a country where matters of health should occupy a very much more important position than they are allowed to do at present.

The memorialists suggest certain lines along which their proposed scheme of reform might be directed. The more important of these point out that all appointments in the civil medical profession should be thrown open to proved merit and ability wherever found, and that the sons of the soil, meaning the native practitioners, should have an equal chance with the Indian Medical Service to compete for such appointments, their fitness being based on merit, qualifications, and other credentials alone, and not on any class membership or consideration of supposed service exigencies. They recommend

that the Indian Medical Service be turned into a purely military service, and that a special, purely civil, medical service be created for civil purposes. They desire that multiple professorships should be abolished and that the holders of professorships should not be allowed to hold appointments as well on the staffs of hospitals. The financial side of their proposed reforms if accepted is also embodied, and they anticipate an annual saving to the State of nearly £200,000 per annum. The names of the signatories of the memorial have not been included in the copy of the memorial sent to us, but we gather that they represent the native practitioners of Bombay alone, and we may remark that this Presidency in medical matters is by no means typical of the conditions found elsewhere in India. The native practitioners in Bombay include many Parsi gentlemen of the highest professional attainments, many of whom at present fill important hospital appointments in the Presidency with marked ability, but it is not understood from the memorial whether these gentlemen are desirous of serving elsewhere in Government appointments if so selected.

The memorial raises in a very distinct form certain difficult questions in connexion with our Indian rule in general, and with the Indian Medical Service in particular. An efficient Indian Medical Service must be one of the most important assets in the government of India, and every pains must be taken to keep it at its high level. But there is not an officer in that small service who does not recognise the justice as well as the expediency of making full use of native talent and of rewarding it proportionately. I anticipated in the memorial is problematical. The vast saving

THE INTERNATIONAL CONFERENCE ON LEPROSY.

THE report framed by Dr. Arthur Newsholme and Sir Malcolm Morris as the delegates of His Majesty's Government to the International Scientific Conference on Leprosy, held at Bergen in August, has been issued as a Parliamentary Six representatives from British colonies also attended. The report sets out in a succinct form the conclusions arrived at as the result of the deliberations at the Conference. They are as follows :-

Onference. They are as follows:—

1. The second International Conference on Leprosy confirms in every respect the resolutions adopted by the first International Conference of Berlin, 1897. Leprosy is a disease which is contagious from person to person, whatever may be the method by which this contagion is effected. Every country, in whatever latitude it is situated, is within the range of possible infection by leprosy, and may, therefore, usefully undertake measures to pretect itself.

2. In view of the success obtained in Germany, Iceland, Norway, and Sweden, it is desirable that other countries with leprosy should preceed to isolate their lepres.

3. It is desirable that thepers should not be permitted to follow certain occupations which are particularly dangerous in respect to the contagion of leprosy. In every country and in all cases the strict isolation of leprous beggars and vagrants is necessary.

4. It is desirable that the healthy children of lepror should be separated from their leprous parents as soon as possible, and that these children should remain under observation.

5. An examination should be made from time to time of those who

children should remain under observation.

5. An examination should be made from time to time of those who have lived with lepers by a competent physician.

6. All theories on the etiology and the mode of propagation of leprosy should be carefully examined to ascertain if they accord with our knowledge of the nature and the biology of the bacillus of leprosy. It is desirable that the question of the transmissibility of leprosy by insects should be elucidated, and that the possibility of the existence of leproid diseases among animals (rats) should receive early study.

7. The clinical study of leprosy induces the belief that it is not incurable. We do not at present possess a certain remedy. It is desirable, therefore, to continue the search for a specific remedy.

The British and Colonial delegates to the Conference had a meeting at which they drew up additional resolutions, which in their judgment embody—when read in conjunction with official resolutions of the Bergen Conference—the line of administrative policy which it is desirable to adopt for the prevention of leprosy throughout the British Empire, so far as local circumstances permit.

The resolutions of the British and Colonial delegates are in the following terms :-

1. Leprosy is spread by direct and indirect contagion from persons suffering from the disease. The possibility that indirect contagion may be effected by fleas, bugs, lice, the itch parasite, &c., has to be borne in mind. Leprosy is most prevalent under conditions of personal and domestic uncleanliness and overcrowding, especially where there is close and protracted association between the leprous and non-leprous.

2. Leprosy is not due to the eating of any particular food, such as fish.

3. There is no evidence that leprosy is hereditary; the occurrence of several cases in a single family is due to contagion.

4. In leprosy an interval of years may elapse between infection and the first recognised appearance of disease. It is a disease of long duration, though some of its symptoms may be quiescent for a considerable period and then recur.

5. The danger of infection from leprous persons is greater when there is discharge from mucous membranes or from ulcerated surfaces.

6. Compulsory notification of every case of leprosy should be enforced.

enforced.
7. The most important administrative measure is to separate the to the most important administrative measure is to separate the leprous from the non-leprous by segregation in settlements or asylums.

8. In settlements home life may be permitted under regulation by

In settlements home life may be permitted untor regulation by
the responsible authorities.
 The preceding recommendations, if carried out, will provide the
most efficient means of mitigating the leper's suffering and of assisting
in his recovery, and at the same time will produce a reduction and
ultimate extinction of the disease.

This statement is signed by Dr. Newsholme, Sir Malcolm Morris, Dr. B. J. Bull (Commonwealth of Australia), Dr. C. F. K. Murray (the Cape of Good Hope and Natal), Dr. George Turner (the Transvaal and Orange River), Sir Allan Perry (Ceylon), Dr. J. E. Godfrey (British Guiana and the Bahamas), and Mr. B. Glanvill Corney (Fiji).

THE CONTROL OF MEDICAL EDUCATION IN THE UNIVERSITY OF LONDON.

Proposed Formation of a Board of the Faculty of Medicine .-Amendment of the Scheme by the Senate. - Meeting of the Faculty of Medicine.

IT will be remembered that last March a memorandum was presented to the Faculty of Medicine of the University of London by Professor E. H. Starling proposing the formation of a Faculty Board of a convenient size which should be endowed with the present advisory powers of the Faculty, and which might be expected to be invested ultimately with executive authority. The scheme, which has been published in full in THE LANCET, rested in brief the following arguments. At present the Faculty of Medicine is only represented on the Senate by the the medical subcommittee of the Academic Council, and one of whom at present is a member of the External Council. The initiation of action in the internal affairs of the University, so far as concerns medicine, is practically in the hands of the three representatives of the Faculty, for the two medical representatives of Convocation on the Senate are members of the External but not of the Academic Council, which has the power of formulating representations to the Senate concerning each Faculty, and through which each Faculty must approach the Senate on the "internal" affairs with which it it concerned. Professor Starling submitted that three men could not adequately represent a Faculty of 400 members, whilst he recognised that so large a body was too unwieldy as a whole to assume administrative functions. Whilst no alteration could be effected in the mode of appointment of the Boards of Studies in each Faculty or of the Academic Council, it was within the power of the Faculty to delegate its advisory functions to a Faculty Board and "to request the Senate to regard its delegates on this Board as the Faculty itself and as the chief advisory body in Medicine." At the meeting of the Faculty of Medicine on March 12th, adjourned to March 26th, on the recommendation of Professor Starling and Dr. Leonard Hill, it was unanimously recommended that such a Board should be appointed in accordance with the scheme which we have already published.1 This provided for a board of some 30 members, with the Dean and Secretary of the Faculty as chairman and vicechairman respectively, and with liberal representation of all the Boards of Studies and of the Faculty as a whole, including all the members of the Faculty of Medicine who are also members of the Senate, as well as the two medical representatives of Convocation on the Senate and the representative of the University on the General Medical Council. It must be admitted that this body could easily be made representative of all the schools. The quorum of this Faculty Board was to be 10, and it was further recommended that the Board be empowered to report to the Senate on any subject within the purview of the Faculty through either the Academic or the External Council, provided that

¹ THE LANCET, March 20th, 1909, p. 861.

on the requisition of 10 members any question should be reserved for the consideration of the Faculty as a whole. The Senate was also requested to take no action on the principal medical affairs of the University until it had received a report from the proposed board upon the question at issue. These recommendations were subsequently sent up to and approved by the Academic Council, but were disapproved by the External Council. The Senate considered them upon Oct. 20th, and after some debate it was resolved that a Board of the Faculty of Medicine should be appointed, but the recommendation putting forward the Faculty's scheme for the constitution of such a Board was defeated in favour of the following amendment which subsequently became a substantive resolution.

That a Board of the Faculty of Medicine be appointed on the lines of the existing Boards of the Faculties of Arts and Sciences and with similar functions, and that it be referred to the Faculty of Medicine to prepare and submit to the Senate a scheme for the constitution of the Board accordingly.

We may mention that the Faculty Boards referred to in the resolution consist of the Dean of the Faculty, all members of the Faculty who are also members of the Senate, one representative of each of the Boards of Studies in the Faculty of Arts, and two in the Faculty of Science, and other members of the Faculty not exceeding five whom the Faculty may appoint. The Boards are appointed annually by their respective Faculties, they require no quorum for their deliberations, and their function is solely to report to their Faculties. It is plain, therefore, that the effect of the amendment was to suggest the establishment of a Board with functions in no way resembling those direct advisory powers which the Faculty of Medicine desired for its proposed Board.

The resolution of the Senate in the above terms was considered by a meeting of the Faculty of Medicine held at the University on Nov. 1st, the Dean, Dr. Sidney Martin, being in the chair. After some discussion it was resolved, on the motion of Professor STARLING, seconded by Dr. F. J. SMITH, that the question be referred to the committee now sitting to consider the report of the Faculty to the University, and consisting of the Dean of the Faculty, Mr. H. J. Waring, Dr. Leonard E. Hill, Professor E. H. Starling, Dr. H. A. Caley, Dr. H. L. Eason, Dr. W. P. Herringham, Dr. H. Batty Shaw, Dr. E. I. Spriggs, Dr. J. Kingston Fowler, Dr. H. G. Turney, Dr. F. de Havilland Hall, Dr. Cecil Wall, Mr. Peyton Beale, Mr. F. C. Wallis, Mr. W. H. Clayton-Greene, Professor G. D. Thane, Professor Peter Thompson, and Miss Cock.

At this meeting of the Faculty of Medicine the com-

mittee which was appointed on July 9th, 1909, to consider and report upon the following resolution of the Senate-

That each of the Faculties be invited to report to the Senate through the Academic Council such changes, if any, in the constitution of the University as they desire to recommend in the interests of the Faculty

which had been referred to the Faculty by the Academic Council, presented their report containing the following recommendations :-

1. That the medical degrees of the University of London should be pen only to those students who are students in the schools of the

University.

2. That all medical questions affecting the University should be submitted to some such body as the Faculty Board recommended by resolution of the Faculty of Medicine on March 26th, 1909.

3. That all Boards of Studies in medical subjects shall be committees of the Faculty and appointed by the Faculty after receiving a report from the Faculty Board.

4. That the Faculty Board shall report to a body of the character of the present Academic Council, who shall have executive power in all academic matters not involving finance.

These recommendations were adopted by the Faculty in its report to the Senate.

The other business considered by the Faculty at this meeting was as follows:

Changes in the constitution of the Boards of Studies with which the Faculty is concerned were made for 1910 on the recommendation of the boards themselves.

Preliminary Medical Studies .- The Board to remain as at present.

Intermediate Medical Studies. - Professor P. Thompson* to go off; Mr. J. E. Purvis to go off; Dr. J. Cameron* to be added.

Advanced Medical Studies .- The Board to remain as at

Destisiery.—Mr. W. A. Maggs* to go off; Mr. C. S. Tomes to go off; Dr. J. W. Pare* to be added; Mr. M. A. Smale to be added.

Hygiene and Public Health .- Dr. J. F. W. Tatham to go off; Dr. E. C. Seaton to be added; Dr. D. S. Davies and Dr. H. F. Parsons, examiners in State Medicine, to be

Physiology and Experimental Psychology.—Dr. J. Mellanby to be added

Human Anatomy and Morphology.—The Professor of Anatomy at King's College to be added if and when he becomes a teacher of the University; Professor P. Thompson to be added.

* Those marked with an asterisk are teachers of the University.

The DEAN reported that he had received a letter from the Secretary to the Royal Commission now sitting to inquire into the working of the University, dated August 2nd, 1909, asking for the appointment of representative members to bring the views of the Faculty of Medicine before the Commission, and also members to express the views of the minority if any existed. The appointment of representatives was postponed until after the reports of the Boards of Studies should be received. These were directed to be submitted to the above committee of the Faculty appointed on July 9th.

The meeting then terminated.

Looking Back.

FROM

THE LANCET, SATURDAY, Nov. 5th, 1831.

THE TREATMENT OF CHOLERA.

Mr. Kennedy ably exposes the manner in which efficient remedies lost confidence by their inappropriate administration in unsuitable conditions of the disease, and in which other remedies obtained a surreptitious notoriety in cases which would have recovered without their use. He ably, and to our mind most satisfactorily, vindicates the employment of blood-letting, and then proceeds "the consideration of a discriminative system of medical management,"—in the first place, giving a short description of the disease itself, which, in correspondence with the necessities of medical treatment, and the course the attack in general pursues, he divides into two varieties; one the protracted or severe, the other the rapid or violent. The protracted type consists of two stages:—

"First Stage.—The patient complains of feeling of anxiety, or of uneasiness at the pit of the stomach. After some time nausea supervenes, and the uneasiness changes into a feeling of heat or pain. To these symptoms succeed vomiting and purging and prostration of strength. The evacuations at first consist of the common contents of the alimentary canal; afterwards of a fluid like rice-water. Occasional cramps are felt in the limbs. The pulse is small and rather quick. The countenance of the patient is somewhat shrunk, and the features appear sharper than natural."

If the disease be left to itself, or if it continue to advance in spite of the remedies that may have been used, the symptoms increase in severity, and the patient comes to suffer from-

"Violent cramps in the upper and lower limbs, and at times in the muscles of the chest and belly. The cramps, in general, are not constant; they recur at short intervals in paroxysms. The vomiting and purging are severe. The coldness of the skin has increased much; it feels moist, and is of a bluish colour about the face, hands, and feet. The palms and soles of the latter appear corrugated, as if they had been steeped in water. The pulse is barely, or not at all, to be detected in the wrists and temples. The countenance is ghastly, and expressive of great anxiety. There is distressing thirst, and burning heat or pain in the region of the stomach or bowels."

If the disease be still uncontrolled, it will pass into the second stage.

"Scond Stage.—Under the increasing debility the vomiting, purging, and cramps, are subsiding or have disappeared. The patient lies in a state of helpless exhaustion, and is almost incapable of making the slightest movement. He is apparently insensible, but as his senses remain unimpaired to the last, he may be roused to say 'yes' or 'no.' The pulse is gone, and even the action of the heart is extremely feeble. The surface of the body is deadly cold. The breathing is oppressed, or scarcely perceptible, and the countenance is quite cadaverous."

In the treatment of the first stage, the primary object of the physician should be to allay the cramps, vomiting, and purging. For this purpose, not one remedy, but a combina-tion of remedies should be adopted. The WARM-BATH, bleod-letting, and a large dose of calomel and laudanum, are to be instantly prescribed. When the cramps have subsided,

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DRY heat should be applied by surrounding the patient's body with hot blankets, sand-bags, &c.

The treatment of the second stage will be very different. During the first there is vital power, and high spasmodic action, but in the second the patient is in a state of real exhaustion, and would sink under the measures adopted for the first. Even the warm-bath is dangerous to life now, and must be avoided.

In the second stage there are two indications, 1st, to remove deadly coldness; 2nd, to remove the great debility. For the first, recourse must be had to DRY heat: for the second, to stimulants, such as ether, ammonia, brandy.

The rapid type now comes to be considered, as in many instances the attack is desperate, the patient suddenly falling down, perhaps insensible. There is little visible attempt at reaction. The pulse disappears at the wrist, the heat declines. In these cases, cramps, vomiting, and purging, are either completely absent, or exceedingly slight in their existence. Two stages may still be formed;

1. That of apparent debility; 2. That of real debility. For the treatment of these varieties, we must adopt the author's own words :-

"The chief remedial measure is blood-letting, and here its use is founded upon the fact, that, for a certain space of time after the commencement of the attack, the resources of the constitution are not to be measured by the external symptoms."

(At the end of the remainder of the quotation, which we cannot here transcribe for lack of space, the Editor states, "We shall quote no further. To the work itself we refer the anxious practitioner.")

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 7785 births and 3786 deaths were registered during the week ending Oct. 30th. The annual rate of mortality in these towns, which had been equal to 12 9, 12 2, and 12 0 per 1000 in the three preceding weeks, were again equal to 12 0 in the week under notice. During the first four weeks of the current quarter the annual death-rate in these towns averaged only 12.3 per 1000, and in London during the same period the rate did not exceed 11 · 9 per 1000. The lowest annual rates of mortality recorded in the 76 towns last week were 6 · 7 in Cardiff, 6.9 in Walthamstow, 7.0 in Wolverhampton and in Bury, and 7.1 in Hornsey; the rates in the other towns ranged upwards, however, to $17 \cdot 5$ in Oldham, $17 \cdot 6$ in Great Yarmouth, and $18 \cdot 0$ in Newport (Mon.). In London the recorded death-rate last week did not exceed 11.9 per 1000. The 3786 deaths in the 76 towns last week exceeded by but 14 the low number in the previous week, and included 293 which were referred to the principal epidemic diseases, against numbers declining steadily from 849 to 311 in the nine preceding weeks; of these 293 deaths, 110 resulted from diarrhoea, 57 from diphtheria, 42 from whooping-cough, 38 from measles, 30 from scarlet fever, and 16 from "fever" (principally enteric), but not one from small-pox. The 293 deaths from these epidemic diseases last week were equal to an annual rate of 0.9 per 1000, which was lower than the rate from these diseases in any previous week of this year. No death from any of these epidemic diseases was registered last week in Norwich, Rochdale, Reading, York, or in five other smaller towns; the annual death-rates therefrom ranged upwards, however, to 3.4 in Burnley, 3.7 in West Bromwich, 4.0 in Merthyr Tydfil, and 7.6 in Hanley. The deaths attributed to diarrhosa in the 76 towns, which had declined in the nine preceding weeks from 675 to 141, further fell last week to 110, and were fewer than in any week since the end of July; the highest death-rates from this cause in these towns last week were 1.5 in Burnley, 2.2 in West Bromwich, and 2.3 in Hanley. The deaths referred to diphtheria, which had been 51 and 46 in the two previous weeks, rose last week to 57, and caused death-rates equal to 1·1 in Hudders-field, 1·3 in Merthyr Tydfil, and 1·7 in Barrow-in-Furness; this disease also caused 18 deaths in London and its suburban

preceding weeks, rose to 42 last week, and were proportionally most fatal in Swansea. The 30 fatal cases of scarlet fever showed a further decline from recent weekly numbers; and the 16 deaths referred to "fever" showed a considerable decline from the numbers in recent weeks, but included 2 each in Portsmouth, Leeds, and Newcastle-on-Tyne. The number of scarlet fever patients under treatment in the Metropolitan Asylums and London Fever Hospitals, which had been 2810 and 2799 at the end of the two preceding weeks, had further declined to 2743 on Saturday last; 284 new cases of this disease were admitted to these hospitals during last week, against 371 and 345 in the two preceding weeks. The Metropolitan Asylums Hospitals contained 2 small-pox patients on Saturday last. Of the 1107 deaths registered in London last week, 193 were referred to pneumonia and other diseases of the respiratory system, against 167 and 174 in the two preceding weeks, but were 36 below the corrected average number in the corresponding week of the five years 1904-08. The causes of 27, or 0.7 per cent. of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death registered during last week were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Salford, Leicester, and in 56 smaller towns; the 27 uncertified causes of death in the 76 towns last week included 8 in Liverpool and 6 in Birmingham.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 787 births and 462 deaths were registered during the week ending Oct. 30th. The annual rate of mortality in these towns, which had been 12.8 and 13.1 per 1000 in the two preceding weeks, declined again to 12.9 in the week under notice. During the first four weeks of the current quarter the annual death-rate in these Scotch towns averaged 12.7 per 1000, and exceeded by 0.4 the mean rate during the same period in the 76 large English towns. The annual death-rates last week in these Scotch towns ranged from 8.0 in Aberdeen and 11 · 4 in Paisley, to 18 · 4 in Perth and 18 · 8 in Greenock. The 462 deaths from all causes in the eight towns last week showed a decline of 8 from the number in the previous week, and included 34 which were referred to the principal epidemic diseases, against 45 and 54 in the two preceding weeks. These 34 deaths were equal to an annual rate of 1.0 per 1000, against a mean rate of 0.9 from the same diseases last week in the 76 English towns. The 34 deaths from these diseases in the Scotch towns last week included 10 from diarrhosa, 9 from measles, 6 from scarlet fever, 4 from diphtheria, 4 from whooping-cough, and 1 from "fever," but not one from small-pox. The deaths attributed to diarrhosa, which had been 15 and 28 in the two preceding weeks, declined last week to 10, and were fewer than in any week since the end of March last; 4 were returned in Glasgow and 2 in Leith. The 9 fatal cases of measles exceeded the number in any recent week, and included 8 in Glasgow. Of the 6 deaths from scarlet fever, 5 occurred in Glasgow. The fatal cases of diphtheria, which had been 12 and 11 in the two preceding weeks, declined last week to 4, of which 2 were returned in Edinburgh. The 4 deaths from whooping-cough included 2 both in Glasgow and in Edinburgh; and the fatal case of "fever" occurred in Glasgow. The deaths referred to diseases of the respiratory system in the eight towns, which had been 57 and 84 in the two preceding weeks, declined again to 68 last week, and were 19 below the number in the corresponding week of last year. The causes of 9, or 1 9 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0.7 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of rather more than a million, 614 births and 359 deaths were registered during the week ending Oct. 30th. The mean annual rate of mortality in these towns, which had districts, and 6 in Manchester and Salford. The 38 fatal cases of measles showed a slight increase, and caused been equal to 1.5 in West Bromwich, Wallasey, and Burnley, and to 3.8 in Hanley. The deaths from whooping-cough, which had been 27 and 28 in the two

mean death-rate during the same period did not exceed 12 · 3 in the 76 largest English towns, and 12 · 7 in the eight principal Scotch towns. The annual death-rate during last week was equal to 18.6 in Dublin, 19.1 in Limerick, 19.2 in Cork, 15.6 in Belfast, and 15.7 in Londonderry; the mean rate in the 16 smallest Irish town districts last week was equal to 13.9 per 1000. The 359 deaths from all causes in the 22 town districts last week showed an increase of 34 upon the number in the previous week, and included 26 which were referred to the principal epidemic diseases, against numbers declining from 42 to 22 in the four preceding weeks; these 26 deaths were equal to an annual rate of 1.2 per 1000, against 1.0 in the previous week; in the 76 English towns the rate from the same diseases last week did not exceed 0.9 per 1000. The 26 deaths from these epidemic diseases in the Irish towns last week included 12 from diarrhosa, 10 from whooping - cough, 2 from "fever," and 1 each from measles and diphtheria. but not one either from scarlet fever or small-pox. The 12 deaths from diarrhoea in the 22 towns last week corresponded with the number in the previous week, and included 3 in Dublin, 3 in Belfast, and 2 in Waterford. The 10 fatal cases of whooping-cough showed an increase of five upon the number in the previous week; 5 occurred in Belfast, 3 in Limerick, and 1 each in Dublin and Waterford. Of the 2 deaths referred to enteric fever 1 each The 60 deaths was returned in Dublin and in Lisburn. referred to pneumonia and other diseases of the respira-tory system last week in the 22 towns showed an increase of 10 upon the number in each of the three pre-The causes of 19, or 5.3 per cent., ceding weeks. of the deaths in these Irish towns last week were not certified by a registered medical practitioner or by a coroner; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0.7 per cent., and in the eight Scotch towns the proportion was 1.9 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified: —Staff-Surgeons: F. H. Nimmo for three months' study at West London Hospital, lent, to reside at Greenwich College; P. T. Nicholls to the Victory. Surgeons: J. R. A. Clark-Hall to the Excellent; and G. G. Vickery to the Victory, additional, for disposal.

ROYAL ARMY MEDICAL CORPS.

Lieutenant William E. Marshall is seconded for service with the Egyptian Army (dated Oct. 14th, 1909).

Major M. P. C. Holt, D.S.O., has been appointed specialist in advanced operative surgery, 3rd (Lahore) Division. Major R. F. E. Austin, from Chatham, has been appointed to India.

THE ROYAL ARMY MEDICAL CORPS COLLEGE

The course for Captains on promotion to Major has begun at the Royal Army Medical College, Millbank, S.W. The course of instruction will be extended over a period of nine months and some 50 officers will attend. It is understood that the first three months will be devoted to lectures and laboratory instruction in military hygiene and tropical medicine at the College, the second three months to postgraduate courses in the London hospitals, and the last three months to specialist's work connected with either hygiene, bacteriology, advanced operative surgery, ophthalmology, midwifery and diseases of women and children, dentistry, or venereal diseases and dermatology. Examinations will be held at the end of each three months.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel Harris has been appointed an Honorary Surgeon to H.E. the Viceroy, vice Lieutenant-Colonel Perry. Major Heard, on his return to India from leave, has been appointed Professor of Midwifery in the Lahore Medical College. Major Hugh Ainsworth, at present Officiating Medical Adviser, Patiala State, has been appointed Professor of Ophthalmic Surgery in the Lahore Medical College. The services of Colonel Carruthers and Captain Cazalay are replaced at the disposal of the Commander-in-Chief. The replaced at the disposal of the Commander-in-Chief. The maintains a convalescent home (70 beds), to which over services of Captain Roberts are replaced at the disposal of 1000 patients are admitted annually. To carry on this great

the Army Department, and those of Captain Young are placed temporarily at the disposal of the Eastern Bengal and Assam Government for employment in the Sanitary Department. Captain Holmes has been appointed Civil Surgeon at Quetta. Major E. C. Macleod, Agency Surgeon, is granted one year's leave. Lieutenant Zorab is permitted to resign the service from Sept. 26th, 1909.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Supplementary List: The undermentioned to be Lieutenants (on probation):—Edward Andrew Gregg (dated July 30th, 1909), and Arthur Henry Habgood (dated Sept. 22nd, 1909).

TERRITORIAL FORCE.

Royal Army Medical Corps.

London Mounted Brigade Field Ambulance: Captain William Peart Thomas, from the 2nd London (City of London) Field Ambulance, Royal Army Medical Corps, to be Captain (dated Sept. 27th, 1909).

1st London (City of London) General Hospital: Brigade Surgeon-Lieutenant-Colonel and Brevet Colonel Charles Edward Harrison, C.V.O., retired pay (late Grenadier Guards) to be Lieutenant-Colonel (dated Oct. 19th, 1909).

Attached to Units other than Medical Unics .- Lieutenant Ashley Bird to be Captain (dated April 1st, 1908).

For Attachment to Units other than Medical Units .- John Walter Pridmore to be Lieutenant (dated Sept. 21st, 1909).

Correspondence.

"Audi alteram partem."

THE ROYAL HOSPITAL OF BARTHOLOMEW.

To the Editor of THE LANCET.

SIR,—A few months since public attention was directed to the needs of St. Bartholomew's Hospital by a conference at the Mansion House between the Lord Mayor, the treasurer of the hospital, and the masters of the leading City guilds, with reference to the financial position of the institution. At that meeting Lord Sandhurst, the treasurer, explained the exact state of affairs, and the Lord Mayor read the following letter which he had received from Colonel Sir Arthur Bigge:

Marlborough House, Pall Mall, S.W.

Mariborough House, Pall Mall, S.W., April 6th, 1909.

My Dear Lord Mayor.—I am directed by the Prince of Wales to inform you that, as President of St. Bartholomew's Hospital, he has lately had an opportunity of learning from Lord Sandhurst, the treasurer, that there is now an annual deficit of about £12,000 in the working of the hospital, due in a large measure to payment of interest on a capital debt of approximately £170,000. His Royal Highness me to say that he has received this information with much regret, as he would view with grave concern the necessity for in any degree curtailing the work of what is the only general hospital in the City boundaries. His Royal Highness sincerely trusts that funds may be raised to prevent the possibility of such an unfortunate contingency.

Yours very truly,

The Right Hon, the Lord Mayor.

ABTHUR BIGGE.

For various reasons, but in particular as it was desired not to clash in any way with the annual collection of the Hospital Sunday Fund, it was decided to postpone making a general appeal until the autumn. The time has now arrived when it has become necessary to take steps to meet the grave situation with which St. Bartholomew's is faced, and we desire to urge its unique claims to public sympathy and

support.

For nearly 800 years St. Bartholomew's Hospital has carried on, on its present site, a great work: firstly, in the alleviation of the sufferings of the sick, maimed, and diseased poor; and secondly, in the training of medical practitioners whose services in after life are of incalculable benefit to humanity, rich and poor alike, all over the world. From time to time the accommodation of the hospital has been increased to meet the demands upon it, and there are now 680 beds. On an average 8000 patients are admitted to its wards in each year, while some 130,000 persons are treated in the out-patients' department. The hospital also

work involves an expenditure of about £75,000 a year, and until recently the revenues of the hospital were sufficient for its maintenance and the general public was not asked to contribute in any way, but owing to the gradual expansion of expenditure consequent upon the advance of medical and surgical science, and to the reduction of the available income by some £9000 a year, due to certain charges for interest and sinking fund in connexion with the acquisition of additional site, there is now a deficit of about £12,000 per annum. The capital debt upon which interest is payable is approximately £170,000, of which sum £50,000 was borrowed to meet current obligations, mainly in connexion with the recent structural additions.

While acknowledging the generous response accorded to the special appeal started in 1904 for rebuilding purposes we feel very strongly that the claims of St. Bartholomew's Hospital have hitherto not been fully realised by the public, and it has consequently lacked support proportionate to its needs and to the great benefits it confers. In again referring to the fact that the hospital has been maintained for generations, unaided by the public, we would mention incidentally that it has not participated in the benefactions of King Edward's Hospital Fund for London or the Hospital Sunday and Saturday Funds.

A special fund has been started to liquidate the capital debt and thereby reduce the annual deficit, and we very earnestly appeal for contributions for this purpose and for annual subscriptions towards the general maintenance of the hospital. Cheques may be addressed to the Right Hon. the Lord Mayor, Mansion House, E.C., or to the Lord Sandhurst. Treasurer, St. Bartholomew's Hospital, London, E.C.

The following donations have already been received or promised, viz. :-

)00 500
THE WOLDEN	,.	****************	Merchant Taylors (in two instal-	~~
••	•)00
11	**	**		105
11	**	**		Ж
11	**	**		105
Anonymous	•••	••• •••	2	250

We have the honour to be, your obedient servants,

G. WYATT TRUSCOTT (Lord Mayor), A. F. LONDON,

ALDENHAM, F. G. BANBURY, OTTO BEIT, BLYTH HENRY T. BUTLIN, W. S. CHURCH, C. A. CRIPPS, DYCE DUCKWORTH. R. B. FINLAY, ERNEST FLOWER, CLAUD HAMILTON, ALEX. HENDERSON. ARTHUR HILL, R. W. INGLIS.

October, 1909.

SANDHURST (Treasurer of the Hospital), E. LETCHWORTH, JOHN C. LOVELL, J. H. LUSCOMBE, RICHARD B. MARTIN. 8. HOPE MORLEY, R. DOUGLAS POWELL. ALFRED DE ROTHSCHILD, MARCUS SAMUEL, HENRY SCHRÖDER, EDGAR SPEYER, THOMAS SUTHERLAND, EDWARD P. TENNANT. W. P. TRELOAR.

THE INFLUENCE OF DIET ON THE THYROID GLAND.

To the Editor of THE LANCET.

SIR.—I observe with interest that increasing attention is being paid by clinicians to the influence of diet on the thyroid gland. For example, we find that Dr. Leonard thyroid gland. For example, we find that Dr. Leonard Williams in his interesting address published in THE LANCET of Oct. 30th expresses the following opinion: "The explanation of all the numerous meat-excluding dietaries is based on the fact that their apostles and disciples suffer from diminished activity of the thyroid gland upon which meat fouds are known to act so as still further to diminish its activity." The italics are mine, and with your permission I would like to comment on the statement here made. It is possible that the views which have been recently expressed by some writers as to meat being a "depressant of thyroid activity" have their origin, to some extent, in the results of the investigations on this subject which I have published in the last few years. I think it important, therefore, to raise

a word of caution as to the too general adoption of the view that a meat diet "depresses" thyroid activity.

The fact is that a meat diet is primarily a stimulant of the thyroid gland, and my observations have, I think, shown that this stimulating effect may be continued throughout the life of the animal. The stimulating effect is revealed by an increase in the size of the gland or by a change in the microscopic appearances of the gland, or by both of these conditions. In the later stages of life, or in the second generation of animals, the effect is more frequently the reverse, the microscopic appearances of the gland indicating a marked impairment in its functional activity. From the clinical point of view it is, I think, important for practitioners to bear in mind not only the "depressant" properties of meat in mind not only the "depressant" properties of meat in relation to the thyroid gland to which increasing attention is now being made, but also to its "stimulating" properties as described above. I have previously drawn attention to this. There are conditions—e.g., tuberculosis—in which a diet which contains an excessive amount of protein is of special value in treatment; in my opinion the beneficial effects of the dietetic treatment in these cases are to a great extent the result of the special influence of that diet on the thyroid gland. On the other hand, there are conditions-e.g., gout in which the administration of a diet which contains little protein is of special value, and I think that clinicians are right in accepting the view that this favourable result is in an important degree attained through the influence of that diet on the thyroid gland.—I am, Sir, yours faithfully,

Edinburgh, Oct. 30th, 1909.

CHALMERS WATSON.

ECZEMA AND STAPHYLOCOCCUS VACCINE.

To the Editor of THE LANCET.

SIR,-In THE LANCET of Sept. 25th last I wrote on this same subject. In that letter I was myself the patient, and the argument for the use of staphylococcus vaccine in eczema would have been dismissed by anyone who considered that the disease described was that of a staphylococcus infection of the skin, a disease already recognised by Savill and others as bearing a close resemblance to eczema. Since the above case there has been under my care a boy, aged 16 years, who was suffering from acute eczema of a very pronounced type, and this boy has become completely cured in five weeks, the treatment—specifically for the diseasebeing solely the staphylococcus vaccine. The case shall be described and the reasons for regarding it as an ordinary case of severe acute eczema will be seen to be quite strong. The contention that it was cured by staphylococcus vaccine and the deduction that some cases of acute eczema are due to general staphylococcus infection will in that case have to be admitted.

The boy became ill with spots on the face on Sept. 10th; by the 12th they had extended greatly, and when I saw him on the 14th the condition was as follows. The right external ear was covered with branny scales of eczema; the external meatus was discharging freely; the sides of the face and chin were so covered with scab and rash that the patient was an object of curiosity to the beholder and unpleasantly self-conscious of the fact. The beholder and unpleasantly self-conscious of the fact. rash covered the whole of the front of the trunk so thickly as to give at a little distance a rosy-red appearance; the front of the thighs and legs down to the tibial tubercles, where the rash was more sparse than on the trunk; both elbow flexures, the front of the forearms and the palmar aspect of the hands and fingers; two or three fingers on either hand were bandaged on account of the "weeping." The injections of vaccine were all made into the arms; they were commenced on Sept. 15th and were continued to Oct. 23rd. They were given as follows in millions:—Sept. 15th, 100; 18th, 100; 22nd, 250; 25th, 500; 27th, 500; 29th, 750; Oct. 2nd, 1000; 9th, 1000; 23rd, 750. Very little local pain followed the injections and no constitutional disturbance. The periods chosen for the injections were according to the duration of the local induration at the site of the injections and the progress of the case. When this progress was arrested a fresh injection followed.

The progress of the case was uninterrupted. On Sept. 21st, 22nd, and 23rd the patient came to consult me on account of great pain in the penile urethra after passing urine. The

wrine passed was very acid, but I did not find any crystals. He did not come until after the last date of the pain, and this did not recur after benzoate of soda was given. This pain I ascribed to irritation of the urethra from the passage of crystals of uric acid or urate of soda. By Oct. 2nd the patient was well except for the ear and a few spots on the chin and pubis. On the 9th the only evidence of the persistence of the rash was a triangular patch amongst the public hair, and on the 23rd he was quite well except for a few discrete spots over the publs. I propose to continue the injections for another six weeks. The diagnosis was based. firstly, upon the appearance of the rash and its character of accumulating scaly scabs and weeping; secondly, on the character and reaction of the urine; and, thirdly, on the fact that the boy's mother had suffered from two wellmarked attacks of acute eczema during her lifetime.

I am, Sir, yours faithfully, G. W. DAVIS, M. D., B.S. Durh. Sidcup, Oct. 25th, 1909.

FAIR-HAIRED JEWS.

To the Editor of THE LANCET.

SIR,—In reading your report in THE LANCET of Oct. 30th of Dr. Leonard Williams's paper, "To Redress the Balance," I note he refers to "the fair skin and the red hair which long residence in northern climes has conferred upon some Jewish families." Dr. Williams is evidently unaware that this type of Jew is common in the East. Professor Ripley in his work "The Races of Europe" says: "The rufous tendency in the Oriental Jew is emphasised by many observers" (p. 394). On the same page he quotes Beddoe as suggesting that a cross with the blonde Amorites may account for the phenomenon. To myself it appears to be one of the most significant facts in the part played in history by the Jewish nation that Palestine is situated at a meeting-point of the three great ethnic divisions of the world; and the Jews, whether in their origin or by absorp-tion of individuals from neighbouring races, have affinities with "all people that on earth do dwell."

I am, Sir, yours faithfully, J. S. MACKINTOSH, M R.C.S. Eng., L.R.O.P. Lond. Hampstead, Oct. 30th, 1909.

THE BIRTHPLACE OF SIR THOMAS BROWNE.

To the Editor of THE LANCET.

SIR, -As a Norfolk man I was naturally interested in your annotation (Oct. 30th, p. 1299) on the Norfolk and Norwich Hospital, but was not prepared to find the statement that Sir Thomas Browne was born in Norwich. I believe there is very little doubt he was born in London. In Dr. Johnson's life of Sir Thomas Browne it is stated that he was born "in the parish of St. Michael-in-Cheapside on Oct. 19th, 1605; his father was a merchant of ancient family at Upton in Cheshire; of the name or family of his mother I find no account." He settled in Norwich in 1636.

I was in Dublin a few weeks ago, and the "jarvey" who was driving me told me that the Nelson monument in Sackville-street was erected to the memory of a distinguished brishman named Lord Nelson who was born in Dublin. I was not surprised at this information coming from the owner of an Irish jaunting-car, and one is now getting quite familiar with inaccuracies in certain political speeches, but one hardly expected to find anything but "the truth, the whole truth, and nothing but the truth" in THE LANCET.

I am, Sir, yours faithfully, H. LITTLEWOOD.

Leeds

_ Peccavimus.—Ed. L.

LONDON HOSPITALS AND SCHOOL CHILDREN.

To the Editor of THE LANCET.

STR.—Under the above heading in to-day's Times a proposed arrangement between the London County Council and various hospitals is outlined. May I point out in regard to St. George's Hospital that the children to be seen are to be selected necessitous cases who are unable to provide adequate treatment for themselves, either through a private general

practitioner or otherwise, there being a double safeguard that only necessitous children are treated-firstly by as inquiry by the London County Council, and secondly one by the hospital almoner, for whom the hospital reserves this right. I trust you will be good enough to insert this, as this distinction makes a great difference, and the statement as appearing to-day may give rise to serious misunderstanding.

I am, Sir, yours faithfully,

A. WILLIAM WEST,

Treasurer and Chairman, St. George's Hospital, S.W.
St. George's Hospital, S.W., Nov. 3rd, 1909.

THE BREAD PROBLEM AT BUDAPEST.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

THE OUTCRY AGAINST BAD AND DIRTY BREAD .- THE OLD PARIS MUNICIPAL BAKERY .- THE NEW MODEL MUNI-CIPAL BAKERY AT BUDAPEST .- HOW THE WORKMEN ARE BATHED AND CLOTHED BEFORE MAKING BREAD.

On the occasion of the Sixteenth International Congress of Medicine the most elaborate measures were taken at Budapest to show the foreign members whatever progress had been achieved from the medical or sanitary points of view. The faculty of medicine, the clinics, the operatingrooms, the hospitals, the charitable institutions, the bacteriological and other institutes, the asylums, the disinfecting station, the waterworks, the sewers, the schools and crèches, the public baths, and many other establishments were thrown open to the visitors. All that Budapest had to show proved very interesting, and many of these social and public services were admirably organised, but the greatest sympathy was naturally evoked by certain work being done in Budapest that has not been attempted elsewhere. The town of Budapest has undertaken to supply the inhabitants with clean, wholesome, and cheap bread. Model bakeries exist in many places, but the only general municipal bakery I have ever visited is that of Paris, and it is a very amail undertaking when compared with the bakery which the municipality of Budapest has built, and which was inaugurated the week before the Medical Congress met.

Many years ago now I described the Paris municipal bakery. It is situated in the Rue Scipion, near the Boulevard des Gobelins, and now its only purpose is to supply bread to the municipal hospitals. There was, however, a time when there were depôts in the public markets so that the ordinary inhabitants of Paris might buy the municipal bread, which was very generally found to be better made, cheaper, and purer than that sold in many of the shops. This custom prevailed from 1856 to 1870, and the municipal quartern loaf was always a halfpenny cheaper than the price of bread as by law established. It is known that in France, ever since the great Revolution, bread is taxed; that is to say, the authorities decide from time to time at what price bread must be sold, and the tax or tariff varies, of course, according to the price of wheat. After the siege of Paris the municipal bakery ceased to self its bread to the public, and only baked 14,000 kilogrammes daily, which is consumed for the most part in the hospitals and asylums. The municipal supply, therefore, no longer comes into competition with the general baking trade.

At Budapest some six years ago the poorer sections of the community made many complaints about the bread. It was badly made and insufficiently nutritious. The press took up the question and a cry arose for a better bread-supply. The municipality, to whom it was pointed out that other towns were better served and that at Vienna the bread was not so dear and more wholesome, took up the entire question, and finding that the bakers were not at all inclined to build proper and clean bakeries and were indifferent to the protests of the public they determined to set up a model municipal bakery. By municipal competition the private bakers would be either driven out of the trade altogether or compelled to produce in decent premises wholesome and clean bread. The public should not be allowed to suffer any longer through the self-interest of the baking trade. A model bakery, therefore, has been built at a cost of £25,448. It may, in further explanation of this action, be added that there is no special law in Hungary on bakeries.

¹ THE LANCET, Jan. 25th, 1890, p. 208.

The only law affecting them is the general law on the State inspection of factories and workshops. This law is notoriously inefficient and badly applied. Even when a conviction is obtained the fine imposed is so very small that it

does not deter the culprits.

The Budapest Municipal Bakery was opened on August 23rd last, and after attending the Medical Congress I was able to visit the establishment when it was in working order. It is situated on an open space in the outskirts of the town, surrounded by vacant land which is available to extend the bakery if necessary. The building is lofty and has architectural pretensions. On all sides of the building, the rooms of which are lofty, there is ample space. Instead of the dark cellar bakery we have here a succession of palatial halls. Instead of half-naked men, toiling and sweating as they plunge their arms into the dough, there is magnificent kneading machinery.

Though the journeymen bakers have hardly any occasion to touch the dough or the bread with their hands, the utmost precaution is taken to ensure the most thorough cleanliness. most thorough cleanliness. On entering the factory the workmen are introduced into a large compartment where there is a series of lockers. They are made to undress and place their clothes in these lockers. Then they proceed to a bathroom fitted with hot and cold douches, baths where the bather may lie down at full length, and a plunge bath into which it is possible to take a header and to swim a few strokes. For the operative who has been thus cleansed from head to foot a working suit of clean, washable, special clothes is provided by the municipality. Only when thus bathed and clothed is the journeyman baker allowed to enter the bakery and to work. The walls of the bathroom are of glazed or enamelled bricks, and it is in every respect worthy of a first-class hydropathic establishment. Then as in winter it is too cold to open the windows, fan mechanical ventilators worked by electric power are placed in ventilating shafts to ensure pure air. There is also a medical service. All the workers are medically examined before they are engaged; and while at work they are periodically examined. Thus no one is allowed to touch the bread which the people are to eat unless they are not only perfectly clean but also in thoroughly good health. Further, there is a chemist employed who analyses everything that enters the establishment, even the coal. But there is not much coal used, as oil motors for the dynamos are employed. Needless to say the premises are lighted throughout by electricity.

The flour on arriving at the municipal bakery is delivered by lifts on the third or upper floor of the building. Here the floor is made of solid brick and concreted over so as to keep the mice away. There are large wooden receptacles containing sieves worked by machinery. Into these the sacks of flour are emptied and various kinds of flour mixed. If there is any foreign substance in the flour it is retained by the sieves; then as the flour travels downwards it passes close to a strong magnet which draws away any small particle of metal which may have got mixed with the flour during the process of grinding.² The receptacles are so constructed that they automatically close when 300 kilogrammes of flour have been poured into them. This is the amount which each mechanical kneading machine can treat. There is also a cleaning machine for the flour sacks. The flour extracted from the sacks is used for feeding pigs. When, on a lower floor, the dough has been mixed, fermented, and sufficiently kneaded by machinery, it is shaped into loaves and placed in the patent ovens with little or no manipulation. Throughout there are ample space and light. walls are painted a soft light green, on which the smallest speck of dirt would be seen and from which it could be washed away. There are specially constructed carts to convey the bread to town. These contain two carts to convey the bread to town. These contain two shelves for baskets, each holding 15 two-kilogramme loaves. The sides of the cart are made of canvas, which keeps out the dust, but lets air through. Each loaf has a label that is either triangular, square, or round in shape, according to the quality of the bread; therefore it is not necessary to know how to read in order to tell what sort of bread is being served. These labels bear the arms of the town and certify that the loaf has come from the municipal

The Hungarians, it appears, do not like bread unless it contains a large quantity of potato. They say that if made of pure wheat the bread gets dry in two days, but when potatoes are mixed with the wheat it will keep moist for a long time. There should not, however, be more than 18 per cent. of potato, whereas private bakers often put in as much as 40 per cent. of the cheaper and less nutritious potato. The municipality has had to conform to the general custom of adding potatoes, but takes care that there shall not be more than 18 per cent. of potato in its bread. It sees to it also that the potatoes are sound and clean. They are washed by machinery in a revolving grid. They are peeled by women who are provided with a comfortable dressing-room where they must wash themselves as carefully as they wash the potatoes, and must put on pinafores supplied by the municipality before they are allowed to touch the potatoes. When peeled by these women, the potatoes are cooked by steam and put into a large mill and reduced to pulp.

Thus it will be seen that every care is taken that the bread shall be pure, clean, and nutritious. The whole scheme forms an important step in the direction of what was so often described at the Congress as "social medicine." With the very low rate of wages prevailing in Hungary it does not suffice to have pure and clean bread, it must also be cheap bread, and the municipality does not seek to make any profit on its bread, but only to sell it at a price that will admit of paying the interest on the borrowed capital, and the creating of a sinking fund so that the whole debt shall be cleared off in 50 years. It will then be possible to sell the bread even cheaper, or else to make a profit on it. As it is, the bread was sold at 6 hellers per kilogramme cheaper than the prevailing Thereupon, and within the first week of municipal competition, the private bakers lowered their prices 4 to 6 hellers, or, roughly speaking, about one halfpenny on 2 pounds of bread; a reduction which affects very closely the poorer sections of the large population of Budapest, for whom bread is the chief article of diet. Nor is the municipal competition which has brought about this great economy of the people's money very severe, for the model municipal bakery does not produce more than 25,000 kilogrammes of bread daily. It will get severer unless the private bakeries meet the situation by improving their wares, for the people are most anxious to have bread on which they can rely, which they know is clean, nutritious, and wholesome. The municipality contemplates immediate development of the enterprise, and another loan is being negotiated, this time for 2,000,000 crowns, or £83,333, so as to enlarge the bakery to such an extent that it will be possible to bake daily 200,000 kilogrammes of bread. Then all the hospitals, cooperative societies, charities, and asylums will be able to have the municipal bread.

There remain a few words to say as to the position of the workmen employed. At the Paris municipal bakery they have abolished night work, established the eight hours day and old-age pensions long before these conditions had become planks of the labour platform throughout Europe. At Budapest the conditions are not so good. The workmen employed at the municipal bakery do not get better wages than in the trade generally, but they work shorter hours and under infinitely better conditions, as will be gathered from the description of their hygienic environment. on the premises from 6 A.M. to 6 P.M., but have from 8 to 8.30 for breakfast and from midday to 2 P.M. for dinner, so that it is a nine and a half hours day of actual work. At private bakeries there is only night work. The law on compulsory insurance against accidents and sickness applies, of course, to all the workpeople at the municipal bakeries, so that it is not a great hardship when any of them are kept away through illness. Altogether, and whatever may be the objections raised against municipal trading, all must approve of clean and wholesome bread. No municipality has done so much before to ensure the provision of such bread as that produced at the municipal bakery of Budapest, which was the novelty of novelties shown to the members of the recent International Congress of Medicine.

I do not enter into any arguments about the morality or expediency of municipal trading. My business here is to state the facts.

² I may refer here to a lecture published in The Lancet of August 24th, 1907 (p. 502), by Mr. W. H. Battle on Stricture and Traumatism of the Vermiform Appendix.

DEVONSHIRE CENTENARIAN.—Mrs. Mary Sutherland of Plympton St. Maurice celebrated the 100th anniversary of her birthday on Oct. 19th.

1385

THE SECOND INTERNATIONAL CONGRESS FOR THE REPRESSION OF FRAUD.

(FROM OUR PARIS CORRESPONDENT.)

THE questions on the official programme of this Congress were given in our Paris letter last week. The first day's proceedings were mainly formal, but on the second day some very interesting work was done. In the section for beverages sanction was given: (1) to the blending of wines with one another or with fresh grape juice; (2) to fining; and (3) to the use of carbon for improving damaged white wines. the section for mineral waters it was decided that they should not be kept in casks, that they should not be conveyed from place to place in vessels holding more than 30 litres, and that all the processes which they had undergone ought to be mentioned on the labels. Another section considered that the addition of chicory to coffee ought to be stated, that liquid preparations of coffee ought not to contain chicory, that every resort to methods of colouring coffee as well as the treatment of it with sugar and hygroscopic substances ought to be stated, and that roasted coffee ought not to contain more than 5 per cent. of water. The section for milk and milk products passed a resolution to the effect that any abstraction of cream from milk offered for sale ought to be mentioned on the label for the information of the purchaser, and that butter ought not to contain more than 18 per cent. of water; the artificial colouration of butter was recognised as legitimate, and likewise the addition of antiseptics to butter, if the hygienists sanctioned it. The section for baking passed a resolution to the effect that, inasmuch as official experiments conducted under scientific control had shown the impossibility of giving a loaf an exact weight, the shape of a loaf ought never to be considered as indicating its weight. The section for confectionery decided that when preserved fruit or fruity substances were designated by names which implied preservation with sugar, but were in reality not prepared with fruit and sugar only, the fact should be stated on the label. The section for the provision trade decided that the label "huile des graines" should be compulsory for mixtures of poppy-seed oil, colza oil, and linseed oil with edible oil; that the label "huile fine" should denote a mixture of edible oils; that giving a green colour to vegetables with salts of copper in the proportion of 120 milligrammes per kilogramme was legitimate; and that the name "sardine" should be limited to the alosa sardina.

On the third day the section for beverages considered the question of cider and perry, and defined cider-perry with exclusion of dried apples in cider making; cider" ought to mean cider containing between 2 and 4 per cent. by volume of alcohol; the addition of water or tartaric acid was discountenanced; the only colouring matter which was recognised was caramel. With regard to vinegar, it was decided that dilutions of rectified acetic acid might be called by this name; the addition of organic and mineral products was forbidden, except that (1) alkaline bisulphites in the maximum proportion of 20 grammes per hectolitre, and (2) caramel as a colouring substance were sanctioned; distillery vinegars were excluded. The section for hygiene discussed substances used for colouring. The use of artificial yeast in bread-making was sanctioned, but the making of ornamental designs in sawdust or with "corozo" was forbidden. The use of gelatin in confectionery or preserves was sanctioned, but the addition of alum to substances employed as food was expressly forbidden. On the same day the members of the Congress were invited to a reception at the Hôtel de Ville, where an address of welcome was delivered by the President of the Municipal Council, after whom the Prefect of the Seine and the Prefect of Police said a few words and the President of the White Cross returned thanks.

On the fourth day the definitions which had been proposed for 50 pharmaceutical products by a committee were considered and accepted without important modifications. In the section for hygiene, after a long discussion on the subject of preparing soluble cocoa by roasting the beans with potassium carbonate, it was decided by a large majority (1) that the permissible quantity of potash should be 2 per cent. in excess of the alkalies of the cocoa; and (2) that the resulting product should have an acid reaction. In the evening M. Jean Dupuy, is case by agreement. The student organisations already in existence come under five headings: the University College Women's Union, which admits its members to 17 different clubs and societies; the University College Women's Union, whose members are admitted to the privileges of nine lesser organisations; the University College Women's Union, whose members are admitted to the privileges of nine lesser organisations. The student organisations already in existence come under five headings: the University College Women's Union, whose members are admitted to the privileges of nine lesser organisations. The Bristol Day Training College for Men; the Amalgamated Clubs of the Day Training College for Women; and the University of Bristol Men's Club. The fusion of these into one body, sufficiently united to give it power collectively, and

Minister of Commerce, entertained the organisers of the Congress and the foreign representatives at an official dinner, which was followed by a brilliant reception.

On the fifth day the Congress concluded the consideration of the proposals made and the resolutions adopted by the section for beverages. The definition of vinegar was completed by a clause stating that it was the result of the acetic fermentation either of liquids containing alcohol or of the rectified products of distillation of wood; it was, moreover, resolved that vinegar ought to be sold under a name indicating the source from which it was derived. The Congress then considered the proposals of the section for baking. With regard to flour, the Congress sanctioned as a legitimate proceeding the addition to wheat flour of a maximum of 4 per cent. of ground beans. It also sanctioned as optional proceedings to be notified to the buyer, (1) the mixing of different kinds of cereal flour, the ingredients and their proportions in the mixture to be stated; and (2) artificial bleaching of flour by any recognised inoffensive process. The word bread without any further qualification ought, the Congress considered. to be reserved exclusively for the substance produced by baking dough made with a mixture of wheat flour, yeast (which might be either brewer's yeast or made with dough), potable water, and salt. If the bread was made with another kind of flour it ought to bear the name of the flour (of one or more kinds) which entered into its composi-On the same day M. Bolo, the general delegate for life of the Universal Society of the White Cross of Geneva, gave a luncheon, at which the Under-Secretary of State at the Ministry of War presided, and speeches were made by M. Bolo and others.

On the forenoon of the sixth day a general meeting concluded the examination of the work of the various sections. In confectionery the employment of glycerin and alum would be no longer considered legitimate. The decisions relative to milk and eggs were confirmed. The addition of boron compounds to butter, although in a general way prohibited, was sanctioned for butter to be exported to countries where the addition of borax was allowed, but the addition of nitrate of potassium was prohibited. In the miscellaneous provision trade the definition of larded veal was withdrawn and the permissible proportion of moisture in pork pies was raised from 70 to 75 per cent. Only some unimportant modifications were made with respect to mineral waters.

The official conclusion of the proceedings was announced by Dr. Bordas, speeches being also made on this occasion by various delegates as well as by the President of the White Cross, the organisation responsible for the Congress.

BRISTOL AND THE WESTERN COUNTIES. (FROM OUR OWN CORRESPONDENTS.)

University of Bristol.

A USEFUL little pamphlet has been issued to students and others interested by the Men Lecturers' Committee, summarising the present position of the various athletic and social organisations in connexion with the University, and the possibility of coördinating the whole by means of a "guild of undergraduates." Under the charter provision is made for such a guild. Any definite steps towards its formation are at present held in check by considerations relative to a compulsory subscription. Meanwhile, however, the ground can be surveyed, and the pamphlet already mentioned contains proposed ordinances and regulations. Briefly speaking, these suggest that every University student shall be a member of the guild, that his or her subscription shall be paid at the same time as the registration fees of the University, and that there shall be a central committee empowered to affiliate clubs and societies on such terms as may be determined in each case by agreement. The student organisations already in existence come under five headings: the University College Union, which admits its members to 17 different clubs and societies; the University College Women's Union, whose members are admitted to the privileges of nine lesser organisations; the Union of Social and Athletic Clubs of the Bristol Day Training College for Men; the Amalgamated

also elastic enough to allow liberty to individual clubs and members, is the problem which confronts the University undergraduates.

A School for Mothers.

Bristol is to have a "school for mothers and babies' welcome" on the same lines as the corresponding organisation which has done such good work in St. Pancras, London. An influential ladies' committee has been formed and a beginning made by means of a small exhibition. At this it was shown how sick-room appliances might be improvised by the use of everyday materials, and garments and nursing requisites which could be made at home were also exhibited. The school, which is to start next month, will be worked in connexion with the Broad Plain Settlement in St. Philip's, an east-end district with 65 persons per acre and an infant mortality of 162 per 1000; through the kindness of the warden, Mr. F. N. Colborne, two rooms will be available rent free. A medical lady has been secured to advise the mothers, and help will also be given by several trained nurses and other ladies. It is proposed to charge the mothers ½d. per attendance.

Vaccination in Bristol.

During the year ended Sept. 29th, 1909, the public vaccinators of Bristol performed 3081 vaccinations and 1383 revaccinations, compared with 2721 vaccinations and 53 revaccinations for the corresponding period of the previous 12 months. The increase was due to the small-pox outbreak which occurred in Bristol during the early part of this year.

The South Devon and East Cornwall Hospital, Plymouth.

A strong appeal for increased financial support has been recently issued by the committee of the South Devon and East Cornwall Hospital, Plymouth. The appeal states that the expenditure of the institution is now about £10,000 per annum and that a deficit of £3500 now exists. The committee add that unless the income is larger it will be necessary to close two of the larger wards of the charity.

The Western Eye Infirmary, Exeter.

The annual meeting of the friends of the Western Eye Infirmary was held on Oct. 29th, under the presidency of the Earl of Devon. The medical report stated that for the year ended Sept. 29th, 1909, 3609 patients had been treated; the daily average number of in-patients was 47. The financial statement showed that a favourable balance remained at the end of the year. The committee state that the whole of the amount required for the erection of the new wing was received early in the year, consequently the building was commenced, and it is hoped that it will be completed and formally opened in the early part of 1910.

The Royal United Hospital, Bath.

At the last meeting of the Radstock (Somerset) urban district council it was decided that in future the sum of 5 guineas weekly should be paid by the local authority to the Royal United Hospital, Bath, for any case of diphtheria admitted to that institution by order of the officers of the council in which an operation had to be performed.

Obituary: Charles Reid, M.B., C.M. Edin.

Much regret was felt in Swindon (Wilts) at the death of Dr. Charles Reid, who had been for some years in practice in the town. Dr. Reid, who graduated M.B., C.M. of Edinburgh University in 1888, was 45 years of age at the time of his death. He was formerly a distinguished athlete and Rugby football player; he was captain of the Scottish Rugby team for several years, and possessed about 30 "international caps."

Nov. 2nd.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Association of Public Vaccinators.

THE annual meeting of the Association of Public Vaccinators of England and Wales was held on Oct. 29th, in Liverpool. The retiring President, Dr. Arthur Drury of Halifax presided at the opening, and there were also present members from various parts of the country. The council of the association, in its annual report, emphasised the need for continued and increased efforts in the direction of educating the general public concerning the importance of vaccination as a preventive against small-pox. Mr. J. C. Bradshaw,

public vaccinator of the West Derby Union, was elected President for the ensuing year. At the conclusion of the formal business of the meeting Dr. E. W. Hope, the medical officer of health of Liverpool, read an able paper dealing with some aspects of vaccination and revaccination. Quoting from Dr. Buchan, an authority of a past era, who drew a lamentable picture of small-pox as the dreadful scourge of the country, Dr. Hope contrasted it with present hospital experiences, asserting that though amongst unvaccinated patients small-pox had mitigated none of its severity, amongst those vaccinated the disease was modified according to the efficiency of vaccination. The real sheet-anchor of protection against small-pox was, and must remain, vaccination in infancy, and revaccination at or about the age of 10 or 12 years. A hearty vote of thanks was accorded to Dr. Hope for his valuable paper. The annual dinner of the association was held in the evening at the Adelphi Hotel, Mr. Bradshaw presiding. Amongst the guests were Dr. Hope, Dr. S. Monckton Copeman, Major Ronald Ross, Dr. T. R. Glynn, consulting physician to the Liverpool Royal Infirmary; and Dr. A. Bernard (representing THE LANCET). The toast of "The Association of Public Vaccinators of England and Wales" was proposed by Dr. A. E. Cope and responded to by Dr. Drury, both of whom laid stress upon impressing the public with the importance of vacci-Dr. Drury pointed out that the attack on vaccination by the antivaccinators was nothing short of a veiled attack on the medical profession and science. He also paid a graceful tribute to Mr. John Burns, the President of the Local Government Board, for the fair manner in which he handled the subject of vaccination in the recent Order dealing with the reduction of fees to public vaccinators. In this connexion it may be mentioned that some of the reductions made in fees by boards of guardians in second and succeeding cases of vaccinations and revaccinations performed by public vaccinators in the same house on the same day were opposed to the recommendations of the Local Government Board which suggested that the lowest fee ought not to be less than 2s. 6d. In many unions the guardians reduced the fee to 1s. 6d. "The Guests of the Association," proposed by Mr. Isaac Holmes of Liverpool, was responded to by Dr. Monckton Copeman, Major Ross, and Dr. Glynn. The toast of "Health and Poor-law" was responded to by Dr. Hope and Mr. Harris P. Cleaver, clerk of the West Derby guardians. Several of the speakers paid a high tribute to the efforts of Mr. Charles Greenwood, the organising secretary of the association. The dinner was a most successful gathering, music and singing enlivening the proceedings.

St. Luke's Day Medical Service.

The medical profession of Liverpool and district held their annual service at St. Luke's Church, Liverpool, on Sunday, Oct. 24th (for St. Luke's Day). The preacher on the occasion was the Right Rev. Dr. Diggle (Bishop of Carlisle), who gave an eloquent and instructive sermon. There was a large attendance of members of the profession, who generally wore academic costume. The offertory, as usual, will be devoted to the Medical Benevolent Fund.

Colonial Office Committee on Tropical Diseases.

Amongst the members of the Advisory Committee appointed by the Colonial Secretary on the subject of tropical diseases is the name of Sir Rubert Boyce, F.R.S., of the University of Liverpool.

North of England Association of Dublin University Graduates:
Annual Dinner.

The members of the North of England Association of Dublin University Graduates held their annual dinner at the Adelphi Hotel on Monday evening, Oct. 18th, Sir Robert Ball, F.R.S., presiding. The principal speakers were Sir Robert Ball, Professor Mahaffy, M.V.O., Mr. Edgar Browne, Archdeacon Madden, and the Lord Mayor of Liverpool The dinner was largely attended, covers being laid for 120 gentlemen. The success of the gathering was largely due to the efforts of the honorary secretaries, Dr. F. J. S. Heaney and the Rev. H. D. Morgan.

The Liverpuol School of Tropical Medicine: Banquet to Sir Alfred Junes, K.C.M.G.

The students and staff of the School of Tropical Medicine entertained Sir Alfred Jones (the chairman of the school) to dinner at the Exchange Station Hotel on Nov. 1st. The chair was occupied by Mr. A. McCabe-Dallas (India), senior

student of the school. Letters of apology for absence were received from Lord Milner, who enclosed a contribution to the funds of the school, Colonel Seely, M.P., and Sir Edward Evans. Special interest was associated with the function from the fact that it represented a kind of leave-taking of Dr. J. W. W. Stephens, who is about to depart for special research work in Egypt; of Dr. H. Wolferstan Thomas, who is proceeding to the Amazon on a yellow fever expedition; and of Dr. Anton Breinl, who is going to Queensland as the director of the new school of tropical medicine there. Prior to the toast-list Sir Alfred Jones, on behalf of the school, presented Dr. Breinl with a dressing-case, silver cigarette-case, and an address-book. In making the presentation Sir Alfred Jones said that the recipient had greatly distinguished himself, and had added to the reputation of the school. The toast of "The Staff and Students of the School" was replied to by Major Ross, who said that he hoped the work of research would not be stopped for lack of funds, as great developments were coming on in connexion with the fight against malarial diseases. Other speeches followed.

Nov. 2nd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

General Council of the University of Edinburgh.

THE statutory half-yearly meeting of the General Council of the University of Edinburgh was held on Oct. 29th, Principal Sir William Turner, K.C.B., occupying the chair. Various matters of medical interest were dealt with; the first of these bore upon the preliminary examination, a motion being carried to the effect that it be represented to the University Court that it was desirable to reconsider the arrangements under which the preliminary examinations in medicine, arts, and science were conducted. It was also agreed that it be represented to the University Court that the rearrangement of the bursary examinations under the powers contained in the recent ordinance should be carried through without delay. Dr. Norman Walker then proposed the following motion, of which notice had been given :-

To remit to the Business Committee to consider and report as to the desirability of procuring by an amending ordinance of the University Court or otherwise further improvements in the medical curriculum and examinations.

This motion was based upon the report which was the outcome of the labours of a committee of the Pathological Club-The main points were that medical study should begin in the summer session, and that if a fixed curriculum were insisted on many of the difficulties which arise in arranging for the later subjects would disappear. While it was recognised that the University was liberal in recognising courses of study in other universities as qualifying for entrance for the earlier professional examinations, it was regarded as advantageous to the University to insist that the later subjects of the medical course should be studied in Edinburgh. tion was also drawn to the tendency for each subject in the medical course to be treated as if it were a water-tight compartment, and that this might be avoided by consultation and cooperation between different departments. Dr. James Ritchie seconded the motion. Professor H. Harvey Little-john, dean of the Faculty of Medicine, said that they were fully aware of the many difficulties in the way of medical education and the order of the curriculum, and they would welcome suggestions from the Business Committee of the

The Parliamentary Representation of the University of Ėdinburgh.

Sir John Batty Tuke, M.P., who has represented the Universities of Edinburgh and St. Andrews for a number of years, has intimated that he is not again to seek re-election. Simultaneously it is announced that Sir Robert Finlay has been selected by the Unionist party as the champion of their cause at the next election. Sir Robert Finlay is an Edinburgh man, and became a graduate in medicine before he entered the legal profession. He represented the Inverness Burghs for a number of years before he lost his seat at the last General Election. He has been Lord Rector of the University and was a well-known member of Mr. Balfour's Government. It has not yet been disclosed whether he is to be opposed or not. Sir John Batty Tuke was opposed at the last election by Mr. St. Loe Strachey.

Edinburgh Royal Infirmary.

The managers of the Edinburgh Royal Infirmary have approved the following minute regarding Professor J. Chiene:

Owing to his resignation of the chair of surgery, which he has so long adorned, the managers have had regretfully to part with the services of Professor John Chiene, and Professor Chiene's connexion with the Royal Infirmary has been a long and brilliant one. He received the appointment of assistant surgeon in 1871 and was promoted to the post of acting surgeon in 1878. Four years later he became professor of surgery in the University of Edinburgh and was entrusted by the managers with charge of the wards attached to that chair. His services, given wholeheartedly and enthusiastically, have thus extended continuously over the long period of thirty-eight years. The managers desire, in now taking leave of Professor Chiene in his capacity of one of the surgical staff of the Royal Infirmary, to record the very high esteem in which they hold him as a man, a surgeon, and a teacher, and their grateful recognition of the unfalling kindness which has throughout characterised his relations with his colleagues and the skill and interest he has shown in his care of the many patients who have passed through his hands. His skilful and judicious treatment of patients from far and near and his good influence over them and all with whom he has worked in the infirmary will be long and gratefully remembered. Owing to his resignation of the chair of surgery, which he has so long remembered.

The minute ends by good wishes for his health and appointing him a consulting surgeon to the institution.

The Edinburgh Medico-Chirurgical Society.

The billet for the first meeting of the session 1909-10 has just been circulated. It is pleasing to see that Dr. Byrom Bramwell has been nominated for the presidential chair in succession to Dr. James Ritchie, for no one has been a more faithful contributor to the proceedings of the society in past years than he.

Pulmonary Tuberculosis in Glasgow.

The health committee of the Glasgow corporation has at a recent meeting adopted the following recommendations put forward in the memorandum prepared by Dr. A. K. Chalmers, the medical officer of health:

- 1. That the corporation, as local authority, resolve that the Infectious Disease (Notification) Act, 1829, shall, for a period of three years, apply to pulmonary phthisis.

 2. That, in addition to the tuberculosis dispensary at present conducted in the Sanitary Chambers, similar dispensaries be provided in the eastern, western, and southern districts of the city.

 3. That a nurse be appointed to each dispensary for systematic visitation of the homes and families of those in attendance thereon.

 4. That the work of home visitation be placed under the charge of a medical assistant appointed for the purpose.

First Annual Report of Inverness Sanatorium.

The first annual report of Inverness Sanatorium states that though the committee is aware that the institution has existed too short a time to enable it to speak very definitely as to the results, it feels entitled to state that a good beginning has been made. The general tone and discipline of the sanatorium have been excellent, and the committee expresses its consciousness of the services rendered during the first year by Miss Sturgess, the matron. Dr. John Macdonald, medical officer of health of Inverness-shire, reports that between November, 1907, and November, 1908, 42 patients were admitted. The total percentage in which the disease was arrested was 28.5 and improvement 47.2, giving a percentage of benefit in 75 7 cases. The receipts on building accounts amount to £3355 and there was a balance in hand of £309. The proceeds of the Beaufort bazaar, amounting to £2987, have been invested in the debenture stock of railways—£1000 at 3½ per cent. and the balance at 4 per cent.

Nov. 2nd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal Co lege of Physicians of Ireland.

AT the annual meeting of the Royal College of Physicians of Ireland the following officers were elected for the coming year:—President: Dr. Andrew J. Horne. Vice-President: Dr. E. MacDowel Cosgrave. Censors: Dr. MacDowel Cosgrave, Dr. E. Hastings Tweedy, Dr. J. B. Coleman, C.M.G., and Sir W. J. Thompson. Representative on the General Medical Council: Sir John W. Moore. Representatives on the Committee of Management: Dr. Walter G. Smith, Sir John Moore, and Dr. James Craig. Treasurer: Dr. H. T. Bewley. Registrar: Dr. Craig. Librarian: Mr. R. G. J. Phelps. Dr. Walter G. Smith was elected King's Professor Phelps. of Materia Medica and Pharmacy in the School of Physic.

Ireland, and Dr. Henry Jellett, King's Professor of Midwifery in the same school.

Royal Academy of Medicine in Ircland.

At the annual general meeting of the Royal Academy of Medicine in Ireland, held in the Royal College of Surgeons on Oct. 8th, the following resolutions were adopted in

That the President and Fellows of the Royal Academy of Medicine in Ireland assembled at this the first annual general meeting held sine the lamented death of Professor Alec Fraser desire to place on record their sense of the great loss which the Academy has thereby sustained. The late Professor Fraser was President of the Section of Anatomy and Physiology during the sessions 1893-4 and 1894-5. He made his first important communication to the Academy in January, 1890, on "Operations on the Brain," and from that date until his death he was a constant contributor to the Section of Anatomy and Physiology. The President and Fellows take this opportunity of offering to Mrs. Fraser an expression of sincere sympathy with her in her bereavement.

That the Fellows of the Royal Academy of Medici e in Ireland at this their annual meeting do hereby convey to Mrs. Cunningham an expression of their respectful and sincere sympathy with her and the several members of her family on the occasion of the death of Professor Daniel John Cunningham, F.R.S., formerly a distinguished Fellow of the Academy, and one of the most ardent supporters of the Section of Anatomy and Physiology.

The meeting adopted a new rule to the effect that registered

The meeting adopted a new rule to the effect that registered medical practitioners temporarily resident in Dublin may be elected Associates of the Academy for the period of one

Apotheoaries' Hall: Inauguration of a New "Medical and Soientifio Society.

The inaugural meeting of the Medical and Scientific Society of the Apothecaries' Hall was held on the evening of Oct. 28th, when many leading members of the medical pro-fession accepted the invitation to attend. The progressive aims of the society were shown alike in the choice of lecturer to deliver the opening address (Professor Mettam, Principal of the Royal College of Veterinary Surgeons, Ireland) and the subject on which the lecturer spoke-viz., "Diseases of Animal Communicable to Man." The sections of the theme specially dealt with were tuberculosis, glanders, rabies, anthrax, foot and mouth disease, vaccinia, and actinomycosis. Psittacosis was also referred to, and the microscopic manifestations and general history of ringworm and trichinosis. In discussing tuberculosis Professor Mettam dwelt on the variable degrees of infecting power and virulence displayed by different tubercle bacilli, and stated that he doubted the possibility of distinguishing a human type and a bovine type, adding the important statement that "it appears that the more virulent an organism is the greater the probability that it comes from a bovine source." He expressed his belief, too, that the tuberculosis of birds (the common fowl, pheasant, turkey, and so on) will in a time not remote be recognised as the result of a cause which is "only a variety of a common stock."

Officers of Health, Medical and Veterinary.

The October meeting of the Council of the Irish Medical Association brought into strong relief some of the difficulties and incongruities connected with the administration of sanitary and hygienic law in Ireland and the anomalous position of the medical officers of health, each of whom is in charge of, and entirely responsible for, the sanitary condition of his district. For an annual donation of £15 all insanitary dwellings, adulterated food, and defective drains, as well as all other visible and tangible items which are believed—or are defined by law—to be injurious to public health, must be inspected and reported on; all cases of infectious diseases, in the districts subject to the provisions of the Notification Act, must be notified by that responsible officer, who must also see to the removal of the patient who is the subject of infection, and take care that proper disinfection of the premises follows. His time is necessarily seriously encroached on by these public duties, to which all conditions and exigencies of private practice must yield, and recent legislation has all tended to increase the weight of this professional burden, while it subjects him still further to friction with boards of guardians and district councils, and to private—and very positive—ill-will in such cases as the necessarily numerous ones of suspected incipient tuberculosis. It also, in the form of the Dairies and Cowsheds Order, obliges him to inspect and report on the sanitary conditions of the dairies, cowsheds, and milkshops, a duty which necessarily includes inspection of the dairy cows and their byres. A recent step has been taken by our Irish

legislators which brings into greater prominence the unfairness of all legal provision in every matter connected In order to make the bovine with medical finance. sanitation still more secure a veterinary inspector has been appointed in certain districts for the purpose of looking after the sanitary conditions of the cattle. His duties in this department cannot be said to clash with those of his routine professional work; they rather tend to increase his professional practice than to retard the performance of its duties; and they are less than likely to lead to the frictional attitude of public bodies which the medical officer is so prone to encounter. Yet a recent veterinary appointment of this class is dowered with £75 per annum five times the amount paid to the medical inspector for the carrying out of duties often decidedly incongruous with his normal professional ones, while still oftener damaging to the efficient attention required in his daily medical practice and his popularity as a medical visitant and adviser. Surely this is a state of things which calls for concerted action on the part of medical men and for the modifying legislation which should be made to follow.

The Royal University of Ireland.

The last degree day of the Royal University, which terminated its existence on Oct. 31st, took place on Oct. 29th, and surpassed any former occasion for extreme rowdiness. Certain of the students took complete possession of the great hall in which the ceremony took place, and from one of the galleries they suspended a white flag, bearing in black letters R.U.I., surmounted with a representation of a skull and crossbones, and underneath R.I.P. They flung squibs and bags of flour and rice among the audience, rendering the situation one of great discomfort, and, indeed, of imminent peril, for the company. The Vice-Chancellor, Sir Christopher Nixon, occupied the chair, but not one word of his speech was heard owing to the yelling, and while he was endeavouring to get a hearing a strip of calico was drawn across the centre of the hall having on it inscribed "Irish Compulsory" (referring to the demands of the Gaelic League and the Sein Feiners). The Senate conferred honorary degrees on all those of its own members who had not had already received such decorations. The number was actually 19, of whom 16 were graduates of some university, and of those honoured in this way the following are members of the medical profession: - Degree of LL.D.: Sir Francis Cruise, Dr. John Walton Browne, Dr. Richard Whytock Leslie, Dr. John Campbell, and Dr. W. R. Huggard; degree of D.Sc.: Professor Alexander Macalister. Towards the close of the proceedings a sensation was caused by the introduction of a hydrant by which a copious torrent of water was turned on. Then parts of the hose-pipe were cut and someone sent a piece whirling through the air towards the platform where the Senate was seated. After the termination of the proceedings the students congregated outside the University buildings, and threw rice and squibs at the police who, however, prevented them from re-entering the building and finally scattered them. Thus passeth the Royal University after a life of 30 years. The old Queen's University also lasted about 30 years. Absit omen!

Insanitary Areas in Belfast.

A scheme for dealing with insanitary areas in Belfast is under consideration. It will deal both with insanitary houses and areas, and will provide air spaces through the city, will widen streets, and will get rid of culs-de-sac. It was also proposed to do away with double-tenancy houses, in which people were living in very unsatisfactory hygienic conditions. The city surveyor and a committee are at present working on the matter. The medical report, presented at the monthly meeting of the city council on Nov. 1st, showed that between Sept. 19th and Oct. 23rd the death-rate from all causes was 13.9 per 1000, from chest affections 3.6, and 1.9 from zymotic diseases. The cases of infectious diseases notified were 123, as against 82 in the preceding month, the increase being in typhoid fever, scarlet fever, simple continued fever (really typhoid), and puerperal fever. The increase in typhoid fever, being 62.50 per cent., is the most serious, and of the 16 cases notified 5 were ascertained to be directly attributable to milk supplied from a dairy outside the city boundary; and the medical officer of health reports that it is very probable that some of the other cases may have been indirectly due to milk imported into the city.

Nov. 2nd.

PARIS. (FROM OUR OWN CORRESPONDENT.)

Rapid Radiography.

AT a meeting of the Paris Société de Médecine held on Oct. 8th M. Desternes showed a series of radiographic pictures taken with an exposure of less than 30 seconds. The advantages of the new process are a diminution of the fatigue and discomfort experienced by the patient, as well as greater steadiness of the region examined. For these reasons the pictures not only gain in sharpness and precision but views of regions affected by the respiratory movements can now be obtained of a more satisfactory description than has hitherto been possible.

Treatment Before and After Abdominal Operations.

At the twenty-second French Congress of Surgery held in Paris from Oct. 4th to 9th several communications were received relative to the treatment preceding and following operations on the abdomen. M. Pozzi, recognising that dis-infection by means of hot air was not practicable for all surgeons since it required expensive apparatus, said that he accomplished this kind of disinfection by scraping with a sharp spoon followed by the actual cautery, but not by the thermo-cautery. M. Princeteau, speaking especially of abdominal surgery in the child, said that he was opposed to purgation before an operation, as it might have an injurious effect on the mucous membrane. M. Chavannaz having compared the advantages and the disadvantages arising when females upon whom laparotomy had been performed left their beds at an early stage, expressed himself as unfavourable to the practice. M. Delangre and M. Lenormant said that they had met with three cases of acute duodenal occlusion after operations, the cause probably being gastric lavage and the position in which the patient lay. M. Bérard and M. Walther called attention to the advantage of disinfecting the skin by tincture of iodine. M. Pauchet urged on the congress the necessity of hospital treatment for all cases of operation, the ntility of vegetarian diet, the advantages of non-fermentable food, the importance of attention to the state of the mouth, and the good effects of systematic respiratory exercise. M. Paul Delbet insisted on the advantages of performing operations in a special institution rather than in the patients' own homes. M. Sorel said that in his opinion the progress of surgery was in inverse proportion to the amount of manipulations and apparatus and to the number of assistants; he was also in favour of using tincture of iodine as a disinfectant. M. Cazin and M. de Fourmestraux said that patients ought not to leave their beds at an early stage.

Treatment of Detachment of the Soalp.

M. Pierre Delbet has had under his care two females suffering from detachment of the scalp, in whom cicatrisation of the extensive wound had not taken place after a year and serious complications had ensued. In an account of these cases which he gave at a meeting of the Academy of Medicine on Oct. 12th he said that this injury when sustained during industrial employment was almost confined to females whose long hair was caught in a carding machine or something of a similar description. The scalp was then stripped from the skull along a line drawn on a level with the eyebrows and the external ear, passing below the external occipital protuberance. The injury was not extremely painful. As the extensive denudation could only be repaired by skin-grafting on Thiersch's principle, M. Delbet adopted this method and the grafts adhered, although many of them were implanted directly on the diploe. To be successful these grafts must be broad and must overlap at the edges. With these two patients the cicatrisation obtained by M. Delbet in this way was quite substantial, the period elapsed since the completion of repair having been 16 months in one case and two years in the other.

Albumin in Tuberculous Sputum.

At a meeting of the Société Médicale des Hôpitaux, held on Oct. 15th, M. Roger said that examination of the sputum for albumin was as simple, easy, and important as examination of the urine for albumin. The sputum was rubbed up with water, some drops of acetic acid were added, the whole was thrown on a filter, and the ordinary tests for albumin

were applied to the filtrate. If heat was employed it was necessary to add a little common salt, as without this precaution the albumin did not coagulate. Observations to the number of 151, collected with the assistance of M. Lévy-Valensi, made it extremely probable that the sputum of tuberculous patients always contained albumin. When there was no reaction for albumin tuberculosis was, as a rule, not present, and although the converse might not be true the practical importance of the symptom was evident.

Nov. 1st.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

Operative Results of Nephrectomy.

Dr. H. Wildbolz, lecturer (privat-docent) at the University of Berne on diseases of the urinary tract, has just published his results of a series of 100 nephrectomies performed by him during the last eight years. Nephrectomy used to be considered a most dangerous operation. In 1891 Professor Albert of Vienna wrote in his well-known text-book on kidney merely as an operation to avoid. Yet one finds surgeons ready to undertake it." The statistics of Gross in 1885 gave 44.6 per cent. of fatal cases; this justifies Professor Albert's opinion. In 1902 Kuster described a mortality of only 25 per cent. in 1521 cases operated on. Out of 100 cases Dr. Wildbolz only lost four, 90 of these operations being performed for tuberculous kidney. The favourable result was greatly due to the fact that medical practitioners sent him the patients in early stages of this dire disease. One patient died from myocarditis; another from uramia owing to extensive degeneration of the other kidney; the third case suddenly died from a clot in the pulmonary artery which was detached from a thrombosed renal vein on the tenth day after a successful operation; the fourth died from paralytic ileus. Ether narcosis was generally employed. The exact examination of the bladder and especially of the secretion of each kidney separately, when possible, is of the most vital diagnostic, prognostic, and therapeutic importance.

Mortality from Certain Infective Diseases in Switzerland.

The Swiss Federal Statistic Department has issued a report on mortality from whooping-cough, measles, scarlet fever, and diphtheria in children under 15 years of age. The mortality is decreasing from year to year. From 38 4 per 10,000 from 1876 to 1880 it has receded to 20 per 10,000 from 1901-05. A further reduction to 18·3 and 16·7 per 10,000 has ensued in 1906 and 1907.

Treatment of Epilepsy by Reduction of Chloride of Sodium in the Dietary.

Dr. A. Ulrich, senior physician to the Epileptic Home in Zürich, has continued with satisfactory results his treatment of epilepsy by reduction of salt in the dietary.\(^1\) Even in obstinate and very chronic cases the epileptic attacks diminished by one-half, in some cases by 79, 82, and even 97 per cent. The patients all felt better in themselves. Dr. Ulrich has now decided to make use of this dietary for the majority of his 213 patients. Dr. Hans von Wyss's experiments on the action of bromide salts on the human organism go to prove that they act through elimination of the chloride of sodium. Dr. Ulrich's further experiments prove that an increase of chloride in the dietary is often followed by an increase of epileptic attacks. This explains the rationale of this dietetic treatment.

Zürich, Nov. 1st.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Unveiling of a Statue of Professor Albert.

In memory of the famous surgeon, Professor Albert, who from 1881 till 1900 was the director of the first surgical clinic of the Vienna General Hospital, a statue was a few days ago unveiled in the Aula (or hall of honour) of the University of Vienna. Contributions from his numerous pupils, friends, and grateful patients enabled the committee to

¹ See The Lancer, Sept. 12th, 1908, p. 846.

have a life-sized monument erected, showing Professor Albert during an operation demonstrating to students a new fact. The ceremony was attended by a large number of personal friends, and of course the official representatives of medical bodies were present as well. Professor Hochenegg, one of Professor Albert's earliest and most prominent pupils, now himself director of the surgical clinic, delivered the principal address, in which he enumerated the numerous merits of his former master. A short history of his life was also received with great interest. Professor Albert was the first surgeon to make a transplantation and substitution of nerve on the living human body; his methods of arthrodesis and of suturing tendons are now generally used. He was also the first in Austria to use Lister's method of antisepsis which he learned from Lister himself in England. The students were greatly impressed by his convincing and instructive method of teaching. It was his custom to introduce clinical methods of instruction at an early stage of the curriculum and he used to say that a general practitioner in a country place must know enough surgery to be his own consultant. A touching expression of the esteem in which he was held by his friends consisted in a wreath bearing the words: "Magno medico, maximo magistro, grato animo," which was deposited at the feet of the statue.

Public Appointments and Private Practice.

The municipal board of health has recently invited applications for several medical appointments in a new "central Kinderheim" (a central orphan asylum) to be built in a short time, but with the clear understanding that the positions in question would occupy the entire time of the incumbent, so that he could not engage in private practice. This is an almost new departure in Austria, as at present there are extremely few-hardly more than two or three-medical institutions in the whole country conducted on this principle. The only drawback is that the board has not stated what salary would be paid to these officers. As it is well known that the remuneration for public appointments is not sufficient, at least on its present scale, to satisfy a medical man of good qualifications, it must be assumed that the sum would be at least 10,000 kronen (about £400) a year. Much comment has been aroused by this innovation on the part of the hitherto not very pro-medical municipality of Vienna. Medical circles are unanimous in their approval because it generally happens that appointments of this nature are only sought after for the purpose of obtaining a title such as Primararzt or Director, which enables its holder to charge higher fees, since the public are so partial to medical men who possess distinctive appellations of this kind. The holders of appointments, therefore, interfere seriously with the earning possibilities of the men who have not been lucky enough to obtain one of the ill-paid permanent appointments. On the other hand, amongst the general public it is considered as only fair that an appointment should secure the entire services of a competent man. If this becomes the rule satisfaction would be general.

Dissatisfaction amongst Medical Students.

Several grievances of a general nature have recently caused some irritation amongst the students of medicine both of the preliminary and the advanced years of the curriculum. By decree of the Senate, every student must now pay a small sum, amounting to a few shillings per year, for the use of the library of the University. Even more unpopular, however, was a charge of 10 kronen (about &).
made for the so-called gynæcological "internate," or term of practical instruction at the bedside, which was intro-duced this winter term. This latter charge was made for only a fortnight's accommodation in the hospital and was felt to be an unnecessary burden. Meetings were held and resolutions were forwarded to the Dean of the Faculty asking that at least the last-mentioned payment might be discontinued. The attitude of the students was so unanimous, and the policy of the managing board was so judicious, that the charge was done away with. A much more important incident, and one more illustrative of the narrow views held by some bureaucratic individuals, has occurred in connexion with the Institute for Physical Teaching. This institute is capable of holding about 120 students and was too small for its purpose even 20 years ago. Petitions for the erection of a new building have been made yearly for a long time and have been as constantly

the institute, and Professor Lecher, who lectures on Physical Principles, had to ask them to abstain from coming to the classes as their presence involved a danger in case of fire, and certainly was detrimental to their own health on account of the overcrowding. The students responded to his request, but demanded a suspension of lectures, so that either all or none might have the benefit of his teaching. Professor Lecher readily complied with their wish, and made the fact known to the Ministry of Education that instruction in this important branch of general education was made impossible by lack of proper teaching accommodation. He added that the students would continue to strike unless they had a definite promise that things would be reformed in a radical way within a reasonable time. Up to now, however, he has not received any satisfactory reply, so the students declared at a repetition of the attempt to hold the class that they would render all such teaching impossible by a "noisy strike." In certain instances this is the only way here of convincing the superior authorities that matters are not going well.

Nov. 1st.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

The Prevalence of Plague.

THE plague returns for the week ending Sept. 25th show the following deaths. Bombay Presidency reported 938, Madras 155, Bengal 43, the United Provinces 418, the Punjab 181, Burma 18, the Central Provinces 963, Mysore 243, Rajputana 402, and Central India 219. The mortality in the Central Provinces is mainly in Nagpur city, where 656 deaths occurred during the week.

The Health of Bengal.

Indian sanitation is generally somewhat primitive, and even the most advanced places are behind the times according to Western ideas. But it seems to be a fact in Bengal, at any rate, that though progress in urban sanitation is slow it is quite perceptible. Excluding the mortality from plague, the figures for the last seven years show that the public health in the towns has always been better than in the rural areas, and the difference in favour of the urban death-rate has been increasingly marked during the last four years. The year 1908 was unhealthy, especially in the early months, the cholera mortality, 268,908, being the highest on record. On the other hand, to the destruction of mosquito larvæ during the abnormally dry months preceding the monsoon is ascribed the decreased severity of fever. At the same time the Sanitary Commissioner does not appear to hold to the mosquito theory in its entirety. The districts most affected with "fever" can none of them be described as water-logged, and the Sanitary Commissioner apprehends that "the deficiency in the rainfall necessary to scour away the accumulated surface impurities affected pre-judicially the health of these tracts," which is another way of saying that the prevalence of fever can be attributed to other causes than the anopheles mosquito. Plague was much less prevalent than in previous years, but it is reported that popular prejudice against scientific preventive measures is as stubborn as ever. Evacuation of infected dwellings is practically the only preventive measure at all in favour. Rat destruction was carried on by organised gangs in most of the districts of Behar, though the use of poison for this purpose was objected to by the people, particularly in Shahabad. The expenditure by municipalities upon sanitary improvements increases slowly, but it is far below what it should be, and there is a tendency, sternly deprecated by the Lieutenant-Governor, to look to Government for substantial grants for sanitary projects. problem is generally one of funds, and until more ample means are available the progress of sanitation in Indian towns must necessarily be slow.

Malarial Fevers in Bengal.

occurred in connexion with the Institute for Physical Teaching. This institute is capable of holding about 120 students and was too small for its purpose even 20 years ago. Petitions for the erection of a new building have been made yearly for a long time and have been as constantly refused. There are now over 400 students attending making up of quinine in small packets for sale among the

people has now been concentrated in the jail for juveniles at Alipore, and 30 boys are employed in this work. In order to make the use of the drug more popular among the public in malarial districts it is being put up in tablet form. The necessary machinery has been procured and the manufacture of the tablets is proceeding. Special arrangements have been made to stock these in large quantities, as well as 10-grain pice-packets; and the Inspector-General of Prisons is confident of being able to meet any sudden demand when malaria appears in epidemic form. Over 4,000,000 picepackets were made up and despatched to various post-offices during the past year, and operations henceforward will be on a still larger scale.

Ambulance Work in India.

It would be satisfactory to hear that a generous response was being made to the appeal for further support in behalf of the St. John Ambulance Association in Bombay. The association has long carried on a quiet but useful work in the town and its apparatus and skilled ambulance parties have been freely placed at the disposal of the general public on occasions when there is a more than ordinary chance of accidents occurring. Four ambulances are now kept for general use, including two new wheeled ambulances at the head police office and Colaba police station respectively, the former having attached to it a trained squad of attendants. It is obvious that this service cannot be considered adequate for a city of the size of Bombay, and the association is endeavouring to place its work on a broader It deserves a little cooperation both from the municipality, to whom it is appealing for funds, and from the public whose assistance it invites both by personal service in the trained corps and by subscriptions.

A centre of the St. John Ambulance Association for the Southern Punjab has just started work at Kasauli. It has been organised by Lieutenant-Colonel O. R. A. Julian, C.M.G., who is a specialist on ambulance matters, as he has acted as adjutant of the Royal Army Medical Corps Training School at Aldershot. The committee of the new centre is under the presidency of Major-General J. D. Pilcher, C.B., commanding the Sirhind Brigade. The vice-presidents are Colonel A. M. Crofts, C.I.E., P.M.O., Sirhind Brigade; Mr. R. Sykes, Deputy Commissioner; and Colonel H. Grey, C.S.I. The chairman is the Rev. A. H. Hildesley, M.A., principal of the Lawrence Military Asylum, who has long taken an interest in the work of the association, and has organised numerous ambulance classes for the boys under his control. Colonel D. Semple, R.A.M.C., the director of the Central Research Institute, is the vice-chairman, and the members include the Commandant of Kasauli and the Cantonment magistrates of Kasauli and Ambala and many influential officers and civilians. Lieutenant-Colonel Julian acts as honorary secretary himself. With such a strong committee and energetic and experienced secretary there can be little doubt that the centre has a long career of usefulness before it. Sept. 30th.

Medical News.

University of Cambridge.—The following appointments have been made: - Professor of Zoology and Comparative Anatomy: J. S. Gardiner, M.A., Caius College. Quick Professor of Biology: G. H. F. Nuttall, Sc.D., reelected for three years. Demonstrator of Experimental Psychology: E. O. Lewis, B.A., St. John's College.—The following degrees were conferred on Oct. 28th :-

M.D.-G. Cowan, King's; H.J. D. Birkett, Trinity; and H. L. Dixon, Non-collegiate.

M.B.—E. G. Wheat, Christ's.

B.C.—R. W. S. Walker, Trinity.

The following examiners have been appointed: -First M.B.: C. T. R. Wilson, in physics; J. S. Gardiner, in biology; and R. H. Adie, in chemistry. Second M.B.: Dr. Duckworth and Mr. Addison, in anatomy; Dr. Anderson and Professor Halliburton, in physiology. Third M.B., Part I., C. R. Marshall and W. E. Dixon, in pharmacology; Professor Woodhead and Dr. Leith, in pathology.

FOREIGN UNIVERSITY INTELLIGENCE. Amsterdam: Dr. J. J. Houwink has been appointed Professor of Dermatology.—Breslau: Dr. Bruno Heymann, privatdocent of Hygiene, has been granted the title of Professor .-

-Freiburg: Dr. Hurenknecht, privat-docent of Odontology, has been granted the title of Extraordinary Professor. Gratz: Dr. Robert Hesse has been recognised as privatdocent of Ophthalmology.—Halle: Dr. Alexander Stieda, privat-docent of Surgery, has been granted the title of Professor.—Kharkoff: Dr. Krimberg of Moscow has been appointed Extraordinary Professor of Medical Chemistry.—Kiel: Dr. Franz, Professor of Midwifery and Gynæcology in the University of Jena, has been offered the chair of the late Professor Pfannenstiel. - Leyden: Dr. J. Boeke has been appointed Professor of Anatomy in succession to Dr. Langelaan, resigned.—Moscow: Dr. N. S. Kishkin, Extraordinary Professor of Medical Diagnosis, has been promoted to an Ordinary Professorship. - Naples: Dr. Pietro Michele Barberis and Dr. Luciano Rossi have been recognised as privat-docenten of Medical Chemistry.—Prague (German University):
Dr. Alexander Scheib has been recognised as privat-docent of Midwifery and Gynæcology, Dr. Leopold Moll as privatdocent of Children's Diseases, and Dr. Eduard Weil as privatdocent of Hygiene.—Sienna: Dr. Cesare Maroco of Rome has been recognised as privat-docent of Midwifery and Gynæcology.

ROYAL INSTITUTION. — The eighty-fourth Christmas Course of Juvenile Lectures, founded at the Royal Institution in 1826 by Michael Faraday, will be delivered this year by Mr. William Duddell, F.R.S., his subject being "Modern Electricity." The course, which will be experimentally illustrated, commences on Tuesday, Dec. 28th, at 3 o'clock, and will be continued on Dec. 30th, 1909, and Jan. 1st, 4th, 6th, and 8th, 1910.

GLASGOW UNIVERSITY CLUB (MANCHESTER AND DISTRICT). -The annual meeting of the club, followed by the fourth annual dinner, will be held at the Queen's Hotel, Manchester, on Tuesday, Nov. 16th, at 6 P.M. prompt. Sir Henry Craik, M.P., Sir Hector Cameron, and Dr. G. S. Middleton have signified their intention to be present. The honorary secretary of the club is Dr. D. Richmond, 176, Drake-street. Rochdale, to whom notice should be sent by those who wish to attend the dinner.

Health of the Post Office Staff.—The Postmaster-General (the Right Hon. Sydney Buxton, M.P.), in his report for the year ended March 31st, 1909, just presented to Parliament, states that the health of the staff during the year was, on the whole, satisfactory. There was a recurrence of influenza during certain periods of the year, and 23 deaths and three retirements were directly attributable to this cause. 58 deaths and 111 retirements were due to diseases of tuberculous origin. Inquiries were instituted into the nature and prevalence of the disorder known as "telegraphists' cramp," a nervous affection to which telegraphists using the Morse telegraph key are liable. result of the inquiries was not altogether conclusive, as difficulty was experienced in many cases in distinguishing between telegraphists' cramp and other affections which interfere with an operator's power of manipulation. It has been ordered that telegraphists' cramp be added to the Third Schedule of the Workmen's Compensatian Act as a disease in respect of which compensation should be payable, and that, so far as Post Office servants are concerned, the medical officers of the Post Office shall be substituted for the certified surgeons appointed under the Factory and Workshop Act, 1901, as the persons by whom in the first instance the presence of the disease should be certified. As a result of representations made by the Postmen's Federation the Postmaster-General deputed Dr. J. Sinclair, second medical officer to the Post Office, to conduct an inquiry jointly with Mr. D'Arcy Power, nominated by the Federation, into the physical effect of stair-climbing and cycling upon postmen. As regards stair-climbing, the result of the inquiry was to show that the physical strain produced was not of an abnormal character and was not productive of injury to health. Steps have, however, been taken to obtain permission for postmen to make use of the lifts in large blocks of flats, and the amount of stairclimbing has thereby been reduced to a minimum. As regards cycling duties, Dr. Sinclair and Mr. Power made a number of recommendations, most of which have already been carried out. Definite limitations have been imposed on the weight to be carried on a bicycle or tricycle, the daily distance to be traversed and the rate of speed to be maintained, and a searching medical examination has been instituted in order to

prevent unsuitable persons from being employed on cycling duty. Various minor regulations have also been laid down. The Postmaster-General adds: "I feel greatly indebted to the two medical gentlemen in question for having enabled me to place these arduous portions of a postman's daily duty on a satisfactory footing."

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—
The annual meeting of Fellows and Members will be held at the College in Lincoln's Inn-fields on Thursday, Nov. 18th, at 3 o'clock, when the annual report of the Council will be laid before the meeting. Fellows and Members can obtain copies of the report on application to the secretary, and they can, if they wish, have their names placed on the list of those to whom the report is sent annually. Any motion intended to be brought forward at the meeting must be signed by the mover or by the mover and other Fellows and Members, and must be received by the secretary not later than Nov. 8th. A printed copy of the agenda will be issued to any Fellow or Member who may apply for one to the secretary on or after Nov. 15th.

THE WELSH COLLIERY EXPLOSION: BRAVERY OF A MEDICAL MAN.—Early on Friday morning, Oct. 29th, an explosion occurred at the Darran Colliery, about two miles from Bargoed, South Wales, where about 200 men are usually employed, but it happened that at the time of the disaster there were only 45 men at work. Rescue parties were formed, but they suffered severely from the effects of the after-damp, and several brave men lost their lives and others were overcome and prostrated. One of the first to make a heroic attempt at rescue was Dr. W. W. Turner, a medical officer, but brave though his efforts were, he was eventually overcome and was given up for dead, and although repeated efforts were made to rescue both him and others, numbers of rescuers were themselves overcome. After several hours, however, Dr. Turner was reached and found to be unconscious and suffering from injuries, but after careful attention he revived, and, we are glad to say, is progressing favourably.

CHOLERA AND TYPHOID FEVER IN RUSSIA .-Mr. Arthur W. Woodhouse, British Consul at St. Petersburg, in his annual report just received at the Foreign Office. writes: "In the whole of Russia from the outbreak of cholera in July, 1908, till the end of the year there were altogether 30,157 cases and 14,253 deaths. In the city of St. Petersburg, between Sept. 6th and Dec. 31st, there were 8763 cases and 3553 deaths. The figures in three other extensive regions of Russia for this period were as follows: Don Cossack territory, 2986 cases, 1428 deaths; Kuban territory, 1834 cases, 1025 deaths; Ekaterinoslav province, 1143 cases, 554 deaths. The last epidemic of Asiatic cholera occurred in St. Petersburg during the period 1892-95, both years inclusive, and the cases for those four years numbered 10,434. Since the 'thirties' of the last century there have been seven outbreaks of cholera here and no less than 25 years in which the epidemic has prevailed. It will thus be seen that St. Petersburg is a very hotbed of cholera, which is owing to its extremely insanitary condition. Unfortunately, since the last visitation in 1895 nothing serious has been undertaken to prevent the recurrence of the scourge, whereas in Moscow work has been slowly but continually going on in draining and improving the water-The natural result is seen in the great difference between the towns as regards the average annual mortality from typhoid. During the period 1892-1905 the average number of deaths from typhoid in St. Petersburg were between 650 and 1000, and in Moscow only 140 to 240. The following figures show the number of typhoid cases per 10,000 inhabitants in six of the principal towns of Russia and in St. Petersburg province: St. Petersburg, 164 7; St. Petersburg province, 33 9; Odessa, 55 1; Nikolaiev, 32 6; Moscow, 20 6; Sebastopol, 19.5; Warsaw, 13.2. St. Petersburg, compared with the large cities of Europe, and even of Russia, has the highest rate of mortality in general and the highest death-rate from infectious diesases. The principal cause of this, combined with the absence of modern drainage, is undoubtedly the highly defective condition of the water supply. A part of the town is still supplied with quite unfiltered water, and latest statistics show that this part is less affected by cholera and typhoid than the parts of the town in which filtered water is used. Recent analyses have proved that the filters

themselves are contaminated by the cholera vibrion, which has also been found in samples of water drawn from the intake of the supply in the river as well as at random from house-taps in various parts of the city."

BUTTER AT EXETER.—At Exeter on Oct. 23rd a butter dealer was fined £2 for selling butter containing 19 per cent. of water, being 3 per cent. above the authorised standard.

THE ROYAL HUMANE SOCIETY.—Mr. Hedley Hill, M.D. Durh., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed the honorary representative of the Royal Humane Society in Bristol. Dr. Hill received the Stanhope gold medal for the best rescue in 1887.

NATIONAL DENTAL HOSPITAL AND COLLEGE.— The annual dinner of the past and present students will be held at the Trocadéro Restaurant on Friday, Nov. 19th, at 6.30 for 7 P.M. Sir Thomas Barlow, K.C.V.O., will occupy the chair.

DEATH FROM ANTHRAX.—An inquest was held at Wilsden (West Riding) recently on the body of a woolwasher who was found to have died from anthrax caused by inhalation. The Bradford Observer, in its account of the proceedings, states that the manager of the works in which the deceased man was employed gave it as his opinion that the best treatment of the dangerous East Indian wool-which the man had been handling-was to wash it without first passing it through a machine for dust extraction. The procedure he adopted was recommended by the Bradford Chamber of Commerce, and he believed it to be the common practice of the trade. Mr. G. A. Taylor, inspector of factories, asked the witness whether he did not think the regulations intended a dust extractor to be used before washing, to which the manager answered in the negative. Dr. F. W. Eurich, bacteriologist to the Anthrax Investigation Board, who gave evidence of the cause of death which the jury accepted, said that no trustworthy method of sterilising the wool before washing had yet been found. The coroner at the close of the inquest told the jury that the manager of the works was willing to adopt any modification in his system which would tend to remove the danger from his workpeople.

THE NATIONAL ASSOCIATION FOR PROMOTING THE WELFARE OF THE FEEBLE-MINDED. -The recently published annual report of this association commences with an account of the formation of fresh centres of work in many new districts. During the past year three new affiliated homes were opened, one for 20 lads at Monkton Hall, Jarrow-on-Tyne; one for 12 girls in Kentish Town, London; and one for the education of mentally defective blind persons at St. Leonards-on-Sea. In Yorkshire two new centres for special medical aid have been secured, one at Bradford and one at Sheffield. New branches of the association have been opened at Brondesbury and Bromley. In 1908 the annual conference on After Care was held at Bristol, the subjects of discussion including permanent care for mental and moral defectives, defectives in workhouses. and the detection and treatment of the feeble-minded. This year's conference was held on Oct. 28th in the Association Hall, Young Men's Christian Association, Leicester. In the morning session Dr. Astley V. Clarke presided, and papers were read on "The Health of the Community as Affected by Feeble-mindedness," "Social Dangers of Feeble-mindedness" (by Dr. G. H. Savage), and "The Home Conditions of Families where there is Mental Deficiency in One or Both of the Parents" (by Dr. Allan Warner). After-care reports were presented, and a discussion was opened by Mr. C. J. Bond of the Leicester Infirmary. In the afternoon session Lady Frederick Brudenell-Bruce presided, and papers were read on "Homes and Colonies," "The Scope and were read on "Homes and Colonies," "The Scope and Functions of the Colony" (by Dr. R. L. Langdon-Down), "Compulsion rernus Voluntary Methods," and "The Feeble-minded in America." The Girls' Home, in King Richard'sroad, Leicester, was open to visitors to the conference. The total number of boys and girls now under after-care supervision has increased from 1037 last year to 1356. The centres now at work are Birmingham, Bristol, Leicester, Liverpool, London, Northampton, Nottingham, Oldham, Plymouth, Derby, and Berkshire. In reference to the recommendations of the Royal Commission on the Care and Control of the Feeble-minded, the report states that a short summary of

them has been drawn up by Sir William Chance in the form of a leaslet published by the association, and a fuller abstract, written by Mr. W. H. Dickinson, M.P., is now appearing. The offices of the association are at Denison House, 296, Vauxhall Bridge-road, London, S.W. An urgent appeal is made for increased financial support.

Another Veronal Fatality.—Mr. W. Schröder held an inquest at Marylebone on Nov. 2nd on the body of a barrister, a resident of Harley-street, who died last week in somewhat unusual circumstances. Mr. Bernard Pitts, who lived in the same house as the deceased man, gave evidence that he had suffered for some time from insomnia and that he sometimes took drugs for its relief. On the morning of his death he came into the witness's room in an agitated state and said that he had had a "seizure" during the night. He went back to bed, where he was visited by Dr. H. P. Hawkins, who had given him previous medical advice. Deceased told Dr. Hawkins that he had taken 15 grains of veronal, a drug to which Mr. Pitts had said that the witness was very susceptible. Both medical witnesses agreed that death was due to veronal poisoning, and the coroner commented upon the frequency of such cases, saying that he thought restrictions should be placed on the sale of the drug. The chemist who supplied it said that he was sorry to say there were no such restrictions, and that its sale was increasing. In returning a verdict of "Death from misadventure" the jury recorded the opinion that the drug should only be sold on a physician's prescription.

NURSES AND MEDICAL INSPECTION OF SCHOOL CHILDREN. -Mr. A. G. R. Foulerton, medical officer of health and school medical officer in East Sussex, has presented to his education authority a memorandum on the supply of district nurses available for assistance with the medical inspection of school children. In the inspections which have taken place the necessary help has been supplied by the district nursing association affiliated with the county nursing association, by various associations not so affiliated, and by nurses provided by private individuals. Alternate proposals are outlined, but Mr. Foulerton is of opinion that the most equitable arrangement would be a modification of the scheme by which the associations providing for districts in which there are small schools only might be paid on the basis of 3s. 6d. per attendance at inspection. In the case of very large schools the sum paid per inspection might be somewhat less than the 3s. 6d. And the surplus, out of an annual grant not exceeding, say, £150, might be at the disposal of the school medical officer to provide for the attendance of a nurse from a distance when a nurse could not be obtained locally. It was estimated that the annual expenditure under this scheme would be something less than £150, but for this sum a very efficient scheme could be instituted. The education authority adopted the memorandum authorising the expenditure at the discretion of the medical inspection subcommittee. There are 175 schools and 24,657 scholars in the East Sussex education authority's area and the satisfactory attitude of parents generally towards the medical inspection of their children has been very marked.

CENTRAL MIDWIVES BOARD .- A special meeting of the Central Midwives Board was held at Caxton House, Westminster, on Oct. 28th, with Dr. F. H. Champneys in the chair, to consider what action should be taken as to the recommendations of the Midwives Act Committee. Board passed the following resolutions, which in its opinion any amendment of the Midwives Act, 1902, in the light of the recent report, is to provide for :-

Adequate and certain remuneration of medical practitioners called in, Adequate and certain remuneration of medical practitioners called in, under the Board's regulations, to assist midwives. More definite powers of "suspension" of midwives, whether by the local supervising authority or by the Central Midwives Board. Subvention from public funds of midwives who are unable to maintain themselves in sparsely populated and poor districts. Revision of the constitution of the Central Midwives Board so as to afford two representatives, to be chosen without restrictions, of the Midwives Institute. Systematic purging of the Midwives Roll. That the right of delegation of their powers under the Act by the local supervising authorities should be revoked.

The Board resolved to commit these resolutions to a committee with instructions to prepare a report thereon to be submitted to the Board.—An ordinary meeting of the Board was also held on the same date at the same place. A letter was received from the Lord Mayor of Manchester, forwarding

a copy of a resolution passed by the Manchester city council, suggesting that the Municipal Corporations Association should be represented on the Central Midwives Board. A letter was considered from Mr. G. A. Clarkson of Caterham, complaining of the conduct of a certified midwife. The Board decided that Mr. Clarkson should be informed that as the midwife was acting at the time of complaint as a nurse and not as a midwife the matter is not within the scope of the Board's jurisdiction. A letter was considered from the Monmouthshire Nursing Association petitioning the Board to establish an examination centre at Cardiff, or in the alternative to permit the written examination to be held at Newport. The Board decided that the Monmouthshire Nursing Association should be informed that the question is under consideration by the Board. The Board having considered the application of the midwife Ann Kirk, who had applied for the voluntary removal of her name from the roll on the ground of inability to comply with the rules, decided that the application should be accepted, and that the secretary should be directed to remove her name from the roll and to cancel her certificate.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Parliamentary Session.

THE Parliamentary session will still last for several weeks. After passing the Finance Bill the House of Commons will take a holiday of a fortnight. The interest in the Budget proposals will then be transferred to the House of Lords. According to present arrangements, the debate on the second reading there will not begin until Monday, Nov. 22nd. Should the Peers refuse to give their assent to the measure. a contingency which Parliamentary opinion now regards as probable, a general election is inevitable. However, the appeal to the constituencies cannot well be made until after Christmas. The intervening time will be devoted to strenuous political propaganda in the country by all parties. Everyone engaged at Westminster has felt the strain of the prolonged Parliamentary deliberations.

The Housing and Town Planning Bill.

At the instance of the President of the Local Government Board the House of Commons has accepted a number of the amendments made by the House of Lords in the Housing and Town Planning Bill. Those which the Commons have declined to accept are those which Mr. BURNS considered to have a highly prejudicial effect on the working of the measure. For instance, the right honourable gentleman strongly insisted on the need for the prohibition of the construction of backto-back dwellings. The Lords inserted a provision allowing them under certain conditions. Mr. Burns, however, denounced them as insanitary and the nurseries of tuberculosis. On his motion, the Commons disagreed with the Lords' amendment on this point.

The debate on the Lords' amendments occupied a prolonged sitting of the House. It was not until about 2 o'clock on Tuesday morning that the changes which had been made in the House of Lords in the clause dealing with the appointment of county medical officers of health came up for review. It will be remembered that the Lords struck out the subsection that the Local Government Board might by order prescribe the duties of medical officers of health appointed by a county council under Section 17 of the Local Government Act, 1888, whether before or after the passing of the Bill. The President of the Local Government Board did not advise the House to insist on the phraseology of the subsection. He moved to insert another one on somewhat modified lines. It was to the effect that the duties of a medical officer of health for a county should be such general duties as might be prescribed by the Local Government Board and such other duties as might be assigned to him by the county council. This subsection was carried by 77 votes to 25. By 75 votes to 23 the House disagreed with the Lords' amendment which struck out the subsection which set out that a medical officer of health of a county should be removeable by the county council, with the consent of the Local Government Board and not otherwise. The House of Lords will thus have an opportunity of reconsidering their decisions, by which two important provisions of the clause dealing with county medical officers of health were excised.

Poor-law in Scotland.

The report of the Royal Commission on the Poor-law with regard to Scotland has just been issued as a Parliamentary Blue-book.

HOUSE OF COMMONS.

THURSDAY, OCT. 28TH.

Enteric Germ Carriers in the Army.

Captain CLIVE asked the Secretary of State for War whether the supposed enteric germ-carriers were still being detained in military hospitals and subjected to experimental medical treatment, and when he proposed to publish a further report on the success, or want of success, of this treatment.—Mr. HALDANE replied: The Army Council has

decided that germ-carriers shall be treated for three months in hospital on arrival in England, and if not cured at the end of that time will be given the option of remaining in hospital for further treatment. If they decline further treatment they will be discharged from the service. Consequent on this decision the men now at Netley will be discharged from the service if they decline further treatment. The second report on the carriers will shortly be published.

Sanitation in India.

Sanitation in India.

Dr. Rutherford asked the Under Secretary of State for India whether, in view of the Viceroy's statement on Oct. 12th at Simia that the deaths from fever in India during the last ten years averaged nearly 4,500,000, and that last year the deaths were 1,000,000 over the average, and the increase was believed to be due to malaria, he could say how much money was allocated by the Government of India in 1°93 and 1908 to sanitation.—The Master of Elibark answered: The expenditure on sanitation is not recorded under one head in the accounts, as officers of various departments are engaged in work intended to improve the health of the people. I have therefore grouped together as representing expenditure of this nature the outlay shown in the Government accounts under the head "Medical," the outlay shown in the same accounts under the head "Civil Works." for hospitals, dispensaries, drainage, waterworks, and similar objects, and that shown in the accounts of municipalities and other local bodies under the heads "Medical," "Conservancy," "Water-supply," and "Public Health and Convenience." The total expenditure under all these heads amounted to £29,5000 in 1897-93 and £4,455,000 in 1897-98. I may add that a special permanent grant of £200,000 a year was made in 1908-09 by the Government of India to provincial governments to be used for additional expenditure on sanitary purposes.

Mr. Refs also asked the honourable gentleman whether he had any official information showing that the diminution of deaths from malaria necessarily followed upon improved sanitation, or whether it was still doubtful if improved sanitation materially lessened mortality from malaria; and whether the Secretary of State had any figures in relation to those matters which he could lay before the House.—The Master of Elibark replied; The Secretary of State had any figures in relation to those matters which he could lay before the House.—The Master of Elibark replied; The Secretary of State sees no reason to doubt the conclusion of

and other circumstances

Cleansing of Persons Act.

Sir WILLIAM COLLINS asked the President of the Local Government Board how many local authorities in the United Kingdom, exclusive of London, and in the County of London, respectively, had taken action under the Cleansing of Persons Act; whether any representations had recently reached him suggesting that more extensive use should be made of the powers given under this Act; and what action, if any, he proposed to take in the matter.—Mr. Burns wrote in reply: I have no jurisdiction under the Act referred to, and am not in possession of any complete information as to its administration. I have recently received a communication from the coroner to the City of London stating that a jury had added to their verdict a rider to the effect that in their opinion the time had arrived when the Act, instead of being merely adoptive, might with advantage to the public be made compulsory. I am not in a position at the present time to promise to introduce the legislation which would be necessary to give effect to this suggestion.

Monday, Nov. 1st. Cleansing of Persons Act.

MONDAY, Nov. 1st.

Cesspools in Croydon Rural District.

Mr. WILLIAM THORNE asked the President of the Local Government Board whether he could say what number of cesspools now existed in the Croydon rural district area; whether, as a result of the additional powers which had been conferred upon the Croydon Rural District Council, according to his statement in the House on July 27th, the number of cesspools had been reduced; and, if not, whether, in view of the seriousness of the existence of cesspools within water-supply areas, as was evidenced by the case of Gravesend in the report of Dr. Reece to the Board, he would say what action the Board would take in the matter.

Areas, as was evidenced by the case of Gravesend in the report of Dr. Recec to the Board, he would say what action the Board would take in the matter.

The honourable Member also had another question on the notice paper in which he asked the right honourable gentleman whether, in view of the seriousness of the menace to the public health of Groydon by the existence of cesspools in the Croydon rural district area, as stated in the reports of the medical officer of health for the borough and the borough engineer, he would request the Croydon Rural District Council to cause reports to be made to them by the medical officer of health, surveyor, or inspector of nuisances of the rural district on the question and the extent of the danger, so that the rural district on the question and the extent of the danger, so that the rural district on the question and the extent of the danger, so that the rural district on the question and the extent of the danger, so that the rural district and that approximately 400 properties drain into cesspools. Of these 270 are outside the areas in respect of which there is an agreement between the councils of the borough and of the rural district for the reception of the sewage into the sewers of the corporation, and these houses are stated to be for the most part in rural portions of the district and at a considerable distance from an outfall sewer. In one parish, Woodmansterne, it is stated that there is urgent need for main drainage for about 90 houses near the boundary of Coulsdon which could be connected with the borough sewers, but this parish is outside the area from which the corporation receives the sewage, and I am informed that it refuses to extend these areas except upon terms which the district council is unable to accept. The rural district council, which has spent some £220,000 on works of sewerage and sewage disposal, has schemes already sanctioned or in course of preparation in respect of 70 of the properties in the parishes of Beddington, Coulsdon, and Sanderstead, parts

to in the second question of my honourable friend, and I have requested that this may be done.

The Care and Control of the Feeble-minded.

The Care and Control of the Feeble-minded.

Answering Mr. Henry Walker, Mr. Asquire the Prime Minister stated that the Government were alive to the importance of the recommendation of the Royal Commission on the Care and Control of the Feeble-minded in favour of taking out of the Poor-law all classes of mentally defective persons and of removing the feeble-minded from the workhouse. However, he would refer the honourable Member to the statement made by the Home Secretary on August 31st last in reply to a deputation. The Home Secretary on that occasion said that though there might be considerable difficulties in the way of legislation he was in agreement with the deputation as to the importance of the subject, and that he had ascertained that the Lord Chancellor was of the same opinion. And he added that he hoped to be able to make a practical effort next session in the direction of legislation.

Tunhoid Feers in Levis.

Typhoid Fever in Lewis.

Typhoid Fever in Lewis.

Mr. Weir asked the Lord Advocate whether, in view of the outbreak of typhoid fever in the townships of Borve and Lower Shader, island of Lewis, which continued from January to June last and was attributable by the medical officer to the insanitary condition of the townships, he would state whether arrangements had yet been arrived at under which sites might be secured in suitable positions, especially bearing in mind that Dr. Dittmar, the medical inspector for the Local Government Board for Scotland, in his report published in April, 1905, strongly condemned the condition of the Lewis townships.—Mr. Ure answered: In this case the outbreak is attributed, as to a probable cause, to the contamination from surface wells. Steady progress is being made by the district sanitary authority with such resources as they have at their disposal in improving the water-supply.

THESDAY, Nov. 2ND.

TUESDAY, Nov. 2nd.

The Use of Antitoxin in Public Hospitals.

The Use of Antitoxin in Public Hospitals.

Mr. Lupton asked the President of the Local Government Board whether he was aware that during the 13 years 1895-1907, at the hospitals of the Metropolitan Asylums Board, there were 63 249 cases of diphtheria treated with antitoxin; that 8917 of these cases died, being a case-fatality of 14 per cent.; that in the same hospitals, in the same period, there were 11,716 cases of diphtheria which were not treated with antitoxin; that 703 of these cases died, being a case-fatality of 6 per cent.; and that out of these 703 deaths 55 were considered hopeless on admission to hospital; and whether he would recommend legislation to stop the use of antitoxin in public hospitals.—Mr. Burns replied: I am aware of the figures to which my honourable friend refers and which appear to be derived from the annual report of the managers for 1907. No comparison, however, can properly be drawn between the death-rate of patients treated with antitoxin and that of patients not so treated. The latter class consists largely of persons suffering from a mild form of diphtheria, who were not ill enough to require the special treatment, and, indeed, the few deaths that occur in this class are almost entirely those of patients who were too ill, or who came into hospital at too late a stage in their illness, to derive any benefit from the injection of antitoxin. I could not undertake to adopt the suggestion in the last part of the question.

The Importation of Unsound Fat.

The Importation of Unsound Fat.

The Importation of Unsound Fat.

Mr. Morton asked the President of the Local Government Board whether quantities of fat obtained from diseased pigs and other unsound meats which had been condemned by the authorities in America were imported into the United Kingdom without being artificially coloured or otherwise denatured; whether, in the circumstances, this material could be supplied to makers of lard or other foods in this country; and, if so, what action he proposed to take to prevent this matter from being used in the preparation of food.—Mr. Burns answered: I understand that it is the case that consignments of food of the character indicated in the question are imported into the United Kingdom. The fat has not been denatured, although in conformity with the American regulations it is imported in containers with whitened ends on which the nature of the contents and words indicating that they are not for human consumption appear. There is, however, some risk of this material being obtained by lard refiners in this country, and the matter has received the attention of my department and of medical officers of health at the ports of importation. Under the regulations issued last year under the Public Health (Regulations as to Food) Act, 1907, consignments of the material in question have been detained at the port of entry until satisfactory guarantees have been given that they are to be used for industrial purposes (such, for instance, as soap making) only. as soap making) only.

Gaelic Warnings against Infection.

Mr. Wrir asked the Lord Advocate whether leaflets giving directions how to prevent and cope with the different infectious diseases, including consumption, had yet been printed in Gaelic as well as English, and circulated in the townships in the island of Lewis and other congested areas.—Mr. Ure replied: The answer is in the affirmative.

The Medical Services in India.

The Medical Services in India.

Mr. Hazleton asked the Under Secretary of State for India whether the higher grades of both the civil and military medical services in Native States were usually filled by Indians to the entire satisfaction of the Government and the people; whether similar posts outside these States were held by officers of the Indian Medical Service at much higher salaries; and, seeing that this latter system led to extravagance, inefficiency, and discontent, whether he proposed to abolish it by filling these places as in the Native States. The Master of Elbaks wrote in reply: So far as the Secretary of State has information on the subject, in the 25 most important Native States the headship of the medical department, with six exceptions, is held by an Indian. In the six mentioned the head is an officer of the Indian Medical Service, but in 16 of the remainder there is an agency surgeon, whose advice is doubtless available to the Durbar in medical matters. He has no information as to other medical appointments in these States, and has not heard that any dissatisfaction with them has been expressed. As to the system in force outside these States and the measures being taken in connexion therewith, I would refer my honourable friend to the papers recently laid upon the table of the House.

Wednesday, Nov. 3rd.

WEDNESDAY, Nov. 3RD.

The Naval Medical Service.

Dr. V. H. RUTHERFORD asked the First Lord of the Admiralty

whether the committee which was appointed to inquire into certain ricumstances affecting the medical service in the navy had reported yet; and, if so, whether he would lay the report upon the table of the House.—Mr. McKenka replied: The report of the committee, which is receiving our earnest attention, is a long one, and as it includes recommendations dealing with numbers and organisation for war, it is not practicable yet to say whether it can be made public in whole or in part.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX. London.

Age Incidence, Sex, and Comparative Frequency in Disease. By James Grant Andrew, M.B., C.M. Glasg., F.F.P.S. Glasg. Price

10s. 6d. net.
Clinical Memoranda for General Practitioners. By Alex. Theodore
Brand, M.D., C.M., and John Robert Keith, M.D., C.M. Price

Boulangé, CH., Paris,

Le Massage Plastique dans les Dermatoses de la Face, ses Indica-tions, ses Résultats. Par le Dr. Raoul Leroy. Deuxième édition, revue et corrigée. Préface de M. le Dr. Lucien Jacquet. Price not stated.

CHAMBERS, W. AND R., LIMITED, Edinburgh and London.

Inorganic Chemistry. Part I. By F. Stanley Kipping, Ph.D., D.Sc., F.R.S., and W. H. Perkin, Ph.D., M.Sc., F.R.S. Price 3s. 6d.

CLARENDON PRESS, Oxford.

The Apologia and Florida of Apuleius of Madaura. Tran H. E. Butler, Fellow of New College. Price 3s. 6d. net. Translated by

DEUTICKE, FRANZ, Liepsic und Wien.

Probleme der Tuberkulosefrage. Von Dr. Julius Bartel. Price M.3 50.

ENKE, FERDINAND, Stuttgart.

Lehrbuch der Krankheiten des Herzens und der Blutgefässe. Von Dr. Ernst Romberg. Zweite Auflage. Price, bound, M 14.

FROWDE, HENRY, AND HODDER AND STOUGHTON, Edinburgh, Glasgowand London.

Manual of Surgery. By Alexis Thomson, F.R.C.S. Edin., and Alexander Miles, F.R.C.S. Edin. Two Volumes. Third edition, revised and enlarged. Price $10s.\ 6d.$ net.

GRANDE IMPRIMERIE OUVRIÈRE "LE PAPIER," Paris.

République Française. Préfecture de Police. Rapport sur les Opérations du Service Vétérinaire Sanitaire de Paris et du Département de la Seine pendant l'Année 1908. Par H. Martel, Docteur ès-Sciences, Chef du Service. Price not stated.

HEINEMANN, WILLIAM, London.

Scientific Nutrition Simplified. By Goodwin Brown, A.M. With a Supplementary Chapter by J. Sven, M.D. Price 2s. 6d. net.

HIRSCHWALD, AUGUST, Berlin.

Bibliothek v. Coler-v. Schjerning. Band XXVII. Der angeborene Schwachsinn in seinen Beziehungen zum Militärdienst. Von Dr. Theophil Becker. Price M.5. Die Gicht und die Salzsäure-Jodkur. Von San.-Rat Dr. Falkenstein.

Price M.5.

JOURNAL OF NERVOUS AND MENTAL DISEASE PUBLISHING COMPANY,

Selected Papers on Hysteria and Other Psychoneuroses. By Prof. Sigmund Freud, Vienna. Authorised Translation by A. A. Brill, Ph.D., M.D. Price \$2.00.

KIMPTON, HENRY, London. (STENHOUSE, ALEXANDER, Glasgow.)

MPTON, HERRY, London. (STENHOUSE, ALEXANDER, Gliasgow.)
Kimpton's Pocket Medical Formulary. By E. Quin Thornton, M.D.
Ninth edition, revised. Price 7s. 6d. net.
Applied Surg'cal Anatomy. Regionally Presented. By George
Woolsey, A.B., M.D. Second edition. Enlarged and thoroughly
revised. Price 21s. net.
A Text-book of Practical Therapeutics. With Especial Reference
to the Application of Remedial Measures to Disease and their
Employment upon a Rational Basis. By Hobart Amory Hare,
M.D., B.Sc. Thirteenth edition, enlarged, thoroughly revised,
and largely rewritten. Price 21s. net. and largely rewritten. Price 21s. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to TRE LANGET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratutious publication.

ADAMS, J. E., M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the East London Hospital for Children.

BLACKWOOD, WILLIAM, M.B., Ch.B. Edin., has been appointed Honorary Medical Officer to the Camborne (Cornwall) Dispensary.

BOWEN, W. H., M.S. Lond., F.R.C.S. Eng., has been appointed Surgeon BUCK, A. H., F.R.C.S. Ed., M.R.C.S., L.R.C.P. Lond., has been appointed Senior Honorary Surgeon to the Sussex County Hospital. to the East London Hospital for Children.

CLARKE, HENRY J., Jun., M.B., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Surgeon to the Doncaster Royal 1.1ftrmary.

Lond., has been appointed Honorary Surgeon to the Doncaster Royal Listimary.

Dockbar, J. S., M.D., Ch.B. Vict., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Bishop Stort-ford District of the county of Hertford.

FLETCHER, H. N., M.B., B.S. Edin., has been appointed Senior Assistant Surgeon to the Sussex County Hospital.

GARDINER, PETER, M.D., C.M. Glasg., D.P.H. Lond., has been appointed Honorary Medical Officer to the Camborne (Cornwall) Dispensary.

HOARE, EDWARD F., M.D., Ch.B., L.S.A., has been appointed Honorary Assistant Surgeon to the Cancer and Skin Hospital, Liverpool.

KELLIE, KENNETH, M.B. Cantab., M.R.C.P. Lond., has been appointed an Assistant Physician to the Royal Hospital for Diseases of the Chest, City-road.

MCLAREN, MAUD V. EVERETT, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Part-time Medical Officer to the School Board of Glasgow.

Glasgow,
OLEY, GEORGE H.,

Glasgow,
POOLEY, GEORGE H., F.R.C.S. Eng. & Edin, has been appointed
Lecturer in Ophthalmology in the University of Sheffield.
THOMAS, JOSIAH TELFER, L.R.C.P. Lond., M.R.C.S., has been
appointed Medical Officer to the Camborne (Cornwall) Dispensary.
TONKING, JOHN HERBERT, M.B. Lond., L.R.C.P. Lond., M.R.C.S., has een appointed Honorary Medical Officer to the Camborne (Cornwall)

Dispensary.

VERRALL, T. J., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Consulting Surgeon to the Sussex County Hospital.

WILKINSON, GFORGE, M.B Cantab., F.R.C.S. Eng., has been appointed Lecturer in Diseases of the Ear, Nose, and Throat in the University

Pacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BANBURY, HORTON INFIRMARY .- House Surgeon. Salary £80 per

BANBURY, HORTON INFIRMARY.—HOUSE Surgeon. Salary 230 per annum, with board and residence.

BETHNAL GREEN INFIRMARY AND WORKHOUSE.—Assistant Medical Officer. Salary at rate of £100 per annum, with board, residence, &c. BIRKENHEAD AND WIRRAL CHILDRER'S HOSPITAL, Woodchurch-toad.—House Surgeon. Salary £100 per annum, with board, residence, and launday.

and laundry.

INFIRMARY.—Resident Casualty Officer for six months. Salary at rate of £50 per annum, with board, lodging. BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

BURNLEY UNION INFIRMARY.—Assistant Resident Medical Officer. Salary £150 per annum.

CANCER HOSPITAL, Fulham-road, London, S.W.—House Surgeon. Salary £70 per annum. Also Assistant Surgeon. Salary £70 per annum, with board and residence.

CHARTHAM, KENT COUNTY ASYLUM.—Third Assistant Medical Officer. Salary £145 per annum, with board, quarters, attendance, and washing.

Salary E149 per annum, with board, quarters, attendance, and washing.

CHICHESTER, WEST SUSSEX AND EAST HANTS GENERAL INFIRMARY AND DISPENSARY.—House Surgeon. Salary £90 per annum, with board, residence, and washing.

DUBLIN, DR. STEEVENS' HOSPITAL.—Assistant Physician. Also Gynacologist and Obstetric Physician.

DUDLEY, GUEST HOSPITAL.—Sentor Resident Medical Officer. Salary £100 per annum, with board, residence, attendance, and washing.

GLASGOW UNIVERSITY.—Additional Examiners in Zoology and Anatomy. Anatomy.

MUCHSTERSHIRE ROYAL INFIRMARY AND RYE INSTITUTION.—Senior House Surgeon. Salary £100 per annum, with board, residence,

and washing.

Gordon Hospital for Fistula, &c., Vauxhall Bridge-road S.W.—
House Surgeon for six months. Salary £25.

Greenwich Union Infirmary and Workhouse.—Junior Assistant
Medical Officer. Salary £100 per annum, with apartments,
rations, and washing.

HALIFAX COUNTY BOROUGH.—Schools Medical Officer. Salary £250 per annum.

HARTLEPOOLS HOSPITAL.—House Surgeon. Salary £100 per annum,

with board, washing and lodging.

Hospital for Epilepsy and Paralysis and Other Diseases of the Nervoys System, Maida Vale, W.—Resident Medical Officer for six months. Salary at rate of £50 per annum, with board, lodging,

and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond street, London, W.C.—
Fourth Ameriketist. Salary £15 15s.

ITALIAN HOSPITAL, Queen-square, London, W.C.—House Surgeon for six months, renewable. Salary £60 per annum, with board and stretches.

residence.

residence.

Leeds Public Dispensary.— Honorary Dental Surgeon.

Leichster, Leichsternshire and Rutland Asylum.—Senior Assistant

Medical Officer, unmarried. Salary £170 per annum, with board,
residence, and laundry.

Leicester Infirmary.—Assistant House Physician. Salary at rate of
£60 per annum, with board, apartments, and washing.

Lister Institute of Preventive Medicink, Chelsea-gardens, S.W.—
Two Assistant Bacteriologists. Salaries £250 and £200 per annum
respectively. Also Jenner Memorial Studentship and Grocers'
Company Research Studentship. Annual value £150.

London Hospital, Whitechapel, E.—Assistant Anæsthetist.

London Hospital Medical College.—Two Assistant Demonstrators
of Anatomy.

LONDON HOSPITAL MEDICAL COLLEGE.—Two Assistant Demonstrators of Anatomy.

LOUGHBORUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—

Resident House Surgeon. Salary £100 per annum, with rooms, attendance, board, and wassling.

MANCHESTER CHILDRER'S HOSPITAL, Gartside-street.—Medical Officer (non-resident). Salary £180 per annum.

MARGARET-STREET HOSPITAL FOR CONSUMPTION, 26, Margaret-street, Cavendish-square.—Honorary Dental Surgeon.

METROPOLITAN HOSPITAL, Kingsland road, N.K.—Dental Surgeon.

MIDDLESBROUGH, NORTH ORMESBY HOSPITAL.—House Surgeon. Salary £120 per annum, with board, residence, and washing.

MILLER GENERAL HOSPITAL FOR SOUTH-EAST LONDON, Greenwichroad, S. E.—Senior and Junior House Surgeons. Salaries at rate of
£100 and £20 per annum, with board, residence, and laundry.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE
CHEST, Hampstea I and Northwood, Middlesex.—Senior and Junior
Resident Medical Officers. Salary £175 and £75 per annum respectively, with board, residence, and washing. Also Clinical Pathologist. Salary 100 guineas per annum.

NEWARK-ON-TRENT HOSPITAL AND DISPENSARY.—Resident Medical
Officer, unmarried. Salary £100 per annum, with board, lodging.

logist. Salary 100 guineas per annum.

Newark-on-Trent Hospital and Dispensary.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, lodging, and laundry.

Newastle-upon-Tyne City Lunatic Asylum, Gosforth.—Junior Assistant Medical Officer, unmarried. Salary £140 per annum, with apartments, board, and laundry.

Nottingham General Dispensary.—Assistant Resident Surgeon, unmarried. Salary £160, with apartments, attendance, light, and fuel.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W .- Clinical

Assistant to the Throat, Nose, and Ear Department.

PAISLEY, ROYAL ALEXANDRA INFIRMARY, Barbour Park.—House Surgeon. Salary £40, with bed and board.

ROYAL DENTAL HOSPITAL. Leicester-square.—Joint Morning House Anæsthetist. Salary £25 per annum.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Assistant Dental Surgeon

Surgeon.
ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, B.C.—Assistant

SUFFECO.

ST. PANCRAS INFIRMARY, Dartmouth Park Hill, N.—Junior Assistant Medical Superintendent. Salary £100 per annum, with apartments, rations, and washing.

BT. THOMAS'S HOSPITAL.—Resident Assistant Physician.

BALOP INFIRMARY AND COUNTY HOSPITAL.—House Physician. Salary at rate of £70 per annum, with board and apartments.

BALTERLEY GRANGE SANATORIUM FOR CONSUMPTIVES, near Cheitenham.—Medical Superintendent. Salary £250 per annum, with board.

SCOTLAND, HARRIS PARISH.—Medical Officer. Salary £126 per annum,

with free house.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £50, with board, lodging, and washing

Salary £50, with board, lodging, and washing.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill.—Resident Surgical Officer, House Physician, and Junior House Surgeon. Salaries £120, £100, and £50 per annum respectively, with apartments, board, and washing.

TUNDRIDGE WELLS GENERAL HOSPITAL.—Junior Resident Medical Officer. Salary £30 per annum, with board, residence, &c.

UNIVERSITY COLLEGE HOSPITAL, Gower-street, W.C.—Resident Medical Officer. Surgical Registrar, and Obstetric Registrar.

WAREFIELD, CLAYTON HOSPITAL.—Junior House Surgeon, unmarried.

Salary £30 per annum, with board, lodging, and washing.

WEST SUFFOLK BOUGATION COMMITTEE.—Medical Inspector of School Children. Sa'ary £250 per annum, with travelling expenses.

WESTERN GENERAL DISPENSARY, Marviebone-road, N.W.—Junior House Surgeon. Salary at rate of £30 per annum, with board, residence, and washing.

Western General Dispensary, Marvlebone-road, N.W.—Junior House Surgeon. Salary at rate of £80 per annum, with board, residence, and washing.

WHITEOHAPEL UNION INFIRMARY. Vallance-road, N.E.—First Assistant Resident Medical Officer. Salary £130 per annum, with rations, apartments, coal, gas, and washing.

Births, Marriages, and Deaths.

BIRTHS.

BOYER.—On Nov. 1st, at Temperley, Buenos Aires, Argentine Republic, to Mr. and Mrs. Louis J. Boyer, a daughter. (By cable.)
COUTTS.—On Oct. 27th, at Surrey-street, Norwich, the wife of D. K. Coutts, F.R.C.S., of a daughter.
FRASER.—On Oct. 31st, at Coldharbour-lane, S.E., the wife of D. H. Fraser. M.A., M.B., B.C. Cantab., of a son.
HYDE.—On Oct. 31st, at Vine House, Kingston-on-Thames, the wife of Reginald Hyde, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGES.

BATHURST—WILLIAMS.—On Oct. 14th, at St. Augustine's, Penarth, Lacey Bathurst, M.B., B.S., of Leeds, son of C. Lacey Bathurst, of Sydenham, to Gwendoline Isabel Victoria, fourth daughter of Williams Edgar Williams of Cardiff.

HANNE—MORISON. On Oct. 30th, at Holy Trinity, Paddington, by the Ven. Archdeacon A. T. Scott, Vicar of St. James, Tunbridge Wells, assisted by the Rev. Cecil White, Vicar of Holy Trinity, Paddington, Louis Brightwell Hayne, M.D., of Harrogate, second son of Henry Hayne, Tunbridge Wells, to Margaret Lillias Morison, daughter of the late Murdoch Shaw Morison and of Mrs. Morison, of 17, Orsett-terrace Hyde Park.

daughter of the late Murdoch Shaw Morison and of Mrs. Morison, of 17. Orsett-terrace Hyde Park.

HIND-BIGG-WITHER.—On Oct. 26th, at St. Mary's Church, Shalford, near Guildford, Henry Hind, F.R.C.S., to Helen, only daughter of Colonel and Mrs. A. C. Bigg-Wither, of Tilthams, Godalming.

INMAN-WETHERED.—On Nov. 2nd, at St. Marylebone Parish Church, by the father of the bridegroom, assisted by the Rev. W. D. Morrison, LL. D., and the Rev. W. Burnaby, Arthur Conyers Inman, M.B. son of the Rev. H. T. and Mrs. Inman, of 69, Warwick-road, Kensington, to Dorothy Marguerite, daughter of Dr. F. J. and Mrs. Wethered, of 83, Harley-street, W.

DEATHS.

CAMERON.—At Cleethorpes, on October 23rd, Alexander Cameron, M.D., late of Caistor, aged 68.

HAYER.—On Oct. 2nd, at Mafeking, South Africa, William Andrew Hayes, M.R.C.S., L.R.C.P., aged 46 years.

N.B.— A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Aotes, Short Comments, and Answers to Correspondents.

THE RULES OF THE NORFOLK AND NORWICH HOSPITAL IN 1771.

A CORRESPONDENT has forwarded us a copy of the original "Rules and Orders" for the Norfolk and Norwich Hospital, the history of which we recently described, and it is interesting to note that the regulations of a provincial hospital in 1771 did not greatly differ from those in force in many similar institutions at the present day. There were in all 92 rules, of which 35 concerned the government and regulation of the hospital, 16 the admission and discharge of patients, 7 the physicians and surgeons, 8 the apothecary, 4 the secretary, 7 the matron, 2 the servants, 2 the porter, and 11 the patients. The system of governors "letters" for in- and out-patients respectively, whereby every subscription or donation entitled its giver to recommend a number of patients in proportion to its amount for hospital treatment, is still in force very generally, and we know of county hospitals in which the rule still exists that the patients shall attend to be admitted once a week except in cases of extreme urgency. Neither has the tradition that no capital operation shall be performed without a consultation of the whole of the honorary staff been yet universally rescinded, although this rule, like the last, where it still exists, is generally regarded as a dead-letter. The functions of the general and weekly boards of governors in no way differed in the eighteenth century from those of the corresponding bodies to-day, and in the weekly house visitors we see the direct prototype of the modern house committees, although they performed their duties in a more ceremonious manner than is usual at present. We read in Rule XVIII., "That two or more Governors be appointed at every weekly Board to visit the House once every day for the ensuing week: that they walk through the Wards with White Wands in their hands, that they may be known to be the House Visitors, and that, as soon as they enter the Wards the Nurses withdraw, and the Patients attend at their respective Beds: that they inquire of the Patients, whether the Physicians, Surgeons, Apothecary, Matron, Nurses, and Servants have attended them agreeably to the Rules of the Hospital: whether the Provisions were good, and have been properly weighed and distributed: that in their return from visiting the wards the Apothecary, Matron, Nurses, and Servants be ready to attend them, to answer their Questions: that the Visitors inquire of them, whether the Patients have been guilty of swearing, drinking, or any indecent or irregular behaviour etc." These duties closely approximate to those of modern house committees, but perhaps it is as well that the white wands are dispensed with in an age that has quite forgotten "the nice conduct of a clouded cane." Amongst the cases ineligible for admission were "Women big with Child, Persons in Consumptions, or subject to Epileptic Fits, suspected to have the Small-pox, Venereal Disease, Itch, or other Infectious Disorders." The visiting staff then, as now, was honorary, and the resident medical officer was known as the "apothecary." That official had little discretion in the treatment of cases except in cases of great emergency. He was not allowed to practise out of the hospital and he must "be home at 10 of the clock at night at farthest, and do not lie out of the house without special leave, and must always acquaint the matron where he is to be found." is to be found." He was, however, allowed to order about the messenger or porter, which appears to have been his only privilege as far as we can find from the rules. Each physician was allowed to take two pupils who might dress the patients under the directions of their master but might not prescribe for any case. The duties of the nurses were summed up in two rules, one ordering them to clean the wards before 7 o'clock in summer and 8 o'clock in winter, and the other running as follows: "That the Nurses and Servants obey the Matron as their Mistress, and that they behave with tenderness to the Patients and Civility and Respect to Strangers," on whose charitable pockets the governors responsible for the injunction doubtless had their designs.

THE ORIGINAL HOME OF SMALL-POX.

In his curious "Sermon against the Dangerous and Sinful Practice of Inoculation," which was preached at St. Andrew's, Holborn, in July, 1722, the Rev. Edmund Massey, one of the City "Lecturers," gave it as his opinion that the disease with which Satan was allowed to afflict Job was none other than confluent small-pox. "The Devil," said the preacher, "by some venomous infusion into the body of Job, might raise his blood to such a ferment, as threw out a confluence of inflammatory pustules all over him from head to foot." Hence, of course, the "sore bolls, from the sole of his foot unto his crown," described in scripture. The preacher did not see what could be advanced to invalidate this supposition, especially as inoculation came from the East-a fact proving that small-pox is of oriental origin too.

Old commentators, however, including Greding, who discussed Massey's view in 1781, held that the disease which afflicted Job was a form of Syrian ulcer.

The author of the Book of Job probably wrote at a late epoch B.C., and described a disease actually observed by him among patriarchal tribesmen to the east of Judea. Modern research has traced the small-pox to Arabia and African countries bordering on the Red Sea, on its westward progress from India and China. Tabari, the best of the Arab historians, is quoted by Dr. Creighton as recording an oral tradition, according to which small-pox appeared for the first time in Arabia in what was known as the Elephant War in 5-9-571 A.D. It is said to have broken out among the Abyssinians be leging Mecca, and that the disease probably crossed the Red Sea and was held to be air-borne is implied in an Arab legend as to its origin, according to which flocks of birds, coming up from the sea, dropped stones from their beaks and claws upon the Abyssinians. These stones produced wounds and pustules.

At about the period of the Elephant War the Justinian plague was raging in Europe. It had originated in about the year 543 A.D., when it decimated Constantinople, and it seems to have appeared sporadically in Northern Italy and Southern France, where its symptoms are described by Gregory of Tours. He calls it "lues inguinaria," a phrase which suggests bubonic plague. The exact nature of the plague of Justinian's time is, indeed, doubtful. And we are therefore not justified in supposing that it was an early epidemic of small-pox. This disease, indeed, very probably only appeared as an epidemic in Europe at the time of the earliest Saracenic invasions, though the international trade and intercourse of the Roman Empire may have introduced isolated cases of it at an earlier date. It was essentially the Saracenic disease, and was first described by the Arab physicians

THE NATIONAL FOOD REFORM ASSOCIATION.

Some interesting particulars regarding the history and work of the National Food Reform Association are given in the newly published first annual report. The association was inaugurated at a meeting held at 54, Mount-street, London, W., by invitation of the Countess of Plymouth on Feb. 26th, 1908. On this occasion a resolution was adopted to the effect that the meeting, profoundly conscious of the importance of diet as a factor in the moral, intellectual, physical, political, and economic life of the nation, believed that the time was ripe for a new step towards a more rational and humane system. Many well-known names both of ladies and gentlemen appeared on the list of the committee, a pamphlet entitled "Reasons for Food Reform" was published, and various letters and articles were inserted in the daily press. Since March last six booklets have been published, two of them being collections of recipes for the preparation of fleshless dishes. One of these (booklet No. 2, with 24 simple recipes) was sent to the heads of more than 500 of the leading public and private schools for both sexes, to the Colleges at Oxford and Cambridge, to the whole of the Social Settlements in the United to the London hospitals, and to similar institutions. Several of the publications of the association can be recommended to those who may be desirous of reducing the proportion of animal food in their dietary. The secretary of the association is Mr. Charles B. Hecht, and the offices are at 178, St. Stephen's House, Westminster Bridge, close to the Houses of Parliament

VERMINOUS PERSONS.

Dr. Waldo held an inquest on Oct. 25th on the body of Edward William Brighton, aged 47 years, of no home, who was found in a dying condition on the Thames Embankment and died a few hours later at the City Branch Infirmary. It was stated that in 1904 the man's mother died, leaving him £350, and he spent the whole of this money in drink, drawing the last instalment in June last. A police constable said that he had known some of these homeless people to sit on the Embankment for two days and two nights without going away. When moved on by the police they would simply go to the next bench.

Usually they brought a store of food with them. Death having been certified to be due to organic disease, caused by alcoholism and accelerated by exposure and self-neglect, the jury returned a verdict accordingly, adding a rider expressing their opinion that, in the interests of public health, the police should have power to insist on homeless people being cleansed when necessary, and further, they considered that the Cleansing of Persons Act, 1897, which is at present an optional one, should be made compulsory. The Act of 1897 provides that any local authority shall have the power, when in their discretion they shall see fit, to permit any person who shall apply to them, on the ground that he is infested with vermin, to have the use, free of charge, of the apparatus (if any) which they possess for cleansing the person and his clothing from vermin. The use of such apparatus shall not be considered to be parochial relief or charitable allowance to the person using the same or to the parent of such person, and no such parent or person shall by reason thereof be deprived of any right or privilege or be subject to any disqualification or disability. Local authorities may expend any reasonable sum on buildings, appliances, and attendants that may be required for the carrying out of this Act, and any expenses for these purposes may be defrayed out of any rates or fund applicable by the authority for general sanitary purposes, or for the relief of the poor. There can be no question that it is a standing disgrace to our modern civilisation and our laws that thousands of verminous and filthy persons should be allowed to roam the highways of our great cities and infect the benches and grass in our public parks without the police or sanitary officers having any power to interfere with them, seeing that they

are infective in every sense of the word. It would be interesting to have statistics as to the number of persons in a year who apply to the local authorities throughout England to have themselves and their clothing disinfected. For the sake of the public health, and more particularly for the sake of the children of the respectable poor using the seats and grass in our public parks, it seems desirable that the police should have powers to detain verminous persons for their compulsory disinfection. But since poverty is at the bottom of their condition it is to be feared that relapses into filth would always be common.

PROFESSIONAL AMENITIES.

To the Editor of THE LANCET.

SIR,-In your account of the discussion of the paper read by Dr. F. Hewitt before the Medical Society of London, Dr. J. Vincent Bell is reported to have said "the dentist was often found to be more expert in giving an anasthetic for a dental operation than the raw country practitioner." What have that hard-working and very often extremely capable body of men, the country practitioners, done to merit such a term of opprobrium? Cannot the amenities of discussion be observed without using terms of reproach to professional brothers? On reading the reports of discussions of some societies of which the members relegate to themselves special skill, I have often been struck by the fact that apparently none but fools and dunderheads enter the ranks of the general and country practitioner—a sentiment as untrue as it is little creditable to the medical profession.

I am, Sir, yours faithfully,

T. W. S. PATERSON, M.A., M.B. Cantab. Holland-park, W., Nov. 1st, 1909.

MORALITY AND HEALTH.

In the form of a lecture delivered at the Nurses' Lodge last week the Hon. Albinia Brodrick repeated the substance of her paper read at the Nursing Conference in July on Morality in Relation to Health. The subject is essentially a difficult one for public discussion, but Miss Brodrick dealt with it in a straightforward and scientific manner, urging from the start the importance of facing squarely a fact which exists, and the criminality of preserving wilful blindness to what amounts to a grave social and national danger. To nurses and all those engaged in any form of health or social work an accurate knowledge of these matters is especially valuable, as the lecturer showed when she quoted the instance of a healthy young girl who was taken to a rescue home and was put to sleep in soiled sheets, gonorrhœal infection resulting. Nurses possess unique opportunities of helping and advising their women patients both as regards their own health and in the training of their boys. The education and discipline of the young by the parents was a point upon which great stress was In describing the chief symptoms and sequelæ of the common forms of venereal disease the lecturer urged that it was only by means of widespread knowledge that the evil could be stamped out. The highly infectious nature of these es is probably known to but few outside the medical profession, and in the present condition of society the lips of medical men are sealed and the innocent continue to suffer with, or more than, the guilty. "Syphilis insontium," said the speaker, "crowns the mystery of pain." Among the suggestions for the prevention of the spread of venereal disease compulsory notification was recom-mended, and in order to obtain better statistics the frank inclusion of venereal disease on death certificates. Attention was also drawn to the very small accommodation in this country for the free treatment of disorders classed under this heading.

We understand that a committee is to be formed with the object of furthering prophylactic measures against venereal disease, especially educational measures, and the cooperation of medical men is naturally desired by the promoters of the movement so courageously started by Miss Brodrick, who has been asked to lecture in several provincial towns on the "national evil." The matter is, of course, one of the utmost difficulty to bring to the proper attention of the public. Those who most need enlightenment are the vicious and careless who would be the last to listen with any respect to the earnest words of a band of social reformers who will have difficulty enough in overcoming the prejudices of a number of "respectable people. But we think such a movement may be powerful for good in educating the ignorant before they have drifted into bad habits. There can be no greater inducement to chastity than a thorough knowledge of the terrible physical co-sequences that may arise from its neglect. The movement accordingly has our sympathy, and those interested in the propaganda can obtain Miss Brodrick's lecture, which we have summarised above, in pamphlet form from The Free Press, 11, Adam-street, London, W.C.

THE ILFORD X RAY PLATES.

In the course of a visit to the Annual Exhibition of the Royal Photographic Society held at the New Gallery, Regent-street, W., we were shown some excellent radiographs illustrating pulmonary disease and others which had been made with the special X ray plates of Messrs. Ilford, Limited. We have had occasion to refer to the good qualities of their X ray plates in previous issues, and it is satisfactory to find that the quality is better than ever. The great characteristic of the Ilford X ray plate is the ease with which a satisfactory density is secured, as well as a great richness of detail; and these good qualities

are readily obtainable with very short exposures. The particular plates we examined suffered somewhat from over-development, but apart from this various stages of pulmonary tuberculosis were shown with striking clearness. One showing a cavity in the apex of the lung, the thickened wall of which comes out very distinctly, is particularly worthy of notice. Messrs. Ilford, Limited, have done a real service in placing such an excellent X ray plate in the hands of radiographers. A satisfactory feature is that we are now independent of any supplies from abroad.

Post-Graduate.-We have often pointed out the general merits of the classes, but we think we could hardly select in our columns special classes for particular eulogy.

Anonymous.—We are obliged for having our attention drawn to the swindling advertisement. The stuff will be analysed in our laboratory.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 4th, 1909.

Date.	Barometer reduced to Sea Level and 32° F.	Direc- tion of Wind.	Rain- fall.	Solar Radio in Vacuo.	Maxi- mum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Oct. 29 30 31	29·79 29·97 30·05	N.W. N.W. N.E.	0·79 0 01	60 53 53	43 44 49	39 34 38	40 37 40	41 38 43	Overcast Cloudy Cloudy
Nov. 1	30·15 30·12 30·04 30·16	E. S.W. N.E. N.E.	0·11 0·01	59 73 57 55	53 55 56 54	43 48 48 50	48 47 53 49	48 48 54 51	Overcast Overcast Raining Foggy

Medical Diary for the ensuing Week.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

THURSDAY.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION (Hon. Secretary-William J. Gow): at 7.45 p.m.

- pecimens:

 Dr. Atthur Giles: (1) A very Large Ovarian Adeno-carcinoma;

 (2) Carcinoma developing in a Case of Kraurosis Vulvæ.

 Dr. T. G. Stevens: (1) Fribi omyoma of the Uterus associated with Four Months Pregnancy, Necrobiosis; (2) Adenomyoma and Small Cystic Growths of the Vaginal Wall.

Paper:
Dr. Comyns Berkeley and Dr. Victor Bonney: Leukoplakic
Vulvitis and its Relation to Kraurosis Vulvæ and Carcinoma
Vulvæ, with epidiascopic demonstration.

CLIMICAL SECTION (Hon. Secretaries: H. D. Rolleston, M.D., Albert Carless, M.S.): at 8 p.m.

Mr. A. Pearce Gould: Prostato-vesical Calculus weighing eight

- ounces.

 Dr. Lunn: Acromegaly (with photographs).

 Dr. Rolleston: Scleroderma and Sclerodactyly.

 Dr. Galloway: (1) Hæmochromatosis with Large Liver and Spleen; (2) Hæmochromatosis, Improvement after Opera-

- Dr. T. D. Savill: Scieroderma of the Extremities.
 Dr. Poynton: Congenital (Edema in Mother and Child, associated with a Cardiac Defect.
 Dr. Salusbury McNalty: Ancurysm in a Boy.
 And other cases.

Report:
Mr. A. Carless: Intestinal Concretion (shown at last meeting). Papers:
Dr. Gifford Nash: Primary Hyperplastic Tuberculosis of the

Stomach and Duodenum. Dr. Hale White, Dr. Bruce-Porter, and Mr. Lockhart Mummery:
A Case of Pneumococcal Colitis with Hyperpyrexia, Severe
Hæmorrhage treated by Appendicostomy.

N.B.—Fellows of the Society are entitled to attend and to speak at all Meetings.

MHDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

- NDAY.—8 P.M., Clinical Meeting. Cases will be exhibited by Mr. H. Tilley, Dr. Savill, Dr. F. S. Palmer and Mr. C. A. Ballance, Mr. H. S. Collier, Mr. H. Clayton-Greene, Mr. E. M. Corner, Mr. Fairbank, Dr. E. Wynter and Mr. Kellock, Dr. J. W. Carr, Mr. V. W. Low, Dr. W. Harris, and Dr. F. S. Langmead, MONDAY .-
- HUNTERIAN SOCIETY, London Institution, Finsbury-circus, B.C. WEDNESDAY. -8.30 F.M., Dr. A. C. Jordan: X Rays Diagnosis for
- UNITED SERVICES MEDICAL SOCIETY, Royal Army Medical College, Millbank, S.W.

WEDNESDAY .- 5 P.M., Clinical Demonstrations.

- OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.
- PHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM, 11, Chandos-street, Cavendish-square, W.

 THURSDAY.—8 P.M., Card Cases by Mr. S. Stephenson, Mr. R. D. Batten, and others. 8.30 P.M., Mr. W. M. Beaumont: Oxycephaly.—Mr. W. B. Harman: (1) The Measurement of the Desire for Binocular Vision by Means of the Diaphragm Test; (2) The Measurement of Hyperphoria by Means of the Diaphragm Test.
- HARVEIAN SOCIETY OF LONDON, Café Royal, Regent-street. W. THURSDAY.-7 for 7.30 P.M., Annual Dinner.
- NORTH LONDON MEDICAL AND CHIRURGICAL SOCIETY, Board Room of the Great Northern Central Hospital, Holloway-road, N. THURSDAY.—9 P.M., Clinical Evening.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall Bast. TUESDAY. - 5 P.M., Sir T. Clifford Allbutt, K.C.B.: Greek Medicine in Rome. (Fitz-Patrick Lecture.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC. 22. Chenies-street, W.C.

- MONDAY.—4 P.M., Dr. H. G. Adamson: Clinique (Skin). 5.15 P.M., Lecture:—Mr. A. H. Tubby: Surgical Diseases of Children
- (continued).
 TUESDAY.—4 P.M., Dr. F. Taylor: Clinique (Medical). 5.15 P.M.,
 Lecture:—Dr. T. D. Lister: Lung Affections after Injuries.
 WEDNESDAY.—4 P.M., Mr. P. J. Freyer: Clinique (Surgical). 5.15 P.M.,
 Lecture:—Mr. H. S. Collier: The Surgical Complications of the
 Inflammations of the Colon.
- THURSDAY.—4 P.M., Sir Jonathan Hutchinson: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. L. Smith: The Treatment of a Failing Heart.

FRIDAY.-4 P.M., Dr. H. Tilley: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-

Monday.—10 a.m., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 p.m., Medical and Surgical Clinics. X Rays.
Mr. Dunn: Diseases of the Eyes. 2.30 p.m., Operations. 5 p.m.,

Mr. Dunn: Diseases of the Ryes. 2.30 P.M., Operations. S P.M., Lecture:—Mr. Davis: Otorrho:a.—Treatment.

TUESDAY.—10 A.M., Dr. Moullin: Gynscological Operations. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Kar. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Moullin: Gynacological Cases.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Kar. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. B. Harman: Diseases of the Ryes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Medicine.

THURSDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Ryes. 2.30 P.M., Operations. 5 P.M., Lecture: Mr. Dunn: On so-called "Second Sight," its Features and Causes.

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PRIDAY.—10 a.M., Dr. Moullin: Gynæcological Operations. Medical Registrar: Demonstration of Cases in the Wards. 2 p.m., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 p.m., Operations. Dr. Abraham: Diseases of the Skin. 5 p.m., Lecture:—Mr. Bidwell: Clinical. SATURDAY.—10 a.M., Dr. Saunders: Diseases of Children. Mr. B., Harman: Diseases of the Eyes. Dr. Davis: Diseases of the Throat, Nose, and Bar. 12.15 p.m., Lecture:—Dr. G. Stewart: Practical Medicine. 2 p.m., Medical and Surgical Clinics. X Rays. 2.30 p.m., Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

- Monday.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 a.M., Surgical and Medical. 12 noon, Ear and Throat. 2.15 P.M., Special Lecture:—Mr. W. Turner: Whitlows and their Treatment.

 Tuesday.—2 P.M. Operation.
- Special Lecture:—Mr. W. Turner: Whitlows and their Treatment.

 TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine.
 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris:
 Diseases of the Skin. Out-patient Demonstrations:—10 A.M.,
 Surgical and Medical. 12 noon, Skin. 2.15 P.M., Special
 Lecture:—Dr. R. Wells: Angina Pectoris.

 WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor:
 Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient
 Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.
 THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine.
 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. SaleBarker: Radiography. Out-patient Demonstrations:—10 A.M.,
 Surgical and Medical. 12 noon, Ear and Throat,
 FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford:
 Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient
 Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
 SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—
 10 A.M., Surgical and Medical. 11 A.M., Eye.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

Vales's General Hospital, Tottenham, N.

Monday.—Clinics:—10 a.m., Surgical Out-patient (Mr. H. Byans),
2.30 p.m., Medical Out-patient (Dr. T. R. Whipham): Nose,
Throat, and Ear (Mr. H. W. Carson). 4.30 p.m., Medical
In-patient (Dr. A. J. Whiting).

TUESDAY.—Clinic: 10 a.m., Medical Out-patient (Dr. A. G. Auld).
2.30 p.m., Operations. Clinics:—Surgical (Mr. W. Edmunda);
Gynscological (Dr. A. B. Giles). 4.30 p.m., Lecture:—Mr. R.
Henslowe-Wellington: Forensic Medicine and Coroner's Law.

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Bye (Mr. R. P. Brooks), 3 P.M., X Rays (Dr. H. Pirle).

THURSDAY.—2.30 P.M., Gynacological Operations (Dr. A. E. Giles).

Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

PRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. H. Evans).

2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Bye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Lesile).

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC Queen-square, Bloomsbury, W.C.

Monday.—4 P.M., Lecture: Dr. G. Holmes: Clinical Anatomy of the Nervous System—The Basal Ganglia and the Internal Capsule. The Optic and Olfactory Systems. TUESDAY.—3.30 P.M., Clinical Lecture: Dr. R. Russell: Syringo-

mvelia.

myelia.
THURSDAY.—4 P.M., Lecture:—Dr. G. Holmes: Clinical Anatomy of the Nervous System—The Anatomy of, and the Localisation of Function in, the Forebrain.
FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. B. Russell: Combined Degeneration of the Cord.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Innroad, W.C.

TUESDAY.—3.45 P.M., Lecture:—Dr. A. Wylie: Larynx. FRIDAY.—3.45 P.M., Lecture:—Dr. A. Wylie: Larynx.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W.

MONDAY.—3 P.M., Clinical Demonstration: Dr. H. Campbell.
TUFSDAY.—5 P.M., Clinical Demonstration:—Dr. J. Mackenzle.
WEDNESDAY.—3 P.M., Clinical Demonstration:—Dr. F. Palmer.
THURSDAY.—3 P.M., Clinical Demonstration:—Dr. T. D. Savill.
FRIDAY.—2 P.M., Clinical Demonstration:—Dr. P. Stewart. 5.30 P.M.,
Clinical Demonstration:—Dr. P. Stewart. 5.30 P.M.,

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester

THURSDAY.—6 P.M., Chesterfield Lecture:—Syphilis (continued): Papular (I., Miliary: II., Lenticular; III., Squamous; IV., Moist), Pustular and Tuberculous.

OPERATIONS.

METROPOLITAN HOSPITALS.

METROPOLITAN HOSPITALS.

MONDAY (8th).—London (2 p.m.), St. Bartholomew's (1.30 p.m.), St. Thomas's (3.30 p.m.), St. George's (2 p.m.), St. Mary's (2.30 p.m.), Middleeex (1.30 p.m.), Westminster (2 p.m.), Chelses (2 p.m.), Samaritan (Gymeological, by Physicians, 2 p.m.), Soho-equare (2 p.m.), City Orthopedie (4 p.m.), Gt. Northern Central (2.30 p.m.), West London (2.30 p.m.), London Throat (9.30 a.m.), Royal Free (2 p.m.), Guy's (1.30 p.m.), Children, Gt. Ormond-street (9 a.m.), St. Mark's (2.30 p.m.).

TUESDAY (9th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Goldensquare (9.30 A.M.), Soho-square (2 P.M.), Orleises (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Bar (Minor, 9 A.M., Major, 2 P.M.).

Central London Throat and Har (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (10th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Boyal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopedic (10 A.M.), St. Peter's (2 P.M.), Samartan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopedic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Lental, -M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Har (Minor, 9 A.M., Major, 2 P.M.), St. Thomas's (1.30 P.M.), Major, 2 P.M.), St. Thomas's (1.30 P.M

Throat and Bar (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (11th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), No.th-West London (2 P.M.), Gt. Northern Central (Gynecological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M.), and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Rar (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynecological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Bar (Minor, (9 A.M., Major, 2 P.M.)).

(MINOT, US A.M., MBJOT, Z P.M.).

FRIDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Oross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (1C A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), Evest London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor 9 A.M., Major, 2 P.M.),

SATURDAY (13th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Bye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

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In Address

THE NATION AND THE TROPICS

Delivered at the London School of Tropical Medicine on Oct. 26th, 1909,

BY WILLIAM OSLER, M.D., F.R.S.,

REGIUS PROFESSOR OF MEDICINE, OXFORD.

[SPECIALLY REPORTED IN FULL FOR THE LANCET.]

GENTLEMEN, - The evolution of our present hopeful condition, like that of organic life, looks uniform; but examined more closely this uniformity disappears in a deeper parallel —the sudden intrusion of apparently new forces which have changed the broad surface of humanity quite as profoundly as did, for example, the glacial period the biology of the northern portions of the globe. Three outstanding events have loosened as a spring the pent-up energies of the modern world—the Greek civilisation, the geographic renaissance of the sixteenth century, and the scientific awakening of the nineteenth century. Greek thought not only stripped man for the race, but Greek methods gave him correct principles of training and clear ideas of the nature of the race to be run. Collectively we follow to-day occidental, Greek ideals, and what makes Western civilisation such a tissue of inconsistencies is the injection, Anno Domini of an oriental morality which controls the individual, while powerless to sway the nations. The geographic renaissance has given to the progressive peoples of Europe a new pinnacle of outlook. To the lust of conquest succeeded the lust of commerce, to be followed by the burning zeal to evangelise; and then a steady, sober plan of settlement which has encircled the earth with new nations. And the third great outburst of energy is the scientific awakening of the nineteenth century, which has not only placed in his hands a heretofore undreamed of capacity for material progress, but has given to man such a control of nature that at a stroke is removed the chief obstacle to a world-wide dominion.

The expansion of modern Europe, the completion of which was one of the great features of the latter part of the nineteenth century, has opened a broader vista than ever before looked on by humanity. The ascent of man began in the tropics, where the conditions of nature made life easy, and at least four of the six great ancient civilisations—the Egyptian, Phœnician, Assyrian, and Babylonian-rose and fell within, or close to the tropics. Once only in modern times has a tropical people, reaching a high grade of civilisation, spread far and wide, in the magic outburst with which the Arabians shook the very foundations of Christianity. In the last four centuries the expansion of Europe has changed the map of the world, and in conflict with the old civilisations in North and South America, and by wholesale appropriations in Asia and Africa, the children of Japhet have gone forth with the Bible in one hand and the sword in the other conquering and to conquer, taking the uttermost parts of the earth for their possession. In the course of this period they have partitioned among them one hemisphere, two continents, and a large part of a third. A glance at the map shows that as a result of this expansion many independent nations have sprung up; but a very large portion of the conquered earth is still in control of Europe, and linked to it by strong political ties. Practically these countries come in two divisions—the self-governing colonies and the dependencies. A majority of the former are in the temperate regions, and have reached a stage of maturity, and one of them has become the great nation whose representative honours us to-day with his presence.

Scarcely less important, and vastly greater in extent and population, are the dependencies, nearly all of which fall within the tropics, and with their destiny the problem of the twentieth century is bound up. If we take two lines, 30 degrees north latitude and 30 degrees south latitude, the part of the earth between represents the great heat belt of the tropics, within which lie the whole of Africa, Arabia, India, Burma, the Malay States, Polynesia, the Philippines, Mexico, and the Central American Republics, with the West Indies. Mr. H. O. Becket of the Department of Geography, Oxford, has prepared for me four maps (which I have much No. 4498.

pleasure in presenting to the school) showing at a glance the tropical possessions of the four Western nations—England, France, Germany, and the United States. The following table gives the figures in population and in square miles of territory:—

_ • {	Т	ropical ter	Total	Home country.		
	America.	Africa.	Asia.	Pacific.	tropical.	country.
France }	•	17,700,000 4,032, 00 0		90,000 9,000		
German (Empire)	Nu.	11,700,000 931 ,5 00	4736.	400,000 96,000		
United; Kingdom }		30,500,000 1,600,000	296,600,000 1,900,000	1,150,000 1,400,000		
United (States)	305,000 47,500	Na.	Na.	7,707,000 134,500	1	76,000,000 2,970,000

Heavy figures give population. Lighter figures give area (in square miles).

The tropical world has been appropriated, and this country has a burden of tropical population six times greater than the other three combined. A few comparatively small districts remain either independent, or as yet unexplored, as Abyssinia and parts of Polynesia.

THE DOUBLE BURDEN OF THE WHITE MAN.

It is no light burden for the white man to administer this vast trust. It is, indeed, a heavy task, but the responsibility of Empire has been the making of the race. In dealing with subject nations there are only two problems of the first rank—order and health. The first of these may be said to be a speciality of the Anglo-Saxon. Scarlet sins may be laid at his door—there are many pages in the story of his world-exodus which we would fain blot out; too often he has gone forth in the spirit of the Old Testament crying "The sword of the Lord and Gideon." But heap in one pan of the balance all the grievous tragedies of America and of Australasia, the wholesale destruction of native races, all the bloodshed of India, and the calamities of South Africa, and in the other pan put just the one little word "order," which has everywhere followed the flag, and it alone makes the other kick the beam. Every-where this has been the special and most successful feature of British rule. We are entering upon a phase in which the natural results of this stable government upon the subject races are shown. Just as at home the fate of the rich is indissolubly bound up with that of the poor, so in the dependencies the fate of the strong and the weak cannot be dissevered; and whether he will bear or whether he will forbear, the brother's keeper doctrine of the strong, helpful brother must be preached to the white man. The responsi-bility is upon the nation to maintain certain standards which our civilisation recognises as indispensable on the supposition that our Western ideas are right; but we have to meet the fact that the ways of the natives are not our ways, nor their thoughts our thoughts; and yet we place them in such a position that sooner or later they become joint heritors with us of certain civil and social traditions and aspirations. It is in India and the Philippines that the political problem looms large, but no matter how large or how formidable it must not be allowed to interfere with the great primary function of the Anglo-Saxon as a policeman. There may be a doubt as to the grafting of our manners, and still greater doubt as to the possibility of inculcating our morals; a doubt also as to the wisdom of trying everywhere to force upon them our religion; but you will, I think, agree that the second great function of the nation is to give to the inhabitants of the dependencies, Europeans or natives, good health —a freedom from plague, pestilence, and famine. And this brings me to the main subject of my address, the control of the tropics by sanitation.

THE NEW CRUSADE.

When the historian gets far enough away from the nineteenth century to see it as a whole, perhaps one feature above all others will attract his attention, since amid all the movements of that wonderful period it has been most directly

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beneficent to the race. Political, social, religious, intellectual revolutions will demand his comments, but if I am not greatly mistaken the movement upon which he will dwell longest will be the introduction of modern sanitation. It is not possible to ascribe the credit of this to any one man or group of men in any country. The movement arose with the recognition of the true nature of the large division of what we call the infectious diseases, which are responsible for more than one half of the deaths in the community. This country may claim the merit of having first carried into practical effect sanitary laws, which have resulted in a steadily diminishing mortality from this class. The cholera epidemic in the "fifties" did a great deal to arouse public opinion, and that remarkable group of men, comprising Chadwick, Budd, Murchison, Simon, Acland, Buchanan, Russell, and B. W. Richardson, and among laymen Charles Kingsley, put practical sanitation on a scientific basis. They had grasped the conception that the battle had to be fought against a living contagion, which found in poverty, filth, and wretched homes the conditions for its existence; and an immense impetus was given when in rapid succession, in the last third of the century, the germs of a large number of the most serious of epidemic diseases were discovered. The sum total has been the abolition of many infections, such as typhus fever; an extraordinary reduction in others, as in typhoid; the almost complete abolition of postoperative sepsis through Lister's work; and the perfecting of a sanitary organisation which gives confidence to the public and prevents commercial panics. Think of the shudder that would have passed over this country 30 years ago at the announcement of an outbreak of cholera in Rotterdam, yet in August last the presence of ten cases in that city was simply commented upon, but none felt the slightest anxiety. Altogether we may say that the home defences are in a fairly satisfactory condition, but there remain the complete victory over typhoid fever, the progressive reduction in the mortality from tuberculosis, and the limitation of the still very fatal diseases of childhood, and we have not arranged yet even a truce with that subtle and very progressive foe, cancer.

This flowery and flattering picture is true of the little island which forms the centre, and it is true, fortunately, to a great extent of the Confederated States, but when we take a glance at the empire at large, at the huge area which we see represented on the map, we find a totally different state of affairs. Out of the total population 60,000,000 perhaps live under good and constantly improving sanitary conditions, but of the vast dependencies with their teeming millions there is a very different story to be told. With an awakening of an interest in the Tropics men have learned to recognise the primary importance of good health and the possibility of mitigating conditions which favour the persistence of widespread and destructive epidemics. Of tropical diseases of the first importance may be mentioned malaria, plague, cholera, yellow fever, dysentery, beri-beri, and relapsing fever, and certain parasitic disorders as ankylostomiasis. They vary in their prevalence in different localities, but together they make the Tropics' great enemies. It is interesting to note that of all but one we know the germs, the conditions of their growth, and in nearly all the mode of propagation. Quietly but surely this great work has been accomplished by a group of patient investigators, many of whom have sacrificed health and life in their endeavours. Let us pause a moment to pay a tribute of gratitude to these saviours of humanity who have made the new mission possible—to Pasteur, to Koch, to Laveran, to Reed and his fellows, to Ross, Manson, and Bruce. And let us not forget that they built upon foundations laid by thousands of silent workers whose names we have forgotten. A great literature exists in the contributions published during the past century by the members of the medical department of the old East India Company service and of the army in both the East and West Indies. I should like to awaken in your memories the names of Lind, Annesley, Moorehead, Pringle, Ballingall, MacGregor, Hillary, Waring, Cheevers, Parkes, Malcolmson, and Fayrer. Many did work of the very first quality with very little recognition at home or abroad. I sometimes think of the pathetic letters received from that splendid investigator Vandyke Carter of Bombay, the first in India to confirm the modern studies upon malaria in the early days when we were both working at the subject, how he spoke of his isolation, the difficulties under which he | tion of one of the world's greatest plagues, which has cost

struggled, the impossibility of arousing the apathy of the officials, and the scepticism as to the utility of science.

No one has expressed more deeply this sentiment of lonely isolation in the Tropics than Ronald Ross in his poem In Roile :-

"Long, long the barren years; Long, long, O Go 1, hast Thou Appointed for our tears This term of exile."

Few have been able to sing with him the psean of victory when he discovered the mode of dissemination of malaria through the mosquito-

> Seeking His secret deeds With tears and toiling breath, I find thy cunning seeds, O million-murdering death."

And the pathway of victory is strewn with the bodies of men who have cheerfully laid down their lives in the search for the secrets of these deadly diseases—true martyrs of science, such as were Myers, my friend and former assistant, Lazear (both of whom died from yellow fever), Dutton, and young Manson. Of them may fitly be sung in words from the noblest of all American poems, that in which Lowell pays a tribute to the young Harvard men who fell in the war of secession :-

"Many in sad faith sought for her,
Many with crossed hands sighed for her;
But these, our brothers, fought for her,
At life's dear peril wrought for her,
So loved her that they died for her."

As a result of 25 years' work we have an extraordinary volume of knowledge concerning the causes of most of the tropical diseases and the nature of the measures required tropical diseases and the nature of the measures required for their prevention. And yet when one considers the existing conditions it is safe to say that our task has scarcely begun. When we read in THE LANCET of Oct. 23rd that during the last four months of 1908 400,000 deaths from fever were reported in the property and that it is estimated that a fourth of the Punjab, and that it is estimated that a fourth of the total population of the province suffered from malaria, one realises the truth of such a statement. And yet the situation is one full of encouragement, particularly in connexion with the practical prevention of insect-borne diseases For centuries there has been a popular belief in the transmission of disease through mosquitoes and flies, and in the middle of the nineteenth century that remarkable clinician and anthropologist, Nott of Mobile, suggested the association between the mosquito and yellow fever and malaria. A more scientific presentation of the question was made by the French physician Beauperthuy, an enthusiastic student of the epidemics in the Spanish Main. But the first clear demonstration of a mosquito-borne disease was made by Manson in the case of filariasis. The whole story is told in a fascinating way in Sir Rubert Boyce's just issued work, "The Mosquito or Man: the Conquest of the Tropical World." The discovery by Laveran in 1880 of the parasite of malaria, the demonstration by Ross in 1897 of the part played by the mosquito in its transmission, have a greater significance for a greater number of persons than any single observations ever made in connexion with disease. Then followed in 1900 the demonstration by the American Army Commissioners, Reed, Carroll, Agramonte, and Lazear of the transmission of yellow fever by the mosquito.

Many scientific discoveries have afforded brilliant illustrations of the course to be followed in a modern research; but one is at a loss to know which to admire most, the extraordinary accuracy and precision of the experiments, or the heroism of the men, officers and rank-and-file, who carried them out, all the time playing with death and some of them paying the penalty. The conditions were favourable to the demonstration on a large scale of the practical value of the discovery. It was a fortunate thing that the head of the American occupation of Cuba was General Leonard Wood, himself a well-trained physician, and deeply interested in problems of sanitation. Backed by the military arm it took Dr. Gorgas and his colleagues nine months to clear Havana, which had been for centuries a stronghold of the disease. With the exception of a slight outbreak after the withdrawal of the American troops the city has remained free from yellow fever. What is even more important, in the great centres in South America, particularly in Rio, similar measures have been carried out with signal success; indeed, we may say that the possibility is in sight of the exterminamillions of lives and has at intervals interrupted the commerce of half a continent.

I mentioned yellow fever first because its history illustrates the importance of effective organisation. It has been an added merit to Dr. Ross's great merit that, like the fiery Peter of old, he has preached a ceaseless crusade in favour of organised effort against malaria. Everyone knows that the control of the Tropics is bound up with this disease, and it is a problem the practical solution of which will tax to the uttermost the organising capacity of the Anglo-Saxon. A singularly happy combination of circumstances has demonstrated on a large scale the efficiency of modern sanitary measures in one of the world's greatest death-traps.

THE STORY OF THE PANAMA CANAL.

In a general way the story of the Panama Canal is well known, but as I do not think an up-to-date version has ever been presented to the British public I propose to tell you in a few words a marvellous history of sanitary organisation. The narrow Isthmus, separating the two great oceans and joining the two great continents, has borne for four centuries an evil repute as the white man's grave. Silent upon the peak of Darien stout Cortez with eagle eye gazed at the Pacific. As early as 1520 Saavedra proposed to cut a canal through the Isthmus. There the first city was founded in the new world which still bears the name Panama. Spaniards, English, and French fought along its coasts; to it the founder of the Bank of England took his ill-fated colony; Raleigh, Drake, Morgan the buccaneer, and scores of adventurers seeking gold, found in fever an enemy stronger than the Spaniard. For years the plague-stricken Isthmus was abandoned to the negroes and the half breeds, until in 1849, stimulated by the gold fever of California, a railway was begun by the American engineers, Totten and Trautwine, and completed in 1855, a railway every tie of which cost the life of a man.

The dream of navigators and practical engineers was taken in hand by Ferdinand de Lesseps in January, 1881. For 23 weary years the French company struggled against financial difficulties at home and insuperable sanitary obstacles on the Isthmus. Little did the 19 Frenchmen, who reached Panama in January, 1881, think that the secret of success lay 7000 miles away with a young countryman of theirs, an army surgeon in Algiers called Laveran, unknown, solitary, unrecognised, who was quietly studying malaria in a military hospital in Algiers, doing work which alone could make possible the completion of their plans.

From the outset the chief obstacle proved to be the fevers. It is a sad record. Within seven months from beginning work the mortality had risen to the rate of 119 per 1000 for the month. As the number of employees rose, so in a certain measure did the death-rate, which reached the maximum in the month of September, 1885, in the appalling figures of 176.97 deaths per 1000. This would appear to be about the maximum death-rate of the British army in the West Indies in the nineteenth century. The average in Jamaica for the 20 years ending 1836 was 101 per 1000. At several stations it reached as high as 178 per 1000. But this is nothing to some of the seventeenth century records, which show that a regiment of 800 lost two-thirds of its strength in a fortnight. The maximum number of employees was in 1887 and 1888 from 15,000 to nearly 18.000. maximum mortality in these two years was 72.48 per 1000. Then for a period of eight or ten years the work lagged, and the total number of men employed annually was for many years under 1000; a large proportion coloured and the whites chiefly immunes. Only once in these years did the mortality rise above 133 per 1000, which was in the month of January, 1903, and this seems largely to have been due to an epidemic of small-pox. Yellow fever, malaria, and dysentery were responsible for the large proportion of deaths. From 1890 yellow fever practically disappeared, with the exception of a small epidemic in 1897. During the French occupation 6283 of the employees died in hospital, thousands died along the course of the canal; many thousands were damaged permanently in health, or died after their return to their homes. In Philadelphia in 1888 I had a telegram from a contractor asking what accommodation could be given in the hospitals for two ship-loads of workmen returning from the canal, the great

majority of them ill with malaria and dysentery. mortality had been very high as yellow fever had been raging. One of the ships came to Philadelphia and I do not remember ever to have seen a more appalling sight when these victims of chronic dysentery and malaria were landed; many were anæmic, others worn to the bone, and not a man of them had escaped serious damage. Not 50 per cent. of those who had gone out returned, and a very large proportion of those who landed in New York and Philadelphia died subsequently.

When in 1904 the United States undertook to complete the canal everyone felt that the success or failure was largely a matter of sanitary control. The necessary knowledge existed, but under the circumstances could it be made effective? Many were doubtful. Fortunately, there was at the time in the United States army a man who had already served an apprenticeship in Cuba, and to whom more than to anyone else was due the disappearance of yellow fever from that island. I know that to a man the profession in the United States felt that could Dr. Gorgas be given full control of the sanitary affairs of the Panama zone the health problem, which meant the canal problem, could be solved. There was at first a serious difficulty relating to the necessary administrative control by a sanitary officer. In an interview which Dr. Welch and I had with President Roosevelt he keenly felt this difficulty and promised to do his best to have it rectified. It is an open secret that at first, as was perhaps only natural, matters did not go very smoothly, and it took a year or more to get properly organised. Yellow fever recurred on the Isthmus in 1904 and in the early part of 1905. It was really a colossal task in itself to undertake the cleaning of the city of Panama, which had been for centuries a pest-house, and the mortality of which, even after the American occupation, reached one month as high as 71 per 1000 living. There have been a great many brilliant illustrations of the practical application of science in preserving the health of a community and in saving life, but it is safe to say, considering the circumstances, the past history, and the extraordinary difficulties to be overcome, the work accomplished by the Isthmian Canal Commission is unique. 1905 largely dealt with organisation, yellow fever was got rid of, and at the end of the year the total mortality among the whites had fallen to 8 per 1000, but among the blacks it was still high, 44. For three years with a progressively increasing staff which had risen to above 40,000, of whom more than 12,000 were white, the death-rate progressively

Of the six important tropical diseases, plague, which reached the Isthmus one year, was quickly held in check. Yellow fever, the most dreaded of them all, has not been present for three years. Beri-beri, which in 1906 caused 68 deaths, in 1908 caused only 38. The hook-worm disease, ankylostomiasis, has steadily decreased. From the very outset malaria has been taken as the measure of sanitary efficiency. Throughout the French occupation it was the chief enemy to be considered, not only because of its fatality, but on account of the prolonged incapacity following infection. In 1906 out of every 1000 employees there were admitted to the hospital, from malaria 821; in 1907, 424; and in 1908, 282. The mortality from the disease has fallen from 233 in 1906 to 154 in 1907, and 73 in 1908; that is to say, with a force more than a third larger in 1908 there were only a third the number of deaths that occurred in 1906. Dysentery, next to malaria the most serious of the tropical diseases in the zone, caused 69 deaths in 1906; 48 in 1907; and in 1908 with nearly 44,000 only 16 deaths. But it is when the general figures are taken that we see the extraordinary reduction that has taken place. Out of every 1000 engaged in 1908 only a third of the number died that died in 1906, and half the number that died in 1907.

The death-rate among white males has fallen to 3.84 per 1000. The rate among the 2674 American women and children connected with the Commission was only 9.72 per 1000. But by far the most gratifying reduction is among the blacks, the rate of which had fallen to the surpri-ingly low figure in 1908 of 12 76 per 1000; in 1906 it was 47 per 1000. A remarkable result is that in 1908 the combined tropical diseases—malaria, dysentery, and beri-beri—killed fewer than the two great killing diseases of the temperate zone, pneumonia and tuberculosis-127 in one group and 137 in the other. The whole story is expressed in two words.

¹ Maunsell, Jamaica branch of the British Medical Association, Proceedings, Year 3, No. 12.

effective organisation, and the special value of this experiment in sanitation is that it has been made, and made successfully, in one of the great plague spots of the world.

In Italy, in India, in many parts of Africa, and in the United States the anti-malarial campaigns are being pushed with the same vigour and success, but time will not permit me to dwell upon any of these or upon the brilliant success which has followed the work of Bruce and his colleagues in clearing Malta of Malta fever, but I must stop to refer briefly to certain dark shadows in the picture of tropical medicine. Within ten years the investigations in Africa have shown the wide prevalence of formidable diseases of animal and man, unknown or previously but imperfectly known. The knowledge of the group of diseases caused by the trypanosomes has added terror to tropical life. The dreaded sleeping sickness which now extends over some million of square miles is one of the serious problems of life in Africa. A vigorous plan of campaign has been instituted, and already in Uganda, as the Governor's report shows, there is a steady diminution, and no whites have been attacked since 1906. The public will find in Boyce's book the whole story of the relation of tropical diseases to flies and insects, and this most timely contribution should help to call attention to the medical problems of the tropics and the supreme interest to the nation of these new maladies. And there is another dark spot in our story.

THE RECRUDESCENCE OF PLAGUE.

Certain epidemic diseases are very much like the fabled "Hydra," from which so soon as one head was cut off another sprang up to take its place, or what is just as bad grew Even the eternal watchfulness which safety demands is not of any avail against the workings of nature when we do not understand her laws, and when we are face to face with certain mysterious phenomena, the sweep of whose orbit we have not yet measured. Geologists tell us of epochs when there must have been a wholesale destruction of certain types, possibly by disease. More than once within historic days it must have seemed as if the very existence of the race was threatened, so vast and overpowering had been an epidemic invasion. No disease had so shaken the foundations of human society as the plague, which in the second century and again in the thirteenth has shown a capacity for wholesale destruction not shared by any other. In reading the Abbé Gasquet's picture of the effects of the great pandemic of the thirteenth century one gets the impression of the loosening of an irresistible cosmic force which swept like a tornado over the earth, leaving it desolate and almost uninhabited. We have traced the orbits of the planets, and the advent again of Halley's comet shows us how fully we understand the stars in their courses, but these are mechanical things, the laws of which are plain and legible in comparison with the many and as yet insoluble problems of life. One of these relates particularly to the extraordinary reappearance or recrudescence of certain epidemic diseases. 20 years ago when one spoke of the plague memories were recalled of the history of Athens in the days of Pericles, of Rome in the days of Marcus Aurelius, of the great pandemics of the Middle Ages, and then of the dwindling smaller epidemics of the sixteenth, seventeenth, and eighteenth centuries. But to the profession and to the world at large the plague was a closed book. A few knew that it lingered in certain centres, but none dreamed that it would again burst like the comet into our orbit. There was a certain fitness that it should have started on a world mission of destruction at Hong-Kong, the port which boasts the largest and most world-wide tonnage. When one considers the dynamic energy of the plague, its powers of resistance, its terrible killing capacity, exceeding all known vital forces, who can doubt that had its advent been in the middle instead of at the end of the last century civilisation might have had to face again the prospect of destruction. With slow delibera-tion since in 1894 it started in Hong-Kong it has reached 52 countries in every district of the world (J. M. Eager).

The outbreak in India, which began in 1896, has shown that under suitable conditions the disease has lost none of its old malignancy. With the exception of a slight decrease in the years 1900 and 1906, there has been a constant annual increase in the number of deaths, the total amounting now to between 6.000,000 and 7,000,000. On the whole, in other

prevalence during 15 years the total mortality cannot be said to be excessive. The two serious features relate to the difficulty of enforcing successful measures in India, and the extraordinary tenacity it has displayed in spite of the most vigorous measures for its total suppression. It is not without significance that at Glasgow, where there were small outbreaks in 1900 and 1901, two cases occurred in 1907 which could not be traced directly to shipping. Lucretius says, in describing the great plague in Athens: "Appalled and doubtful mused the healing Art"; but we have made a great step in our knowledge of the means of its dissemination, and though we may well be appalled at the virulence of the disease in India, we have no cause to doubt the efficacy of the machinery which is keeping it in check all over the world. As an offset to the dark picture, India is the very country above all others in which the health of the European has progressively improved. The army statistics show an extraordinary reduction in the death-rate from typhoid fever, dysentery, and from malaria. Lord Kitchener remarked the other day that the improvement of the English troops in India in the past 10 years was equivalent to adding 2000 men to the strength of the army.

PLAN OF CAMPAIGN.

I have indicated briefly to you the pressing necessity to take up the heavy burden of securing health in the tropics. To make our knowledge effective, to make it as effective as Dr. Gorgas has done at the Isthmus of Panama, as Ross has done at Ismailia, is the problem which to day confronts us. Enough has already been accomplished to indicate a successful plan of campaign. Two things are necessary. First, organised centres from which the work may proceed; a model of this sort is the "Sleeping Sickness" Bureau under the auspices of the Royal Society. The work which it has done and which is under progress shows the value of central organisation. Similar central bodies have already dealt with plague and malaria, but these organisations should be placed on a permanent basis and unified in some way under a central Tropical Institute, the different departments of which would be in touch with its workers all over the

How fascinating to stand at the window of the Norddeutscher Lloyd's office in Charing Cross and see the chart of the position of every ship of their great fleet as it plies the seas of commerce, and one turns away with a tribute of admiration to enterprise and organisation. Given two not unattainable features, an Imperial Tropical Institute and strong affiliated schools, the health side of the burden of Empire might be undertaken with a staff of highly trained workers who could be sent hither and thither, wherever there was a disease to be investigated or a pest-hole to be cleared up. map would show one hundred or more expeditions planted in India, Africa, and America, all like the Lloyd's ships, a testimony to organisation and enterprise. And this is no vain dream. By far the most useful work in British medicine during the past 20 years has been the result of just these carefully planned expeditions, sent out, partly by the liberality of the citizens of Liverpool, particularly Sir Alfred Jones, and partly as commissions by the Government and by the Royal Society. Not only have they added enormously to our knowledge of tropical diseases, particularly of plague, Malta fever, and sleeping sickness, but they have demonstrated the necessity of working at these diseases in the regions of their prevalence. It is not too much to say that the reports of the Liverpool School and of the Royal Society and the Government commissions are among the most valuable contributions made of late in this country to scientific medicine. More than this, there has in consequence taken place an extraordinary awakening of the profession to the importance of tropical disease, societies for its study have been organised in different countries, an International Society has been formed, special journals founded, at large seaports hospital wards devoted entirely to tropical diseases have been opened, and lastly schools for the study of tropical diseases have been organised. And here I come to one of the great factors in securing proper sanitation in the tropics-suitable provision for the training of workers. The country may feel a just pride in the schools which have been started in the two great seaports of the nation. In the hands of Ronald Ross and Rubert Boyce the Liverpool school, founded 10 years ago by countries it has been held in check, and for so pandemic a Sir Alfred Jones, has had a career of exceptional vigour.

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Backed by the citizens, and particularly by those princely souls Sir Alfred Jones and Mr. William Johnston, and with the cooperation of the University of Liverpool, it has drawn students and investigators from all parts of the Empire and from foreign countries. As an indication of its vitality I may mention that the school has already despatched 21 research expeditions to the tropics. And I am told that the entire "plant" of the school and the cost of the expeditions have been less than £75,000, a very modest sum considering the results. Started just 10 years ago by the wise support of Mr. Joseph Chamberlain, who will always be gratefully remembered as the statesman who taught us to think tropically, this school has had the great advantage of the guidance and the prestige of the name of Sir Patrick Manson, the dean of all students of tropical medicine. To him more than to any one man we owe the strong position occupied by the subject to-day in Great Britain. You have been singularly fortunate in securing a staff of teachers well known for their researches in tropical medicine, such as Sandwith, Simpson, Duncan, Cantlie, and Sambon, a director of such unusual experience as Daniels, and such well-recognised authorities as Leiper and Wenyon on helminthology and parasitology. In the heart of the Empire, in its richest and largest city, to which all the world pays tribute, one naturally expects a foundation commensurate with its advantages and responsibilities. With the aid of the Government and a few liberal friends a good start has been made and the school has taken a strong position among the educa-tional institutions of the country. In the short time of its existence, it has trained nearly 1000 men for work in the colonies and dependencies, it has fostered original research in tropical diseases, and it has been an important centre for the diffusion of scientific knowledge. Need I dwell upon its peculiarly fortunate situation in the very midst of the commerce of the world, where sailors from every region congregate, bringing with them the diseases peculiar to their homes. The possibilities exist for the greatest of all schools of tropical medicine if London will but rise to the occasion. Liberal and encouraging at the outset, the Government has taken the usual course and has thrown upon the public the chief responsibility for its support. After reading a statement of the finances of the school furnished by the secretary, I am astonished that so much good work has been done with so meagre an endowment. Only the self-sacrificing devotion of the staff has enabled the school to achieve its marked success. I am sorry to have to say that neither the City of London as a corporation, nor its rich guilds, nor its citizens have contributed to the cause as might have been expected. The total expenditure on the school has been less than £40,000, a sum not more than sufficient to endow one department. As we all know, the extraordinary demands upon London are met in a way that makes it the centre for all beneficent enterprises. For church missions alone millions are contributed annually. It is not too much to ask for rich endowments for the missions of science.

I have tried to indicate the position which the new crusade occupies in the work of the nation, a work coördinate with, and almost of the same importance as, that of maintaining order. We cannot expect much more from the Government, which throws the onus of endowment upon private hands, but it makes the struggle hard when we come into competition with the Government-supported institutions of other countries. London, which should be the centre of the Empire, not alone commercially but in every relation, cannot be said to have kept pace in science with modern demands, and it has never realised its imperial position for post-graduate study. It is not a good thing for the Empire to find that so many of our young men who come from overseas for work slip away to the continent where they find conditions more favourable and better organised. It is not the sort of impression which one would like to have taken away from the Imperial capital.

This great question of tropical sanitation, in which we have only made a start, is bound to loom in larger and larger importance. Of the nations, England has the heaviest responsibility, as the figures I have quoted show, but she has the advantage of the first start and of strongly ingrained national ideas on the value of health. not too late to seize the opportunity. The United States, Germany, France, Holland, and Japan are in the field. Now is the time for new enterprise and a more complete organisation. That the Government is friendly and begins to realise the importance of the work is evident in the

appointment of an entomological commission; but this is a vast and complicated problem which needs an organised effort on the lines I have indicated. An Imperial Institute would represent the general staff of an army of sanitation, the expeditionary forces of which could concentrate at any place and could be used for investigation, education, and supervision. Each unit would represent the staff of one of Dr. Gorgas's 17 divisions of the Panama Canal Zone and would take hold of an insanitary district and leave it pest free. Affiliated and ancillary would be the two schools which would serve as training colleges for investigators and sanitary administrators. Take, for example, this school. If I were Minister for tropical dependencies and a friend of a Chancellor of the Exchequer with a big balance, I would first establish six professorships, two of tropical medicine with a hospital of 200 beds, a good clinical laboratory, and a system of graded associates and assistants; a professor of pathology with a separate institute—and the model of the new one at Leipsic would be thought good enough; a professor of protozoology; a professor of helminthology; a professor of entomology-all of whom would have earte blanche for their latoratories, museums, and libraries. I would establish subsidiary schools in the tropics, in West Africa, Uganda, and India which would serve as centres for the mission work in those countries. By no means a visionary scheme, and well within the possibility of achievement, it would not demand an endowment of more than a couple of millions. Once get the intelligent business men to take up this as a business scheme in the interests of the whole Empire, and they will not, as they never have in the past, shirk their duty, but in slow and steady streams of a few thousands now and then, in big rushes, let us hope, of a hundred thousand now and again, the necessary amount will be made up.

Is it likely that the white man can ever thrive in the tropics except as a sort of exotic, as he is at present in the West and East Indies? As the nations of the north and south increase and multiply, doubling every century, will he find an outlet by settlement in the tropics, or will he simply use them as Rome did Egypt, as a granary? It cannot be said that so far the European has been a success as a settler in the tropics, since no white colony has ever prospered below 30 degrees of northern latitude, but has he ever had a chance? In contact with brown and black races, which have become inured to heat, tolerant of parasites, and more or less immune to the worst of the tropical diseases, he has so far never had an opportunity to show of what he might be capable when placed in really sanitary surroundings. The 8000 whites now at the Isthmus work eight hours a day in the burning sun, and they with their wives and children thrive and enjoy a health quite as good as dwellers in any town in the United States. Heretofore man has never met nature on equal terms; now science has taught him how to be master, but the knowledge is so new and so recently made effective that we have not the data from which to make a clear judgment. How far the introduction of tropical diseases has accounted for the decadence of Greece has been discussed by W. H. S. Jones and Ronald Ross, who seem to have made out a good case, but given a white race living in the tropics for two generations, and free from malaria and parasitic anæmia, would it show the hardy vigour at present the characteristic of the Anglo-Saxon? Time alone will tell. Personally I doubt it. Man is a lazy animal, and the best thing that ever happened in his history was when Adam's wife ate the apple and they both were turned out of a tropical Eden to ean their bread by the sweat of their brows. As Sir Charles Dilke has remarked, the banana is the curse of the tropics, and when have ever "the blossom-fed Lotophagi" done anything for the race? The most successful attempt has been in the English West Indies, but commercial conditions have been adverse, and to-day the negro may be said to possess the islands where the white man lives it is true, but hardly thrives. No, it has been found in the past, and it will be found in the future, that the men of mettle, the men who have made the world their Odyssey, have been reared in Ithaca's rugged Isle "of hardy youths a nurse of name." is good for man to have the "rebuff that turns earth's smoothness rough." and this is not what he gets amid the fascination and fertility of the tropics, which, as Homer says, breeds-

> Of proud-lived loiterers that never sow Nor put a plant in earth, nor use But trust in God for all things."

When Isaiah was discussing the burden of Babylon, the burden of Tyre, and the burden of Egypt, I wonder what he would have said could his prophetic eye have glanced at the map on which is depicted the burden of the British Empire. Surely no nation in history has ever had such a load of responsibility. But fit as it has been in the past it will ever be fit so long as salus populi remains suprema lex. It only behoves us to see that we are well equipped for the second great task—the task of the future, to give to the teeming millions of our dependencies that greatest of all blessings in life, good health.

A Necture

AN IMPROVED METHOD OF REMOVING THE TESTICLE AND SPERMATIC CORD FOR MALIGNANT DISEASE.

Delivered at the Middlesex Hospital

By JOHN BLAND-SUTTON, F.R.C.S. Eng., SURGEON TO THE HOSPITAL

GENTLEMEN, -Tradition plays an unconscious part in the acts of the most unconventional surgeon. This is the only explanation I can offer concerning the universal practice among surgeons when performing the ancient operation of castration for malignant disease of the testis, in allowing their efforts to be limited by the internal abdominal ring.

The immediate risks of orchidectomy for malignant disease

under modern conditions are trifling. The remote results are most discouraging, for within a few months, in the majority of instances, the disease returns in the stump of the spermatic cord (recurrence); or the lumbar lymph glands become infected with cancer and form huge masses in the abdomen (direct lymphatic infection); or secondary nodules appear in various parts of the body (dissemination). It is undeniable that the modern method of extirpating the primary growth, the associated lymphatics, and the lymphglands (or nodes) in dealing with cancerous organs has greatly improved the remote results of operations designed for the relief of cancer. This is manifest in the case of the breast, the lips, and the labia. As far as I know no one has attempted to apply this method in the operative treatment of malignant disease of the testicle. I determined, when a suitable case came under my care, to remove the testis, the spermatic cord, with its arteries, veins, and lymphatics, and the associated lymph-glands which lie on the inferior vena

In September, 1909, a man, 31 years of age, consulted me on account of an enlarged right testicle. The increased size of the organ, its weight, and non-translucency indicated clearly that the organ was attacked by malignant disease. The enlargement was obvious in February, and had been progressive. The left testis was retained in the inguinal canal. The patient readily submitted to any measures which promised him relief. After due preparation the following operation was performed at the Middlesex Hospital.

The scrotum was freely incised and the right testis was exposed. I then introduced the scalpel into the testis to satisfy myself that the enlargement depended on a growth. The testis was freed from its investments and the spermatic cord was isolated as far as the internal abdominal ring. After much of the loose scrotal skin had been removed, the bleeding vessels were ligatured with fine silk, and the testicle was enveloped in a fold of sterilised gauze. Up to this point the operation had been conducted with hands enclosed in sterilised rubber gloves; these were removed and the hands were carefully washed for the second stage.

This consisted in making a free incision of the right abdominal wall in the line of the linea semilunaris from the costal arch to the opening in the inguinal canal. The incision divided all the structures of the anterior abdominal wall down to the peritoneum. peritoneum. Gentle tension on the testicle soon showed the position of the spermatic vessels lying in the loose areolar subperitoneal tissue. In order to isolate them they were surrounded by a thin silk ligature just before their

The vas deferens and its termination in the vena cava. artery were ligatured and divided at the brim of the pelvis. I then detected a hernial sac lying in relation with the spermatic cord; its neck was encircled with silk and the pouch was removed with the cord and testicle. At this stage the retroperitoneal tissues of the right lumbar region were well exposed and this enabled me to examine the parts about the aorta and search for enlarged lymph-glands. I found one on a level with the third lumbar vertebra, lying on the anterior face of the vena cava; although as big as a haricot bean it shelled out easily. A very careful search was made for other lymph-glands but without success. In spite of the large area of tissue opened up there was very little loss of blood, and the only vessels, apart from the spermatics, which required to be ligatured were those divided in the scrotum and in the abdominal wall. The abdominal incision was closed by means of interrupted silk sutures, and the cut edges of the scrotum were brought together by sutures of thin silk. It was thought to be prudent to insert a narrow rubber tube into the depths of this extensive wound for 24 hours. The wound was dressed with sterilised gauze and Gamgee tissue, held in position by a many-tail bandage, reinforced in the inguinal region by a spica bandage. Afebrile healing followed, with a rapid convalescence. The patient left the hospital on the seventeenth day after the operation.

The parts removed were hardened in equal parts of methylated spirit and water. The enlarged lymph-gland was prepared for microscopical examination by Mr. Somerville Hastings, and we were surprised on looking at the sections to find that they contained cystic spaces lined in some sections with columnar or sub-columnar epithelium. In a few it was stratified. This, of course, indicated the nature of the primary growth. Ten days after the operation I divided the testis and found a cystic tumour occupying the space between the epididymis and the body of the testis. The secreting tissue, compressed into a thin stratum, formed a

strap over the upper pole of the tumour.

On microscopical examination the tumour presented the usual characters of its class, inasmuch as it consists of a complex arrangement of intercommunicating tubules embedded in a richly cellular connective tissue stroma, presenting, here and there, cylindrical knobs of hyalin cartilage. In some parts of the stroma, strands of tissue very like unstriped muscle tissue were seen. The tubules were lined with epithelium, which in some of them was stratified, and in others columnar in shape. When the structure and epithelial lining of the tubules in the primary tumour were compared with the cysts in the lymph-gland removed from the loin the identity was complete. This is sufficient proof of the malignancy of the tumour which, in its microscopic, as well as in its general, features, might easily be regarded as an innocent species. I have devoted much time during the last quarter of a century to the study of the secondary deposits of malignant disease, but no better example of the detailed reproduction of the structural features of a primary tumour has come under my observation than the cystic growths which we found in the lymph-gland of the man the subject of these observations.

CYSTIC DISEASE OF THE TESTIS.

Our knowledge of these remarkable tumours was greatly increased in 1853 by Curling; he named this condition "general cystic disease" of the testis, and pointed out two of their most important features namely, the frequent presence of hyalin cartilage in them and the fact that such tumours are situated between the epididymis and the testisproper. As the tumour increases in size it squeezes the secreting tissue of the gland and flattens it out till it forms a thin stratum over its upper pole. (Fig. 1.) This led Curling to believe that such cystic tumours arose in the rete testis; his observations have borne fruit and have led several investigators to take an interest in them. There are three kinds, or species, of tumour which arise in the tissues between the epididymis and body of the testis. In their type forms they are quite distinct and receive specific names : (a) adenoma testis; (b) cystic disease of the testis; and (c) dermoid or teratoma of the testis. In their intermediate forms they run one into the other and examples occasionally come to hand in which the characters of all three are

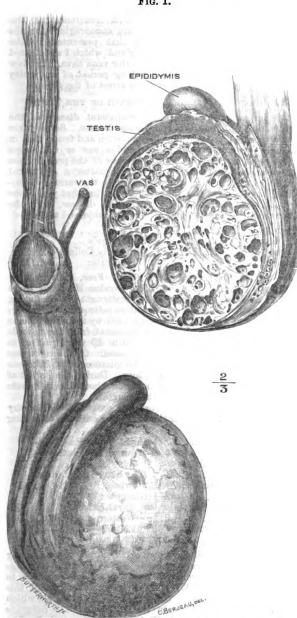
The adenoma testis in its typical form is a solid tumour;

it is composed of tubules formed of epithelium with a narrow central lumen. The epithelium in the specimens I have examined resembles the epithelial cylinders which are often found in the renal sarcomata of infants, but in testicular adenomata the epithelial cylinders often lie juxta-posed without the intervention of connective tissue. Tracts posed without the intervention of connective tissue. of cartilage are sometimes present, whilst here and there in some apparently completely solid tumours, cysts due to the dilatation of the tubules, are seen in the sections.

some notion of its rarity it may be mentioned that specimens of the adenomatous and the cystic species exist in all the pathological museums attached to the medical schools of the metropolis, but there are only three specimens of testicular dermoids containing hair. There is one at the Royal College of Surgeons of England, one at St. Bartholomew's Hospital, and one at St. Mary's Hospital.

During the last 30 years four examples of testicular dermoids have been reported by Englishmen-namely,

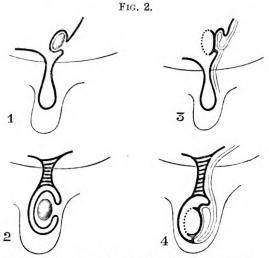




A testis with the spermatic cord and the spermatic vessels. removed by operation from a man 31 years of age. A hernial sac was removed with it. The testis is shown in section. A cystic tumour has grown between the body of the testis and its epididymis. The secreting tissue of the testis is flattened over the upper pole of the tumour.

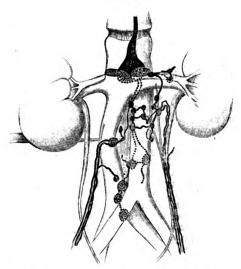
The cystic form is well illustrated by the specimen repre sented in Fig. 1. It differs from the adenomatous species in that the epithelial cylinders are dilated and the lining epithelium has become altered in shape in response to the pressure exerted by the accumulated fluid within the tubule.

The dermoid or teratomatous species is as striking in its general naked-eye features as the cystic form, for it contains hair and often teeth. It is, however, in its most developed form the rarest of all tumours of the testis. In order to give



A series of diagrams to show the old and the new view of the peritoneal relations of the testis. Diagrams 1 and 2 represent the peritoneal relations of the testis during and after its descent as usually taught. Diagrams 2 and 3 illustrate the Hoffmann-Frankl view in which the body of the testis is shown as an intraperitoneal organ (after

Fig. 3.



A diagram showing the position and relations of the lymph-glands associated with the testes. The results were obtained by means of fine injections. (After Most.)

D'Arcy Power, 1887; Jackson Clarke, 1896; Kuhne, 1908; and the writer. The sources of these testes are interesting, for Clarke's specimen was removed from a Hindu boy by Lieutenant-Colonel G. M J. Giles; my specimen was removed from a Chinese lad at Hankow by Dr. R. T. Booth; and Kuhne's specimen was obtained from a Chinese boy, aged 4 years, at Tungkau. Recently another specimen has been obtained in London which I trust will soon be described.

We have in these three species of tumour a very natural genus, Testicular teratomata. In their type forms they present clearly defined characters, but in the intermediate forms they run gradually one into the other, and the dermoid or teratomatous species contains all the structures which are found in the solid and the cystic forms. Moreover, the mode of origin of these tumours in the tissues, between epididymis and testis proper, constitutes a very striking common feature independently of the histological evidence concerning the similitude of the peculiar structures which form so much of their bulk.

Embryologists have by no means been idle, for they have investigated the nature of the tissues in the vicinity of the rete testis, and have succeeded in detecting feetal vestiges connected with it. Some interesting observations have been made by Frankl (supporting those made by Hoffmann as long ago as 1870), which show that the outer covering of the testis is similar to that of the ovary, inasmuch as it consists of involuting germ epithelium. Moreover, we have now to appreciate the fact that our notions of the relations of the testis to the peritoneum must be changed. The body of the testis is an intraperitoneal organ (Fig. 2) like the ovary; the idea that it slips behind the peritoneal fold of the funicular pouch to be invested by it must be abandoned. The epididymis is covered with peritoneum and the limit of the peritoneal investment is obvious to the naked eye, corresponding to the white line detected by Farre on the ovary.

LYMPHATICS AND LYMPH-GLANDS.

One of the most prominent clinical features of carcinoma of the testis is the rapidity and extent of the lymph-gland infection. The great size which the lymph-glands lying in the neighbourhood of the abdominal acrta and the inferior vena cava attain in some patients is truly astonishing. The lymphatics from the testis traverse the spermatic cord (they vary in number from four to six), and accompany the spermatic veins without receiving tributaries from the tissues around them. They have no communication with the lymphatics of the scrotum and this sufficiently explains the absence of enlarged glands in the groin when the testicle is cancerous, unless the tumour has implicated the skin of the scrotum.

Most made a careful study by means of fine injections of the lymphatics and lymph glands associated with the testis, and the results of his investigation are represented in Fig. 3. Here the lymph-glands and lymphatics belonging to the testes are represented in complete outlines. Those belonging to other organs and tissues are dotted. picture is a combination of two injection-preparations: the right side represents the results obtained by injecting the right testis of a newborn infant. After filling the lymph-vessels of the spermatic cord two lymph-glands were found on the inferior vena cava. The upper gland communicates with others lying in the connective tissue behind the vena cava; one of the lymph-vessels leads to the receptaculum chyli (cisterna chyli). The left side represents results obtained by injecting the spermatic lymphatics of a boy 4 years of age. Several glands appear in relation with the aorts, and two of these communicate with the cisterna by a lymphatic lying behind the great blood-vessel. A third communicated with the cisterna by a vessel running over the anterior face of the renal vein. The cisterna chyli and the thoracic duct were quickly filled with injection fluid up to its termination in the vein. On both sides lymph glands lying near the kidney and behind the aorta and the vena cava were filled by a retrograde flow of the injectionfluid. This is a matter of importance because cases occur in which malignant tumours of the testes lead to enlargement of the lymph-glands from the fifth lumbar vertebra to the root of the neck. It is the intimate association with big blood-vessels which is the chief obstacle to the surgical removal of these cancerous lymph-glands. In the case which forms the subject of this lecture the position of the enlarged lymph-gland which I removed is accurately indicated by the upper of the two lymph-glands lying on the inferior vena cava.

The fact is clearly recognised by surgeons that the infection of the abdominal lymph glands paralyses their efforts in the effective treatment of many malignant tumours of the testis. Some surgeons (including K other and Roberts) have been enterprising enough to attempt to extirpate the retroperitoneal lymph-glands when they have formed huge lumps subsequent to the removal of the testis. Such efforts have rarely been successful, but Foulerton gives the details of a case in which a man aged 28 years had his left testicle removed in India on account of a malignant growth

described as an "adeno-sarcoma." Two years later he was admitted into the Middlesex Hospital on account of a tumour in the left side of the abdomen. In March, 1895. this mass was removed by Sir Henry Morris; it consisted of enlarged encapsuled glands which contained numerous small cysts. On microscopical examination the structure of these masses resembled that presented by the "general cystic disease" of the testis we have been considering, cystic spaces lined with epithelial cells forming a conspicuous feature of the sections. This man recovered from the operation and reported himself in July, 1896. He was in a hypochondriacal condition, but a careful examination failed to disclose any evidence suggestive of a recurrence of the disease. The details of this case are encouraging, for the histological picture accords with that presented by the sections obtained from the lymph-gland which I enucleated from the anterior surface of the inferior vena cava. In view of these facts one may look for a long period of immunity for my patient, if not for a complete arrest of the disease.

FREQUENCY OF MALIGNANT DISEASE OF THE TESTIS.

It is important to realise that malignant disease of the testis is, on the whole, an uncommon disease. Some years ago I attempted to determine this question and found that in the large general hospitals in London one or two cases represented the yearly average. In view of the present case I have made an attempt to give the matter a statistical foundation by collecting the returns from the various metropolitan hospitals for the year 1907. During that year there were 12 testes removed for malignant disease, and the distribution of the cases is shown in the subjoined table:—

London		3	Guy's		1
St. Bartholomew's		2	St. George's	•••	1
Great Northern		2	University College		1
Charing Cross	•••	1	Westminster		1

At the Middlesex, Cancer, Royal Free, St. Peter's, St. Thomas's, St. Mary's, and West London Hospitals there were no cases of orchidectomy for malignant disease during 1907. These results as to the relative infrequency of malignant disease of the testis are supported by the observations of Russell Howard. This surgeon gathered from the records of the London Hospital for a period of 20 years ending in 1907 references to 65 cases of this disease. Of these, he was able to verify the diagnosis by the microscope in 57 cases and to obtain a good clinical history. During the period of 20 years in which these cases occurred about 110,000 male patients had been admitted to the hospital.

For comparison with these results I extended the inquiry to some important towns for the same year with the following

Queen's Hospital, Birmingham 4	1	Royal Victoria Infirmary, Newcastle-on-	
Royal Infirmary, Liver-	•	Tyne	3
pool 1	L	Royal Infirmary.	_
General Infirmary,		Bristol	1
Leeds 2	2	Glasgow:	
Royal Infirmary, Man-	-	Royal Infirmary	0
chester 2	3	Western ,,	0
Royal Infirmary, Edin-	- 1	Victoria ,,	
burgh 4	1		

Malignant disease of the testes occurs in infants and young boys; it is happily a rare disease. Mr. Somerville Hastings obtained the returns from ten hospitals for sick children in London for the year 1907. There were no examples of this disease during that year. The names of the hospitals which furnished returns are given in the following list:—Belgrave Hospital, Queen's Hospital, East London Hospital, Evelina Hospital, Cheyne Hospital, Paddington Green Hospital, Victoria Hospital, Grosvenor Hospital, Great Ormond-street Hospital, and Royal Waterloo Hospital.

It is not my intention to obscure the theme of this lecture by an academic discussion on the vexed question of the nature of the morbid growths which arise in the testis. The results hitherto obtained by the ancient and simple method of castration (or orchidectomy) as a means of relieving men afflicted with malignant disease of the testicle are notoriously bad; it is therefore time that efforts were made to treat these conditions on the radical lines now universally practised in regard to cancer of other external organs, notably the lips, the breast, and the labia. This consists in the wide extirpation of the area primarily affected, and the complete removal

of the associated lymphatic area and lymph-glands. The details of the operation described in this lecture show that the "radical method" is applicable to the testis, and I venture to hope that other surgeons who have the opportunity of dealing with such cases will carry out this method, and keep the patients under observation for a sufficient period to enable us to gather evidence wherewith to judge of its merits.

its merits.

Bibliography.—J. Bland-Sutton: Archives of the Middlesex Hospital, 1903, vol. i., p. 19. J. J. Clarke: A Dermold Tumour of the Testis, Transactions of the Pathological Society, 1896, vol. xlvii., p. 148. A. G. R. Foulerton: Chondrifying Sarcoma, Archives of the Middlesex Hospital, 1905, vol. v., p. 234; THE LANCET, Dec. 23rd, 1905, p. 1827. Frankl: Einiges über die Involution des Scheidenfortsazes und die Hüllen des Hodens, Archiv für Anatomic und Entwicklung, 1895, p. 339. Berry Hart: The Nature and Causes of the Physiological Descent of the Testes, Edinburgh, 1909. Russell Howard: Malignant Disease of the Testes, Factitioner, 1907, vol. lxxix, p. 794. J. E. Kuhne: Rare Tumour of the Testicle, The China Medical Journal, 1908, p. 79. Most: Ueber maligne Hodengeschwüste und thre Metastasen, Virchow's Archiv, 1894, Band cliv., p. 138. D'Arcy Power: A Dermoid of the Right Testis, Transactions of the Pathological Society, 1877, vol. xxxviii., p. 224. J. B. Roberts: Excision of the Lumbar Lymph Nodes for Malignant Disease of the Testis, Annals of Surgery, 1902, vol. xxxvii., p. 539.

TYPICAL AND FRACTIONAL PNEUMONIA.

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A DISEASE is a series of symptoms, normal and abnormal, recurring in a certain species or genus with fair uniformity; not with identity, for even in health no two individuals are, or ever have been, identical, but with fair uniformity. To compass this uniformity, external causes must be fairly uniform, and the structure of the individuals likewise fairly uniform; though, again, in none of these aspects is there identity. If, the specific causes being constant, the individual be of another kind, if this side of the equation be thus varied, the issue will be a different form of disease. But it is no less evident that, as between individuals of the same kind, and again between different kinds, there are infinite gradations, so in disease the gradations are also infinite.

There are in nature, then, no compartments; for our own erigencies we fabricate classifications and Nature smiles at them, going her own way. These classifications are arbitrary; they are conventional devices to meet the finite faculties of man. If, after the French manner, we make them precise, we miss the complexity of nature, we try to gather the wind in a net; if, after the "Celtic" manner, we try to embrace the infinite we are lost in the vague. So we vacillate between the lucid and the incomprehensible, between the concise, which lets slip the finer issues but makes argument hard and brilliant, and the illimitable, for which our apprehensions and our language are alike too rudimentary. In labelling diseases, then, we shall not forget that these processes observe no precincts, and recur with only fair uniformity.

In the simplest organisms disease must be simple: creature must fall ill all ways at once. As we ascend the ladder of organisation organs are segregated, taking on more and more specific though in our experience never absolutely peculiar qualities. So likewise their perturbations must become various; they must run more and more along particular lines or issues of function; though, as the organs are not absolutely specialised, but still in various degrees can supplement each other, and this again very variously in several individuals, so in the correlative paths of disease we shall see never more than a fair uniformity, but yet more and more uniformity as we ascend the ladders of organisation, as functions are more and more segregated, and as the creature in health works more and more along many differentiated lines. The idea of the diseases possible for any particular creature is then contained in the idea of its diversified paths of function, and is as simple or as complex

Again, as in aid of classification we construct for normal functions a series of types, so we do for diseases, which run along the same more or less delineated paths, and are indeed the shadows of the several functional segregations, for which also we construct Types. And the Types are as arbitrary as the Classes: they are go-carts for the infant observer. Taking

clinical experience as our guide, we call to remembrance the cases of a certain disease in our own experience, and consult the records of the experience of others concerning it. Thus we discover that, although perhaps every symptom taken singly may be found in other, probably in many other, processes, yet in those many processes they are collected in as many different degrees of density. Some very few may indeed be almost singular—"pathognomonic," as we say—but these are admittedly few; if closely scanned, perhaps elusive. Speaking generally, the contrasts of disease lie in the areas of relative density of certain symptoms which are by no means, when taken severally, peculiar to any one of them. Among a hundred cases of pneumonia, let us say, we find many in which the symptom of tubular breathing, or of dulness of percussion, is absent, yet upon the whole the frequency of either or both of them is very high; that is, if for the hundred cases we plot out these two symptoms by stars upon a chart, we shall find the density of either or of both to be very thick. In some other diseases they would prove, it is true, to show also some density, but the differentiation (the diagnosis) would then appear on a comparison of the densities of companion symptoms. Furthermore, by making a survey of a large number of cases of a certain disease thus plotted out we should be enabled, by observing, selecting, and assembling those symptoms which proved to be of considerable density, to build up a scheme of it. This, as we have admitted, would be an arbitrary process, because in the selection we should have to neglect many margins and gaps; still, on the whole by this abstraction, or paradigm, from an adequate number of records we should find it possible, as it is possible in other spheres of thought, to construct an ideal, an imaginary picture, like that of superposed photographs, of the disease under our study. This figure is the Type; and, as on conscious or unconscious reference of each subsequent case to this ideal form we note its approximation or its divergence from this, so we speak of the cases as "typical," or as "aberrant," or even as "atypical"—that is to say, lying outside any Type. These last cases which "prove the rule" are often crucial instances, and by their very deviation may point out to the vigilant observer some deeper or cross affinity previously unsuspected.

The Type is then the ideal case which never was in bed or book; like the Class it is a mental concept in each of us, one on which we agree in so far as men's various minds in that respect are in harmony. To give real existence to these concepts of class or type, to call such an abstract idea an entity—i.e., a being—is a return towards demonology. The only entity is the particular patient under observation.

Now to return to pneumonia: a mental picture or type of it has been thus manufactured by collecting from a large number of cases the relative densities of the recorded symptoms; and amongst these we find the most frequent to be ain, fever, dyspnœa, cough, a peculiar expectoration, &c. We will call the number of symptoms or features included in the type—a somewhat arbitrary number, as we have seen, for at the edges we may heritate which to take in or to discard—this number we will call n. And we may represent the constituent symptoms by the previous letters of the alphabet, by a, b, c, d, e, and so forth. But as no case accomplishes our ideal concept of the Type, we shall find in each that a few or a many of these letters drop out. They do not, however, drop out, and this is one of the points I would emphasise—they do not drop out casually after a scattered, haphazard fashion, they stop out in little united or confederate gangs. Thus d to h may fail, and perhaps l and m likewise with them. For instance, cough and expectoration may fail—as in old persons or in the insane; and with their evasion the febrile group also may be absent, or, at any rate, insignificant. There seems, then, to be some method in these evasions; what is it? If by comparing a sufficient number of cases we are fortified in our notion that from the ideal type certain little parcels of symptoms often and indeed generally fail to appear, and this by some links, in some methodical way, why then by noting these innings and blanks we might put together some subordinate types, or hypotypes, and thereupon try to detect a corresponding parcelling of the causes. And having done this we might, on betaking ourselves to the bed-side, find ourselves enabled not only to refer the piecemeal cases to the respective hypotypes, but also to analyse the completer cases into certain associated or interpenetrating parcels of symptoms. For example, we might perceive in one case that cardio-arterial, vaso-motor,

and gastric symptoms were due in great measure to irritative processes in the bulb, while in another they were due severally to direct impairment in heart, lung, or stomach itself. In full complex cases no such discriminations could become possible unless the analysis had already been made by particular studies of the sundry piecemeal cases. When we have learned to pull a case in pieces and to discern the subordinate gangs of symptoms severally, we shall know how to interpret their respective sources and stresses, and thus to prevent or to alleviate them when mingled, or piled one upon another.

When, however, does a case of pneumonia—and I have taken pneumonia as a class for application to all classeswhen does a case of pneumonia, by such fragmentation as we have been supposing, cease to be pneumonia? When by such eccentricities would it forfeit its name? Well, frequently; as, on the margins of the class, cases fade or melt into cases of other classes, or into zones of anomaly. We began by declaring that classifications are all and each of them arbitrary concepts, and types but abstract ideas. But, even if we keep strictly within the four corners of familiar cases, there are many variations of the pneumococcic pulmonary diseases ordinary acute pneumonia, the pneumonia of children, that of the drunkard, that of acute mania, that of sepsis, and so on, to name but a few. We know besides that the pneumococcus is prone to attack other parts, such as the joints, the meninges of the brain, and other tissues, which events are effects of this particular specific link in the chain of causation. But beside this specific agent there are evidently large groups of other determining antecedents by which the issue is compelled in this direction or in that; broad variations which we may attribute to various antecedents, on the one side of the equation or on the other; on the part of the external causes or on the part of the individual. Or there may be rare or irregular determinants on both sides, when the analysis becomes more and more difficult. Yet these and such questions are of urgent practical importance. The pneumococcus, let us say, may vary much in virulence; but generally this kind of variation would affect rather the degree than the form of the attack. know, however, that microbes differ waywardly within their kinds, as is shown to us, for instance, in the group of which the B. coli is a familiar example. Again, such is the specificity of vital molecules that minute variations may so divert affinity that a toxic molecule may hook itself on to one organ rather than another, to an eccentric rather than to what we should call its normal attachment, and thus, perhaps, to an organ, geographically speaking, as far from its usual haunt as the knee is from the lung. Notwithstanding this, I think that partialities in the determination of a particular microbe to this organ or tissue or to that usually depend more on differences in each or either between one individual and another. When pneumonia, for instance, attacks several persons in the same household, the pervading microbe is presumably the same in quality in all the cases, yet in each of them the clinical series, the line of attack, may be very different.

Permit me now to illustrate these arguments by a few particular cases. Of ordinary acute pneumonia I need not describe an example. It would be after the accepted type, with the accelerated pulse and respiration, the pain, the characteristic cough, the rusty expectoration, &c., and would present the signs of consolidation of the lung.

With this "typical case" I will now compare the following. A young lady, in excellent health to all appearance, started with her sisters in a motor-car for a ball at a considerable distance from her home. On the journey she felt sick, then vomited. The vomiting continued, becoming, indeed, more severe, until she saw it was impossible to accompany her sisters to the house of her friends, and consequently was taken home. On her way back the vomiting became so bad that she had to lie with her head hanging out of the car. She had a restless night, but feeling better in the morning got up. At the lunch hour, however, she fell off again and returned to bed. The family were friends of mine, and being near them I saw her twice a day till the crisis was over; about the sixth day it set in favourably and she made a good recovery. But during the illness we were continually anxious about her. As regards the chest indeed it was not easy to discover the lesion. For three days at least I sought for a patch of the disease in vain. On the fourth day, if I remember right, I ascertained the presence of a small patch of pneumonia in the right axilla;

it was to be heard in the armpit only and over a small area. The expectoration was scanty, but the one or two sputa obtained were rusty and glutinous. The anxiety lay elsewhere—namely, in the behaviour of the pulse and respiration, for the pulse ran continually at 128-130 and the respirations at 55-60, and this although the patient was calm and amenable. She indeed did not make much complaint and had no apprehensions. And I desire to emphasise this—that from first to last she never had even a passing delirium. One almost doubted the reports of the nurses, but we were assured on repeated questioning that not even for one moment did she wander. The temperature was disposed to run very high, but was remarkably controlled by moderate doses of phenacetin, as if it was an incidental phenomenon. And as events fell out, the case proved to be a benignant one; we were unnecessarily apprehensive. With the crisis these alarming rates of pulse and respiration fell to the normal, and of the local trouble we heard no more. Here, then, we had a parcel of the disease, in most prominence a gang of symptoms referable to the medulla—namely extraordinary and persistent vomiting, rapid pulse, and rapid respiration—and these not due to pulmonary embarrassment, for the pulmonary condition, save as a criterion of diagnosis, was negligible, and cyanosis, often looked for, if present at all, appeared only in a fuller cherry colour of the lips. From such an example as this we learn, I think, that even in a typical case dyspnœa and quickened pulse may not always be due entirely—possibly sometimes not at all—to the lung lesion, but only in parallel with it, although, of course, the two parcels of symptoms may reinforce each other or be blended inextricably.

The second case I would quote is one I saw with Dr. H. B. Roderick of Cambridge; it occurred also in a young lady. In this case the pulse and respirations were not greatly disturbed; there was nothing in them to disquiet us. likewise, the pulmonary signs were difficult to verify. Dr. Roderick, who kept a vigilant ear to the chest, could not detect any physical signs of pneumonia till the third or fourth day, and then over a narrow and indefinite area at the back of one lung. A few days later, for the case did not clear up decisively about the sixth day but after a partial crisis relapsed, another patch, but also very moderate in extent and degree, appeared in the other lung, accounting for the relapse. But even then the total pulmonary symptoms were slight, and might, indeed, have escaped observation. Nevertheless, the case was a most alarming one. On both my visits, which were paid during the two acuter phases, the patient was in a hemicomatose state, with contracted pupils, some muttering delirium, and occasional muscular twitching. The nights were spent in violent delirium. The negative signs of the urine hardly allayed the apprehensions of uræmia, but as the second phase of the pneumonia subsided these cerebral symptoms also diminished. Cases of severe cerebral symptoms, especially of prominent delirium, are fairly well known in cases of pneumonia in which the pulmonary symptoms are inconsiderable; and in these the pneumonic patch is often at the apical portion of one lung. In this case, then, out of the typical series of pneumonia we had segments; the poison attached itself to the cerebral area, as in the former case it adhered to the medulla. But this is not all; on my return from the Long Vacation Dr. Roderick and Dr. Latham told me that after another abbreviated crisis the cerebral symptoms returned in all their severity with a small patch of pneumonia at one apex, and again the same cerebral series was repeated with a small patch somewhere else ("pneumonia migrans"). The bulbar symptoms were ("pneumonia migrans"). inconsiderable. It is probable, then, that in some of the completer cases the cerebral symptoms are not due merely to imperfect aeration of the blood; though of course they may be thus aggravated. But out of the complete series we may have the cerebral parcel, or the medullary parcel, and so on; and in each case it is important for the practical man, so far as may be, to analyse particular cases that he may discriminate the places of the component parts in the series. Or, on the other hand, whatever be the significance of the name, we may be dealing with pneumonias unawares; that is, cerebral parcels of it, or medullary parcels, with

¹ In my article on Paroxysmal Tachycardia in the new edition of our "System of Medicine" I have referred to two cases of pneumonia in which the pulse suddenly rose to 100 and more and subsided without much apparent significance. One of these cases held a moderate course throughout.

which the pulmonary, or cardiac, or febrile, &c., parcel may not coincide, or only in degrees so slight as to be latent. I recall a case I saw many years ago with Mr. T. Pridgin Teale in which some such illness was a riddle; cerebromedullary symptoms were almost desperately alarming, even to extreme and persistent Cheyne-Stokes respiration, and no sign of pneumonia whatever could be detected by three of us; yet convalescence was complete. I cannot now say the case was one of pneumonia, but its causes, initiation, and periods were not inconsistent with it.

I think I have said enough on this discrimination of short sections of the pneumonic series, as contrasted with the mere lapses of odd symptoms, to illustrate my point of view; but I would make a short digression to cases in which the pain is very severe and persistent. This I can scarcely describe as fractional pneumonia, for I am now contemplating cases in which the type as a whole is fairly represented. In my experience persistency and grievous severity of the pain forbode evil; indeed, I am disposed to go farther and to say that this sign is almost of fatal significance. I wonder if this is a general experience? I am disposed to think they are cases of a mixed (streptococcie?) infection, for reasons which I cannot now enter upon.

In conclusion, as I am writing on pneumonia I would venture to refer, somewhat irrelevantly, to a recent case of great practical importance, though its features lie outside my segmentary categories. It showed that thrombosis of the pulmonary artery—for such, no doubt, was the nature of the case—may establish itself without notable direct effect on the cardio-respiratory mechanism. A middle-aged man, a patient of Mr. C. G. Cory of Soham, was attacked with pneumonia, severely, but not to an extreme degree. The crisis set in duly, and at this turn of the case I remarked to Mr. Cory that the patient would now do well if no clot formed about the heart. I cannot say what made me make this proviso; I scarcely think there was then any sign of such a misfortune. In a few days, when, indeed, the case had passed out of my mind, I received a telephonic message from Mr. Cory saying that the patient was not doing at all well, and that so urgent was his discomfort that almost imperceptibly doses of brandy had increased to the amount of 12 ounces a day. He reported further that the pulse was 84 and regular, the heart's action undisturbed, the respirations moderate, and the temperatures normal. Thus reassured I suggested that the patient might be oppressed by the large quantities of brandy. Mr. Cory's reply was that they feared he could not do without it, as "he felt so bad." heard no more for two or three days, when I was informed that the symptoms in detail were as before, but the discomfort no less, and I was asked to see him again. On entering the room one saw directly that the report had not been overcharged; he had a distressed aspect, he was restless, and the face was too cool and moist, and was rather, but decidedly, livid. Yet even then no abnormal signs were to be made out. The pulse was 84, and irreproachable; the respirations within moderate limits, and the sounds of heart and lungs-except, of course, trifling remnants of the pneumonia-were without any defect of quality, or any addition. I listened to the heart twice or thrice and for long periods, probably for five minutes at a time, but even then was unable to detect the slightest murmur or irregularity. Mr. Cory, whose examinations were frequent, had never heard any fault. Notwithstanding, thrombosis was an unavoidable diagnosis. A day or two later when the nurse was making her records, and had just counted the pulse-still ranging about 80-84, and regular-she turned aside to enter the number on the chart; as she was making the entry at the bedside, scarcely more than a second or two had elapsed, she heard a sound, the pulse had stopped, and the patient was passing away. We are but too familiar with these cases of thrombosis, but in my experience a per-sistently steady cardiac and respiratory rate, rhythm, and quality up to the moment of death is unique. No necropsy was made.

Cambridge.

CENTRAL LONDON THROAT AND EAR HOSPITAL.— The winter session of this hospital was opened on Nov. 8th, when Mr. Charles Ballance, M.V.O., delivered an address entitled, "The Lesson to be Learnt in London from the History of the Mastoid Operation."

ON RADIUM IN THE TREATMENT OF CANCER AND SOME ASSOCIATED CONDITIONS.

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MANY times during the last year I have been asked whether radium is of use in the treatment of cancer. I propose to give a short account of my experience on this very weighty question.

Up to 13 months ago I had only been in the habit of sending cases of rodent ulcer to be treated with radium by Dr. J. Mackenzie Davidson. The results of the treatment appeared to be excellent in most of the cases I had seen, but the disease was of small extent in all of them. The only instance in which radium had been used for epithelioma was that of a gentleman in whom a chronic ulcer of the inside of the cheek, in the midst of long-standing leucoplakia, had been cured by radium. The application had been followed by a good deal of superficial inflammation, but the ulcer had healed well, and the scar was good. The ulcer recurred, for the patient would smoke several cigars a day. It was again treated with radium, but did not improve, and Dr. Mackenzie Davidson advised him to ask me to remove it. But he persisted in desiring the application of radium, which was used under protest until the ulcer became an epithelioma and the glands of the neck became affected.

In September of last year (1908) I attended the meeting at Brussels of the International Society of Surgeons, of which Professor Czerny was President. There I saw Dr. Abbé's (New York) models of malignant disease before and after treatment with radium, and I came to the conclusion that if he could cure such cases as these appeared to me to be, he must be able to use radium with much greater success than any person in London. He also exhibited a model of the tongue of a patient with very severe leucoplakia and ichthyosis, and there was a label by it to say that it had been cured by the use of radium. I was very much struck with this, for I have never seen or heard of the cure of such a condition either in this country or in any other. It is regarded as an intractable condition, and that is the opinion I have myself formed of it after some 25 years' experience. I therefore asked Dr. Abbé to show me the model of the cured tongue, telling him that I had always thought the condition incurable, and adding that if he could convince me he had cured such a tongue as his model suggested I would send patients from London to New York to be under his care for leucoplakia. His reply was that this tongue had been incidentally cured during the treatment of a severe condition of the cheek, and that he had no model of it. I was not satisfied with his reply, and spoke to one or two of the American surgeons with whom I was acquainted in Brussels, begging them to tell me what they thought of this case particularly. One of them told me he had asked Dr. Abbé the same question as I had done and was no more satisfied with the reply than I had been. I was informed by another New York surgeon that Dr. Abbé was more enthusiastic over radium than his colleagues were.

In the beginning of February of this year (1909) Sir Frederick Treves delivered a lecture on Radium in Surgery at the London Hospital, as an introduction to the announcement of the foundation of a British Institute of Radium. In that lecture he said: "With regard to epithelioma of the tongue and epithelioma of the lip, they are cured by radium. You say, of what degrees? I acknowledge that the cases are in the early stages of epithelioma; but they are epitheliomata that are ulcerating, and that, so far as we know, can yield to no other treatment except that of operation." This yield to no other treatment except that of operation." statement was so contrary to my experience that I wrote to Sir Frederick Treves and questioned him on the certainty of the diagnosis in the cases of cure of reputed epithelioma, and wondered why it was that we had had no success in such cases in London. I also mentioned my interview with Dr. Abbé. Sir Frederick Treves replied that he had no doubt of the diagnosis of the cases in question and was sure that they were genuine cases of epithelioma. He also told me that the reason of the lack of success in London and the reason of success in Paris was that radium was applied

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by means of the disc in Paris, by means of the glass tube in London, and that Dr. Abbé employed the method by the disc and was therefore able to obtain such results as he had exhibited. Now for the cases I have actually seen.

CASES OF EPITHELIOMA.

CASE 1 .- At the end of September, 1908, I was consulted by a gentleman, between 50 and 60 years of age, on account of what I diagnosed as a flat warty epithelioma of the inside of the cheek, about 14 inches across. There were two little patches of leucoplakia, and a history of long-standing "something wrong" with that cheek. I thought I could detect a deep-seated but small gland at the angle of the jaw. I advised him to have the ulcer of the cheek and the glands removed, and gave him the names of two surgeons, so that he might select one of them for the operation. afterwards that he went to see both of them, and they had agreed with me in the diagnosis of the disease. It was finally arranged that one of these gentlemen should perform the operation. Some two or three months later, however, I met the selected surgeon, who informed me that the patient had been advised to go to a well-known dermatologist for treatment by means of radium, so the operation had never taken place.

After the publication of the lecture of Sir Frederick Treves I thought I should like to know what had become of Case 1, particularly as the specialist under whom he had placed himself was known to have been to Paris and to have studied the Paris method of applying radium. I sent for Case 1, who came to see me on Feb 10th, and told me that he had first been treated by ten sittings of 10 minutes each with the X rays in order to "bring the ulcer within the compass of the radium treatment." He had then been treated at longer or shorter intervals by the application of radium nine times for half an hour each time. The last application had taken place at the end of January. pain had been caused by the applications, and no inflammation had followed them, although there was usually a little occasional pain in the cheek for the first few days after radium had been used. The condition of the cheek quite surprised me. The sore was decidedly less than an inch across, and appeared to be quite superficial. It was more a raw place than an ulcer, but it was still very warty. The surrounding area was beautifully sound and soft, quite different from the scar of an operation wound. I was very much impressed by the improvement which had taken place. The glands were not perceptible.

I determined to follow up the case. In September I again begged the patient to come to see me. He replied that he was under treatment with radium in Paris on account of a "large ulcer which has developed upon the site of the epithelioma and which Dr. D—— assures me will soon be surely cured" I have this morning (Oct. 26th) received a letter from his doctor saying: "He is really no better. The ulcer is quite characteristic of epithelioma, to my mind it is larger—it is coming more towards the mouth. You can see the cheek is swollen externally—I examined the glands, but could not be sure if they were enlarged. He was in great pain and that is why he went to Paris."

CASE 2.—A gentleman, 56 years old, was brought to me from Belgium on April 5th of this year by a medical man who had not only been treating him but who was a personal friend. He had suffered from leucoplakia for many years, and about January or February, 1909, an ulcer formed on the left border of the tongue. He had sufficient medical knowledge to appreciate the nature of the disease, but kept his trouble to himself as he had determined not to have any part of his tongue removed. But at the end of two months he showed it to his medical man, at the same time telling him that he would not have the disease removed. They went together to Paris, where he underwent treatment by radium and was subjected to the influence of the material for 25 hours in many sittings. After his return to Belgium he underwent further treatment with radium, until a gland became enlarged and the tongue became so painful that he could bear it no longer, and was therefore brought across the Channel to consult me. He was in a miserable condition, the fore-part of the left side of his tongue was esten away by cancer, and there were several easily perceptible enlarged glands. The skin over one of these was red from the recent application of radium. I sent him to a surgeon for operation, from which he died in the course of a few days. It

was very severe, for the glands were affected on both sides of the neck, and the tongue was very widely infiltrated.

This man's blood may be said, in a figurative sense, to have been upon his own head, for he concealed the existence of the disease for three months after he was aware of it, and absolutely declined an operation. I asked whether the Paris medical men had expressed either to him or to his Belgian friend and medical adviser an opinion that the case was not fitted for treatment by radium. I was assured they had not done so.

CASE 3.—On June 2nd of this year a gentleman, 70 years of age, was sent to me on account of a small ulcer in the floor of the mouth just to the left of the frænum. It was more a fissure than an ulcer, just under half an inch in length, and was surrounded by an area of induration which might be roughly estimated at one-eighth of an inch in width. It had all the characters of epithelioma, and there was very extensive and widespread affection of the glands, chiefly in the middle line and on the left side. They were hopelessly fixed. There was reason to believe that they had been palpable for nine months, but the ulcer in the floor of the mouth had only been observed for about a month. I cut off the posterior margin of the fissure for microscopical examination and sent it to Dr. G. L. Eastes for a report. The report was to the effect that the disease was malignant, and I agreed with the diagnosis on my own examination. Radium was applied in tube on three occasions. On June 5th Dr. Mackenzie Davidson applied four tubes for 20 minutes, and on June 7th the same four tubes for half an The tubes were of glass and contained in all 59 milligrammes of nearly pure radium bromide. They were covered with tin-foil 0.13 millimetre thick and thin rubber sheathing. The tongue was protected above by means of thick lead. On June 8th another similar application was made for half an hour. I examined the ulcer on June 25th, when it was smaller and less deep, and the edges were decidedly softer. There was no sign of inflammation in or about it. I examined him again on July 2nd, when the ulcer was quite healed and the surrounding swelling had disappeared. The scar was excellent, soft, and supple. As there was a little induration perceptible in the tissues a quarter of an inch below the surface I suggested that one more application of radium should be made. This was done and by July 29th the induration had completely disappeared. The condition of the floor of the mouth was so satisfactory that it was difficult to believe that an epitheliomatous ulcer had ever existed there.

The glands, however, remained enlarged and often gave him pain, so that he determined to go to Paris for radium treatment. On August 17th I received a letter from the operator to whom he was given in charge, telling me that the treatment had been commenced with two tubes each containing 0.05 centigramme of pure radium encased in 2½ millimetres of lead. It was intended to keep them applied for from 12 to 24 hours, probably on alternate days, for a fortnight, but the writer did not speak at all hopefully of the prognosis, at which I was not surprised. In fact, I received another letter on Sept. 30th to say that the patient had died on the previous day from rapid loss of strength and vomiting. The operator said the glands "had undoubtedly diminished in size. All the neuralgia disappeared some weeks ago." Gastric carcinoma was suggested as the cause of death. But as the patient had extensive affection of his glands and was suffering from albuminuria there seemed no reason to accept this explanation. Dr. Mackenzie Davidson told me he had published a case in which vomiting and high temperature had followed the application of radium to an extensive rodent ulcer, and he had attributed these symptoms to toxic absorption.

Case 4.—A gentleman, 70 years old, was sent to me on account of a small typical ulcerated carcinoma (epithelioma) of the left border of the tongue close to the foliate papilla. It was indurated, but only superficially, and would have been an excellent case for operation had it not been that there were glands enlarged and not very moveable from the angle of the jaw down to the bifurcation of the carotid artery. As the patient was very gouty and diabetic and had smoked a great deal and had been unsuccessfully operated on for cataract a severe operation appeared to be quite out of the question. But I thought radium might be applied to the primary disease and sent him to the dermatologist who had treated Case 1, asking him whether he thought the ulcer

might be cured by radium. His reply was: "There is every reasonable hope that radium will cure it and with very little pain." I have never seen the patient since. But his medical man wrote me on Oct. 8th to tell me that he had returned home and that the disease had made rapid progress both in the tongue and glands. "There is a large protruding ulcerated surface on the tongue." He further told me that Case 4 had had two applications of radium for one hour each time early in July on two following days, and then after a fortnight's interval he had had two more applications of an hour each on two following days.

There have been two or three other cases of epithelioma in which radium has been used with my knowledge or approval, but they were so advanced that success was not to be hoped for, and they ought not to be taken into the account. There is one case of esophageal stricture, almost certainly malignant, in which great improvement has followed the use of radium, but it is too early yet to speak of cure. Nevertheless, the patient seems to have received sufficient benefit from the application of radium to make it well worth while to have tried it.

The total result thus far is that, out of three cases of epithelioma of the mouth, which were all suitable for a local operation, only one was cured by radium, and that was of so small a size as to have merited the name trivial, if such a term can ever be applied to any malignant sore. In that case, however, the benefit to the patient was so great that it is difficult to exaggerate it. The removal of even so small an epithelioma of the floor of the mouth in a very unsound patient of three score years and ten must have been attended by considerable risk. The wound, if he recovered, might have taken weeks to heal, and he would have been subjected to serious discomfort and a good deal of pain for a long time. If the ulcer had been left, it was liable to enlarge and form a foul and exceedingly painful sore, which would have rendered the remainder of his life a burden to him. Four applications of radium sufficed to cure him without pain, and the cure remained permanent until his

On the other hand, two patients whose cases were deemed suitable for radium by the dermatologist who treated them were not cured. Case 4 does not seem to have been benefited. Case 1 appeared to be greatly the better for the treatment at the end of several months, but the improvement did not continue to a cure. The patient has been under treatment for a year; the sore seems to be larger than it was, and I cannot but question the action of those who took him out of the hands of the surgeon at a time when his disease was well within the reach of operation, and there was good reason to hope that the operation would have been successful. Radium, a year ago, was in quite an experimental stage in the treatment of epithelioma. It is so still, for I only know of one undoubted case of epithelioma which has been cured by it in this country. And the reported cures in Paris still lack detail and confirmation, particularly with regard to the extent and depth of the disease.

It is possible that larger quantities of pure radium and longer sittings may cure primary epithelioma in a much more advanced condition. If that be so, even if the glands must be removed by a surgical operation, the gain to the patient will be enormous, particularly in cases of cancer of the lip and mouth. The destruction will be reduced to a minimum, the scars will be better, and the after-results will be far superior to those which are left by operation, to say nothing of the advantage which the patient will gain in the absence of risk to life from the treatment and of pain during it. I hardly dare yet to believe that such results will be commonly achieved, but I earnestly hope so.

CASE OF DOUBTFUL NATURE (? EPITHELIOMA).

CASE 5.—A gentleman, aged 60 years, consulted me in July of this year on account of suspected epithelioma of the prepuce. He had been circumcised some 30 years ago but the prepuce had not been separated from the corona and behind it. The left side of the glans was the seat of thick patches of leucoplakia of many years' standing. On this side, also, the edge of the prepuce stuck prominently out at the lower part, and the front aspect of the projection was the seat of superficial ulceration, without inflammation, indolent, pale red, and dry. The whole projection was a little indurated and stiff. The glands were not perceptibly affected. I was not sure whether the condition was actually

epithelioma. If he had consulted a dozen surgeons in London it is probable six of them would have diagnosed epithelioma; the other six would have considered the condition not yet epitheliomatous, but almost certain to become so. I am quite willing to believe that it was a young, thin, and dry epithelioma. As excision of the affected portion of the prepuce would not, in my opinion, have sufficed, and it would have been necessary to recommend amputation of the anterior half of the penis, I sent him to the dermatologist who had treated Cases 1 and 4. On Oct. 6th he came to show me what had happened. The suspected epithelioma had completely disappeared, and there was no longer induration or stiffness of the prepuce in the place where it had been. The surface of the glans, which had been the seat of leucoplakia, was covered for the most part with yellowish thick crust, which had peeled off in one or two places, leaving slightly depressed and thin but sound scar-tissue.

Although, in the absence of actual microscopic examination, this case cannot be reported as a case of epithelioma, particularly as it had been, according to the statement of the patient, slowly forming for between two and three years, no one could have undertaken to declare that it was not epithelioma. And I am strongly in hope that it was a case of epithelioma cured by radium.

CASES OF LEUCOPLAKIA.

Case 6.—A lady, about 35 years old, consulted me in the spring of 1896. She had some elongated areas of thin leucoplakia some distance back on the under surface of each border of the tongue, larger on the left side. I attributed them to her gouty disposition and to the rubbing of her gold-crowned teeth against the borders of the tongue. By my advice her medical attendant snipped them away with a pair of scissors. In October, 1908, the right border remained sound, but an area of leucoplakia had recently formed on the left border. I sent her to Dr. Mackenzie Davidson for radium treatment. A single application of radium was followed, in the course of a week, by pain which endured about ten days. And the surface of the tongue was very sore. I saw the tongue on Dec. 3rd, when the plaque had disappeared, and all signs of inflammation had passed away.

On July 22nd of this year she came to tell me that, the same place having become "sore" once more, Dr. Mackenzie Davidson had again made a single application of radium about July 7th. No pain or inflammation had attended the application on this occasion. There was no sore place or plaque at the time I saw her, but the mucous membrane of that part of the tongue was a little thinner and paler than elsewhere.

CASE 7.—In October, 1903, I removed a large part of the right half of the lower lip for a warty epithelioma on the inner aspect, and a second commencing growth just below the angle of the mouth. A flap was turned up from lower down upon and beneath the chin to fill the defect. The glands in the floor of the mouth were widely removed at the same time. They had not been distinctly felt before the operation, but were found to be enlarged when they were removed. Microscopic examination proved epithelioma of the lip (I think in both places), but not of the glands. In spite of all I could do to dissuade him the patient continued to smoke heavily.

In August, 1906, he showed me a considerable area of thick and densely white leucoplakia on the inside of the newly formed lip, extending on to the toothless gum below and behind it. In November, 1908, the area had spread on to the gum, so as to cover a large part of it; the lip was thick and very tender, so that he had been obliged to give up smoking almost entirely. The surface of the new lip inside was very sore (excoriated). In February, 1909, he was much in the same condition, and complained that the lip was always very sore and tender, and that he had been obliged quite to give up smoking. I sent him to the gentleman who had treated Case 1. The patient was very much better in May of this year. The soreness and thickened condition of the lip were almost gone, and the fear of the occurrence of epithelioma in it seemed to have been averted. But the areas of leucoplakia remained precisely as when I had seen them last. I have not seen him since Sept. 22nd, two months after the last application of radium, when his lip was again beginning to be raw and tender here and there, although not nearly so bad as it had been in February. The leucoplakia was not altered.

CASE 8.—About three years ago I "trimmed" the borders of the tongue of a gentleman for chronic superficial glossitis, fissures, little ulcers, and areas of leucoplakia, with a suspicion of malignant disease at one spot. The parts removed were examined by the Imperial Cancer Research, but Dr. E. F. Bashford did not find cancer in them. On several occasions since then I have seen the patient because the mucous membrane below the scar to the left of the middle line has been irritated by the teeth and by the upper margin of a gold plate. Thin leucoplakia formed at this spot, and in the course of this summer there was a superficial chronic ulcer. He was advised to have it treated in Paris, and I thought that radium would cure it nicely. He went to Paris on Sept. 10th, where Dr. D- took charge of him. Radium was applied for an hour each day for ten days in succession, but I do not know in what strength (Sept. 14th to Sept. 23rd). He told me that the ulcer was quite healed by Sept. 28th. But two days later a similar ulcer formed just in front of where the former ulcer had been. He came to show me this ulcer on Oct. 21st, when I observed that the leucoplakia was just as when I had last seen it. I believe he is once more under radium treatment in Paris, and I hope the ulcer will be soundly healed. It seemed to me that he had been subjected to rather severe radium treatment for the cure of what appeared to be only a superficial indolent ulcer without any sign of malignancy.

(Note.—It may be interesting to medical men who are disposed to think that the fees for radium treatment in London are rather large to know that this gentleman told me he had to pay 2000 francs (£80) for his ten days treatment in Paris.)

to pay 2000 francs (£80) for his ten days treatment in Paris.) I do not yet know whether to advise patients suffering from leucoplakia to submit to treatment with radium. The thin area of leucoplakia in Case 6 was certainly removed, but it formed again about the same place within a few months. Of course, the cause had not been taken away, so that the recurrence was due to the continuance of the same conditions which I believe to have been responsible for the first occurrence of the disease.

The thick plaques of leuoplakia in Case 7 appeared to have been quite unaffected by the application of radium, but the plaques on the glans of Case 5 seemed to be in a fair way of being cured with the production of thin and depressed scars. The cure, therefore, if it takes place will resemble that due to superficial excision of the areas of leucoplakia, and I doubt whether the scars will remain sound in the interior of the mouth, where they are subjected to repeated irritation, and perhaps injury.

To sum up. So far, then, as treatment by means of radium in London is concerned, it appears to be admirably adapted to rodent ulcers of small or moderate extent. The application is painless or almost painless. There seems to be very little danger to life or health. The disease seems to be quite cured so far as we can at present judge, and the result is far superior to that which can be achieved by surgery. In cases in which the disease has attacked the bone or has made its way into the tear-duct or one of the accessory cavities of the nose I do not know what radium will do, for I have not seen such a case treated by it.

It is possible, by means of radium, to procure the healing of epitheliomatous ulcers of very small extent and to remove the induration around the ulcers. The cure of such conditions appears to be as satisfactory as the cure of rodent ulcers. In cases of epithelioma of any but the smallest extent, in my experience we are not yet justified in advising patients whose disease is amenable to operation to try the effect of radium unless there are circumstances in the individual case which render an operation inadvisable. far as associated affection of the lymphatic glands is concerned, I have not yet seen anything which would warrant me in believing that the application of radium to the primary disease, even if it were successful, would avert affection of the glands, nor have I seen any case in which undoubted secondary affection of the glands was cured or decidedly benefited by the use of radium. Whether the application of radium over the glandular area before it is obviously affected will be found by-and-by to exercise a protective effect upon the glands I do not know. At present the glands must be treated, as they have been hitherto, by operation.

The results which I have seen of the treatment of leucoplaka and allied conditions lead me to believe that radium only cures them by substituting thin scar-tissue for them,

but does not restore the mucous membrane to the condition it was in before the development of the disease. Treatment by means of radium in such cases has, however, the great advantage over surgical removal or the use of destructive agents that it is quite or almost painless, and that no actual inflammation and no open sore are produced by the applications when they are made by experienced operators.

To medical men who are disposed to send their patients to Paris, where there is a much larger quantity of radium than we have here, and where the operators have, in consequence, had a larger experience and are undoubtedly very skilful, I would venture to suggest that they should obtain a written statement from the operator that, in his belief, the case which they take or send to Paris is a suitable case for radium treatment, and is likely, in the opinion of the operator, to be cured by means of radium. Such a course will guard patients and their medical attendants from disappointment which might otherwise occur from an incomplete acquaintance with a foreign language on both sides and will give the operator to understand that the patient is not sent to Paris merely to be treated with radium in the hope that it may "do some good," but with the definite hope and expectation (on the part of the patient, at least) that it will cure the disease to which it is to be applied. The tuberculin boom is still fresh in my mind, when patients in even the last stages of consumption were sent or rushed off to Berlin to be inoculated. Berlin did a fine business while the craze lasted, but many of the patients spent more than they could afford to do on a treatment which was purely experimental, while others died miserably in hotels and lodging-houses.

Harley-street, W.

BRAIN AND MIND.

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In the crowded curriculum of the medical student, it is impossible to include everything that it is desirable for a practitioner of medicine to know; and it is perhaps not to be wondered at that in it psychology has no recognised place. Yet its problems are the most fundamental of all, and there is no subject that can occupy the human mind which does not rest ultimately upon some assumption in the domain of psychology. Does mind exist apart from matter? Is there any such thing as matter, or is it only a metaphysical assumption? What are the grounds of belief, of certainty, of likelihood? If brain and mind both exist, and are connected, what is the nature of the connexion between them? These are some of the fundamental problems which belong to psychology, and upon the solution that we formally, or, more often, implicitly adopt, depends the whole fabric of our Yet so little does a study of psychological conduct. problems enter into our schemes of education, that it is doubtful whether the majority of educated men and women do not believe that the colour of an object is in the object; though they would hesitate to assert that the sound of a gong is in the gong, and would probably deny that the prick of a pin is in the pin. That the three cases are on all fours, as the lawyers say, has probably not occurred to them.

Mind is often spoken of as a "function" of the brain. It may be, in a mathematical sense, a function of cerebral operations, though it would be an unwarrantable application of a term that has a precise meaning, to make an assertion of whose truth we are ignorant; but in a medical or physiological sense, mind is not a function of the brain. By the function of an organ we mean, or should mean, in medicine, the task that the organ performs in the economy of the body: we mean the physical effects of the activity of the organ. Thus, the function of bones is to give rigidity to the body, to give points of attachment to muscles, and protection to delicate structures; the function of muscles is, by contraction, to produce movements; the function of glands is to secrete and elaborate fluids; and the function of the brain is to receive, store, and liberate motion. The reception, storage, and liberation of motion is a physical, not a mental process. It is true that the function of the brain is not only to receive, store, and liberate motion, but to receive it discriminately; the motion of molar impact and pressure in one place, the motion impressed by sound waves

in another, the motion impressed by ethereal waves in another, and so on. And its function is not only to store, but to store discriminately; to separate and recombine streams of motion; to divert them here and there; to accumulate here and discriminate there. And its distributory function is not merely to pour out motion at large, as water is poured from a jug, but to distribute it to the various organs in definite quantities and proportions, so that each organ shall be governed to perform just so much function, for just so long, as is required,—the muscles to contract so as to move the limbs in certain directions and in a certain order; the glands to secrete at certain times and in certain quantities; and all the organs to take their proper share of the metabolism of the body. But for the regulating influence of the nervous system in the growing body, the legs would be of different lengths, and the arms of different sizes; and this we find happens when the nervous influence is interfered with by accident or disease. These then, are the functions of the brain; and, in enumerating them, no word has been said about any mental process. It is often supposed—at least people speak and write as if they supposed,—that there is one part of the brain for these purely physical and physiological functions, and another part in which mental operations go on. But a little consideration will show that this cannot be so. The constituted fundamentally alike. The whole of the brain is The neurons in one part have certain differences from the neurons in another, but throughout the brain we find neurons and nothing else, except their supporting framework and their nutrient vessels. If the neurons in one part store and carry motion, surely so do the neurons in another part.

The functions of the different parts of the brain differ, no doubt, in complexity, in elaborateness, in the part of the body that they regulate, and so forth; but, since the structure is fundamentally similar, the function also must be fundamentally similar. One part actuates the movements of the heart, another the movements of throwing a stone, another the movements of shoving through a crowd; but all parts have for their function the production of physical effects. Try to picture to yourself how the neurons of the brain —the branching fibres with their regulating cells and nuclei can produce or contain a sound of high C; the aspect of a cathedral; a smell of putridity; an emotion of anger, or a stomachache. It is impossible. You might as well try to tie these mental states up in a bundle with red tape and lock them up in a box. They are not in the brain; they are not in the neurons; they are not in the cells; they are not in the fibres. They are in the mind; and the mind is a universe by itself, distinct and disparate from all material things. There is no community of nature between the vibration of molecules in the neurons of the brain and the thoughts. passions and volitions that occupy the mind. There is an utter separation: between the mental and the material there

Yet the brain and the mind are, in our experience, inseparably bound up together. We know of no manifestation of mind except in animals with a nervous system; and, the more elaborate the nervous system, the higher, as a rule, the type of mind. Agents purely physical, applied to the train, produce startling effects on the mind, and even annihilate it altogether, temporarily or permanently; and no purposive action of the body is undertaken except after, and as a result of, that mental action that we call exerting the will. Notwithstanding, then, the gulf, impassable to human knowledge, that exists between the universe of matter and the universe of mind, the mind does appear to be conditioned by the action of the brain; the body does appear to be set in action by the operation of the mind. What, then, is the solution of the puzzle? What is the connexion between

The most truthful answer is that we do not know, and there is little likelihood that we ever shall know; but three hypotheses have been advanced to account for the connexion.

In the first place it is said that the processes in the brain produce the mental changes—that there are two sets of changes, mental and bodily, and that the latter are the cause of the former. In proof are adduced the many and incontestable instances of changes in the mind following immediately and directly on changes in the body. A pin is stuck into my leg; the nerve-currents started thereby pass up to the brain and there produce a feeling of pain. If

every mental change were preceded by a bodily change, this hypothesis would be plausible; but it fails altogether to account for the fact of volition, in which, as far as it is possible for us to judge, the bodily change does not precede, but follows the mental operation. This hypothesis is known as dualism.

The second hypothesis is that, when a brain process conditions a mental change, there are not really two changes, but only one. The brain-change and the mind-change are two aspects of one process, two sides of the same shield, separate to us because of the limitations of our mental capacity, but in reality but one. This is fascinating at first view, but when we look into it we find that it is a purely verbal proposition; that is to say, we are not capable, as indeed the hypothesis admits, of realising in thought the state of things which the words purport to express. It is a purely verbal explanation, and in reality is no explanation at all. This is what is commonly called monism.

Lastly, there is in the Leibnitzian hypothesis of parallelism, or pre-established harmony. By this hypothesis it is supposed that the two sets of changes go on together, always parallel to one another and simultaneous, but that there is no connexion whatever between them except that of simultaneity. The mental changes answer to the bodily changes somewhat as the movements of a man's shadow answer his movements, but without any relation of cause and effect between them. They happen together because the Almighty, when He attaches a mind to a body, ordains that they shall happen together, just as two clocks going at the same rate would move precisely together without being in any way connected. It is clear that this explanation explains nothing, and for none of the three can any reason be adduced why it should be adopted rather than the others.

But although we cannot explain the connexion between mind and brain, we can gain an inkling, or at least get the affair before our minds in a fairly intelligible form, if we look upon mental processes as an epiphenomenon imposed on the material processes of the brain. When an impression is made on the body from without, either by material contact, or by sound waves or light waves, or in any other way, a nerve current is set up which flows from the part impressed to the brain. Hence, after much wandering and many changes, it issues at length as an efferent current to the muscles, and produces a bodily movement. The circle of causation is closed. If our means of measurement were adequate we should find, on the principle of the conservation of energy, that every unit of motion was accounted for by material changes of position, and none was left for mental effects, supposing such effects possible. But at the turning point of the current occurs an epiphenomenon. Just as, in an electric circuit, the current flows completely round, but at the point of greatest resistance, where the flow is most impeded, a new phenomenon appears in the shape of a glow of light, so in the nerve circuit, the excess of resistance at one place is the condition of the appearance of an epiphenomenon, a mental change. The parallel is faulty, because in the electric circuit the epiphenomenon occurs at the expense of a portion of the energy, which disappears from the circuit; while in the case of the brain we do not know, nor can we conceive, that any portion of the energy is converted into mind; but the illustration is the nearest that the limitation of our faculties permits us to frame, and it is at any rate a real help in dispelling the notion that the production of mind is a function of brain, in any sense in which the term "function" is used in medicine.

Wimpole-street, W.

BRIGHTON AND ITS CENTENARIANS.—The town of Brighton is noted for its centenarians. For some time it has been producing them at the rate of about three in two years. The latest addition to the venerable roll is Mrs. Frances Norman, who on Nov. 5th attained the age of 100 years. She is the oldest inhabitant of the Brighton workhouse, and Mrs. Sinden, who occupies the bed next to Mrs. Norman, is only three and a half months her junior. Mrs. Norman is a native of Brighton and hardly ever has been out of the town. Although very deaf, she is in remarkably good health and has an excellent appetite. Brighton possesses three centenarians at the present time, including Mr. Jeremiah Simmons, the oldest gardener, who will be 102 in March.

CIVILISATION IN RELATION TO THE ABDOMINAL VISCERA, WITH REMARKS ON THE CORSET.

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WE hear a great deal of civilisation, as it is called, and the enormous advantages that accrue to humanity through its influence. Perhaps the most apparent advantage is the safeguarding the individual from the possibility of damage by his fellow creatures. While I would not wish to dispute the benefits which are derived from it, I would like to call your attention to the fact that there are many very serious disadvantages associated with it. These deal chiefly with the mechanical relationship of the individual to his surroundings. I do not propose to do more than call attention to the number of conditions which very materially shorten the life of the man who makes his living out of laborious pursuits, and limit in a corresponding manner his capacity for the enjoyment of life. These physical conditions represent the fixation and exaggeration of attitudes of activity, and are all progressively depreciatory, since they necessitate a shortened life, not only of the joints affected, but of the entire body. Again, the fixation of attitudes of rest, such as lateral curvature, flat-foot, knock-knee, &c., has a similar damaging effect, both on the altered joints and on the body generally, and materially affects the length of life and the capacity of enjoyment of the individual.

What I wish particularly to call attention to is the disadvantage that the individual experiences from the habit of keeping the trunk constantly erect. This habit of keeping the trunk erect from morning to night, whether the erect or sedentary attitude is assumed, is almost universal in the condition of civilisation which exists with us in the present day. It is necessitated by our habit of using chairs and by the fact that circumstances and surroundings do not lend themselves to our lying or squatting on the floor. The erect posture affects men and women differently, for the reason that the abdomen of the woman is relatively much longer than that of the man, while the female thorax and pelvis differ materially from the male. The abdominal wall of the woman is al o rendered less efficient by pregnancy and by the

support af or led by her dress.

To reiterate, I would formulate three general principles. When an attitude of activity is assumed on a single occasion certain tendencies to change exist. If this attitude is assumed habitually these tendencies to change become actualities, and the skeleton varies from the normal in proportion to the duration and severity of the attitude. The skeleton is first fixed in the attitude of activity, and later that attitude is progressively exaggerated. The same is true of an attitude of rest assumed on a single occasion and also when assumed habitually. The skeleton of the ordinary or normal individual rests upon a combination of the tendencies to change consequent on the assumption of complementary attitudes of activity and of rest. Now, when the trunk is erect, there exist tendencies to the downward displacement of the viscera contained in the abdominal cavity. several viscera are influenced by this tendency in a varying degree in proportion as they themselves vary in weight. For instance, the stomach and the large bowel are probably the most variable in weight, since a quantity of material collects in them and passes along at a comparatively slow rate. The more or less fluid nature of the contents of the large bowel assists in its accumulation at certain points, as, for example, in the cæcum and in the middle of the transverse colon, while in the stomach the pressure is exerted on its convexity.

The mechanics of the abdominal wall are such that the muscles exert a firm pressure on the viscera and tend to prevent their downward displacement. Still, in the abdomen, as well as in the body generally, the anatomy is so arranged that there must be a suitable relationship between the attitudes of activity and those of rest, or, in other words, that the erect posture, in which the viscera tend to drop, must be alternated sufficiently with a position in which all strain

assumption of the recumbent or of the squatting posture. In the former the viscera tend to displace upwards by their own weight, while in the latter they are forced upwards by the forcible apposition of the thighs. In our state of civilisation the recumbent posture is only assumed at night, and even then only partially, since the heavy buttocks and thighs sink deeply into the bed. The squatting posture, so common among savage races, is never employed. Therefore with us, from an early hour in the morning till a late hour in the evening, or for at least 16 out of the 24 hours, the tendency to drop of the viscera exists, while during the night this tendency is more or less in abeyance, but in a degree below the normal of the savage.

Nature deals with this modification of the normal mechanical relationship of the individual to its surroundings in precisely the same way as it deals with any specialised mechanical function, whether active or passive. First, as regards the large bowel or cesspool of the gastro-intestinal tract: it attempts to oppose the downward displacement of the cæcum into the pelvis by the formation of peritoneal bands, not inflammatory in origin, but functional, if I may so use the term, which pull upwards the hepatic flexure and secure it with as much firmness as possible in the upper and back corner of the right Acquired bands secure the outer surface of the loin. ascending colon and excum in a similar way to the peritoneal lining of the adjacent abdominal wall. They also grasp the appendix, commencing at its base and forming a new mesentery, which is more or less distinct from its normal mesentery. In this way a portion of the appendix takes on the function of a ligament of the cæcum, tending to oppose its downward displacement. Unfortunately for its new function, the appendix being a hollow tube whose mucous membrane secretes fairly abundantly, it is ill adapted for this purpose. The pull exerted by the heavy loaded cocum upon such of the proximal portion of the appendix as is fixed by acquired adhesions to the abdominal wall produces a kinking of the appendix at the junction of the fixed and mobile portions. In consequence of this secretion tends to accumulate in the distal portion of the appendix and concretions form in it, or it may become more or less acutely inflamed, producing varying conditions of what is called appendicitis. And unluckily for the right ovary, the appendix becomes a near neighbour, and the irritation and annoyance of the ovary may result in a cystic degeneration of that structure. Again, the recurring menstrual engorgements of the ovary serve also to encourage the appendix to manifest the effects of its mechanical disability at these periods.

The transverse colon, especially when loaded, tends also to fall into and occupy the pelvis. The abnormal acquired fixation of the hepatic flexure in the right loin and of the splenic flexure in the left loin help to oppose the downward displacement. Some of the load is transmitted to the ascending and descending colon by means of acquired adhesions, which connect the descending and ascending portions of the transverse colon respectively to the ascending and descending colon. Above the connexion of these tubes is direct, exaggerating very much the kink at the flexures. Lower down the strain is transmitted along an acquired mesentery which stretches from The greater portion of the load is one to another. transmitted along the great omentum to the convexity of the stomach, which may itself be loaded up at the same time. This abnormal drag on the convexity of the stomach is met by the formation of peritoneal adhesions or bands, which attach the upper and anterior aspect of the pylorus to the under surface of the liver. The upper attachment commences in the vicinity of the transverse fissure and extends forwards along the under surface of the liver, not infrequently attaching the gall-bladder or its duct. The effect of this upward drag upon the pylorus and of the pull on the convexity of the stomach is to interfere with its normal functioning and to result in its progressive dilatation. The strain on the stomach is experienced along its upper margin, and especially on either side of the pyloric attachment. It would appear that in the male subject the tearing strain is greater on the upper aspect of the first piece of the duodenum, while in the female it is greater on the proximal side. This varying distribution of strain would be readily accounted for is taken off the viscera and the tendency for them to drop by the different form of the abdomen in the two sexes. is in abeyance. This latter may be obtained by the Again, if the liver itself is mobile and displaced, and the

pylorus no longer depends for support on it, the point of strain in the concavity of the stomach approaches the cesophageal attachment in a degree proportionate to the downward displacement of the liver. The importance of these points of strain is that in the presence of autointoxication these two factors produce engorgement of the mucous membrane, its excoriation, ulceration, and later its infection by cancer.

The descending colon acquires a connexion to the peritoneum lining the abdominal wall external to it, partly to fix it, and partly to transmit the strain exerted by the transverse colon through it. The loop formed by the sigmoid section of the large bowel falls into the pelvis and struggles with the execum, the transverse colon, and pelvic organs for the mastery. As the contents of the sigmoid are fairly solid, this piece of gut is a very unpleasant and obnoxious companion. Therefore Nature endeavours to fix it in the iliac fossa as a straight immobile tube connecting the descending colon with the rectum. This is effected in the manner already described-namely, by the development of acquired bands of adhesions resembling peritoneum in appearance. These tags connect first the outer surface of the meso-sigmoid and later the outer wall of the sigmoid to the iliac fossa, till finally a straight fixed tube, whose muscular coat is comparatively thin, with a partial peritoneal covering, replaces the original mobile loop. The left ovary is in immediate relationship with the outer aspect of the meso-sigmoid, and very frequently becomes involved in the tentacle-like peritoneal processes fixing the meso-sigmoid and later the sigmoid. Later it becomes embedded in the adhesions and then completely surrounded by them. After a time the ovary becomes cystic and enlarged, when it forms around itself a serous covering so that it moves freely in a cavity. This covering gives way, and when the aperture is sufficiently large the cystic ovary escapes. It continues to enlarge and elevates the cæcum, transverse colon, and stomach, and to a great extent meets the disabilities consequent on intestinal stasis, of which it is itself in this instance both the effect and the Unfortunately, these cystic ovaries are more often malignant than was originally supposed. In a large number of cases in which I have removed large cystic ovaries I have been able to demonstrate, beyond a shadow of a doubt, the presence of the nest or cavity in which the cystic ovary

In a certain proportion of cases the acquired tags or bands of peritoneum do not grip the meso-sigmoid uniformly owing to the escape of the centre of the loop. In this case they attach only the extremities of the loop, approximating them to one another and kinking both. In consequence, an obstruction exists at the junction of the descending colon and sigmoid, and again in a more severe form at the end of the sigmoid. In consequence of the latter obstruction the loop becomes abnormally large and nature's efforts being only partially effective produce a condition which is infinitely worse than the normal loop, and a so-called volvulus results. The fixation of the sigmoid as a straight tube is unfortunately associated with a diminution in its calibre and in its muscularity, and irritation, abrasion, ulceration, and cancer of the mucous membrane result. In some instances abscesses form in or about the wall of the fixed sigmoid in consequence of the traumatism to which it is habitually exposed from the passage of its cutents being rendered difficult by its fixation and limited colibre and muscularity. Associated with the intestinal stasis are the very serious symptoms that ensue from the absorption of toxins into the symptom.

The earliest feature is the inhibition of the respiratory centre, and accompanying this, and apparently consequent on it, is the very definite enfeeblement of the circulation. These patients depend more or less completely on their diaphragm for obtaining enough oxygen to carry on their mechanical relationship to their surroundings which becomes more and more modified as the condition progresses. This brings about the several resting postures with which we are all so familiar and which we attempt to cure by exercises alone, regardless of the factor which produces them. Their resisting power to the entry of organisms is subnormal and the organism which most commonly effects a foothold is tubercle. The younger the subject the more readily does tubercle appear to be able to invade some tissue damaged by traumatism, The pulse is very feeb'e and soft. While the trunk is fairly warm, a hand passed over the shoulder of a toxic patient

comes very abruptly at the level of the insertion of the deltoid on a cold zone, and this coldness becomes more marked as the hand descends to the fingers. The skin covering the back of the upper arm is reddish-blue, very thick and gelatinous in appearance and consistence. It is not infrequently rough from the presence of large prominent papillæ. This condition causes much distress to the mothers of girls who wear short sleeves. The skin of the forearm is bluish and marked into islands by lines of a darker hue which correspond to the superficial veins. The hand is mottled partly by blue, partly by yellow patches. The sensation imparted to the hand of the observer by that of the toxic patient is un-mistakable. It is cold and clammy, and moist on its palmar The ears are also bluish and feel cold, as also does surface. the nose, but to a much less degree. These symptoms vary considerably with the surrounding temperature, but are readily recognised in the warmest weather.

The pigmentation of the skin in these toxic people is a very marked feature. Like many of the symptoms which result from intestinal stasis, but in a greater degree, it varies with the colour of the hair. While dark-haired people show pigmentation in a very marked manner, those with red hair show it slightly or not at all. In some peculiar manner redhaired people appear to possess a comparative immunity to the effects of intestinal stasis. Except for the face, the areas that show pigmentation most conspicuously are those exposed to friction, such as the inner aspects of the upper parts of the thighs, with the adjacent opposing surfaces of the buttock, the spines and abdomen where the corset or dress presses, the axillary folds, the bend of the elbow, and the neck. Pigmentation commences in the eyelids, spreads over the mouth, side of the nose, and later over the cheeks.

Loss of flesh is a very serious symptom and is productive of necessity of many secondary troubles. In the pelvis the loss of fat aids in producing the elongated contracted cervix uteri and the flexions of the uterus which are so commonly present in these cases. In the loin it removes that elastic support which keeps the range of movement of the kidney in what is regarded as normal. The loss of fat in the face and neck produces an appearance of age, distress, and disappointment which is most pathetic, particularly in the young subject. The loss of muscularity is shown in a complete want of tone, the muscles being flaccid and in-elastic. In the case of the abdominal muscles this is particularly serious, since one important factor in controlling the position of the viscera is lost more or less completely. The individual is also unable to lead an active physical life because of the poor muscular development. The muscles are not only small and feeble, but become very soft and friable, so that they tear readily, and when sutured yield and afford no security to the ligature. The condition of the breasts is also a very important one. First, the upper and outer zone of the left breast, and later the same portion of the right, show changes. In the young subject they become hard and nobbly, and may be sore and painful at the menstrual periods. Later in life they develop a cystic change, which may be painless or may be associated with attacks of pain owing to the distension of one or more cysts. Still later these degenerating breasts are very liable to develop cancer. Though the degenerative change commences in the upper and outer zones it may spread to the entire breast. It is very much more common in the virgin, and only arises in the married woman when intercourse is abstained from or is very irregular. These toxic people have very little or no sexual appetite, just as they lose their appetite for food and even hate the sight or smell of it. Perhaps the most interesting and accurate description of the influence of intestinal stasis on the sexual appetite has been written by Rudyard Kipling in "The Light that Failed." I do not think Kipling knew that his heroine was affected by intestinal stasis and probably constipated, but he describes an individual with that accuracy of observation and power of description in which I believe he has no equal. I need not recall the redhaired companion of the heroine, as I am sure all are perfectly familiar with the characters in the novel.

Perhaps one of the greatest of the many great men of whom America can boast was Brigham Young; he by irrigation converted a very poor district into one of the most fertile of the United States. He also attempted to popularise polygamy, and his efforts in this direction were met by a success almost equal to those in the direction of agriculture. I am unable to form any definite opinion as to how his action was

influenced by the knowledge of the influence of intestinal stasis on women, and the benefit which these people derive from matrimony. His views on this subject certainly did not meet with encouragement in the United States, partly, I suppose, because of religious or legal objections, and probably to a great extent from the ignorance of the public and even of our profession on the subject of intestinal stasis. I am inclined to think that when women know more about the physiology of life they may exert some influence on legisla-This is more likely to develop, in the first instance, in tion. the United States, where both men and women hold broader views and are less tied by creeds and tradition than they are in the old world.

The mental condition which is brought about by autointoxication is most distressing. While it renders the subjects miserable, and unable to concentrate their attention on work or pleasure or to control their tempers, it makes them most unpleasant companions. An alcoholic woman may be cheerful under the influence of her drug, but in no circumstance does the toxemia of intestinal stasis produce other than a depressing influence on the mind and on the body generally. Medical men are very fond of calling this condition neurasthenia. These patients readily become melancholic. They frequently suffer severely from headache, either continuously or at intervals, and they awake in the morning with a headache, feeling they have obtained no rest or advantage from their sleep, and that they are just as tired and exhausted as when they went to bed. The world seems always chill and gloomy to them, quite apart from the intestinal pain and discomfort which they so often experience. My friends have often said to me that they were sure patients would never submit to such a serious operation as removal of the large bowel. They forget that to these sufferers life has no attraction, and the risk of the operation at least affords them a chance of escaping from it. I do not think that any patient has expressed to me the slightest anxiety on this score, but has most willingly grasped the opportunity of parting with his other troubles at all costs and at the earliest opportunity.

The patients usually suffer from abdominal symptoms, varying from a colicky pain due to obstruction at a fiexure or at the sigmoid, or to a flatulent distension of the stomach or intestine due to decomposition produced by the delay in evacuation of the contents, or to the presence of a pancreatitis or of gall-stones. These conditions have resulted, partly from a direct infection of the pancreatic or biliary ducts by organisms from the small intestine whose level in the small intestine has been materially raised by stasis, and partly from a reduced resisting power to organisms consequent on the auto-intoxication. This infection of the pancreatic and biliary ducts does not appear to take place in such cases of intestinal stasis as arise early in life. I have never seen it in patients in whom loss of flesh has been a marked feature before 20 years of age. Infection of the gall-bladder and later of the pancreas arises in stout patients who develop intestinal stasis at or beyond middle life. It would seem that the loss of flesh and of vigour consequent on the toxemia of intestinal stasis so affects the mechanics of the gall-bladder as to produce an accumulation of bile in it and in association with the infection of the ducts to determine the formation of stones in it. Here again intestinal stasis is responsible for an inflamma-tion of these structures followed later by a cancerous infection.

I have endeavoured to indicate the importance of the fall of the viscera in the erect posture. Obviously the most effectual means of meeting this condition is by the exercise of a sufficient pressure exerted appropriately on the lower abdomen. For a long time women have been in the habit of wearing corsets for the purpose of supporting their dress and of affording attractive outlines to their bodies. The English corset is disastrous in that it exerts a constricting encircling pressure on the abdomen about the lower costal margin and exaggerates the tendency to downward displacement of the viscera. The straight-busked French corset is much less harmful, and if skilfully made and applied serves to exert a moderate pressure on the lower abdomen. The corset that is most efficient is one that, while exerting a firm and constant pressure in a backward and upward direction on the abdomen below the umbilicus, leaves the upper portion of the abdomen quite free.

Owing to a want of knowledge of the pathology of intestinal stasis the corset has not received the attention it deserves, so that by far the most important factor in the treatment of intestinal stasis and of its effects has been left in abeyance. I would strongly urge its therapeutic value on the medical profession as being the most effectual means I know by which the trouble to which I have called attention in these remarks may be avoided or mitigated.

Cavendish-square, W.

ON RHYTHMIC INTERRUPTERS FOR USE IN ELECTRO-THERAPEUTIC WORK.

BY H. LEWIS JONES, M.D. CANTAB., F.R.C.P. LOND., MEDICAL OFFICER IN CHARGE OF THE ELECTRICAL DEPARTMENT, ST. BARTHOLOMEW'S HOSPITAL; LATE PRESIDENT OF THE BRITISH ELECTRO-THERAPEUTICAL SOCIETY,

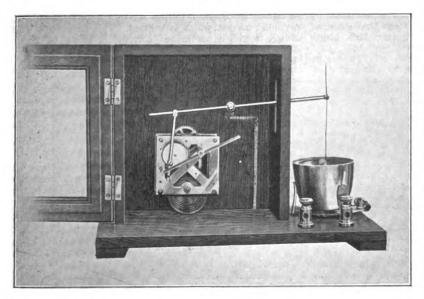
THE advantage of using regularly varying currents in many of the procedures of electrical treatment is gradually becoming more widely recognised, and although such currents have not yet come into general use, I consider that they are shortly destined to do so. One of the causes which have delayed their adoption has been the difficulty of obtaining apparatus for providing regularly varying currents,

but this has now been overcome.

During rhythmical electric stimulation the tissues stimulated are given recurrent intervals of repose in the course of the treatment, and time is thus given for renewal of blood-supply and fatigue is prevented. A sustained stimulation without any intervals tends to induce fatigue quickly, particularly in weak or paralysed muscles, and it is probable that harm may be done by electrical applications which set up a sustained tetanisation in such muscles. If experimental proof were needed of the value of rhythmic stimulation, it is to be found in the experiments of Débédat upon the muscles of young rabbits. He showed that rhythmic stimulation of the muscles of one hind limb for 10 minutes daily caused, after 20 days, an increase of 40 per cent. above the weight of the corresponding untreated limb. The current used was that of an induction coil. With continuous current also applied rhythmically the increase was only 18 per cent. When similar applications, but with no rhythmic intervals, were used the gain in weight was nil both for interrupted and continuous currents. Bordier, working with human subjects, has obtained similar proofs of the good effect of rhythmic currents, for he reports an increase in girth of half an inch in the arm after two months of rhythmic

By the term "rhythmic interrupter" is meant a mechanical device for turning currents on and off in a regular periodic manner, and there are two main varieties of rhythmic interrupter, giving different effects, and both are valuable in medical treatment. In the older type the current is simply switched on and off at a uniform rate, the change from "on" to "off" being abrupt; while in the newer type there is a gradual growth of current from zero to its maximum, followed by a similar gradual decrease to zero again. This is the most generally useful type of rhythmic interrupter, but the first type requires some brief notice, too. It will, perhaps, suffice to say that for sudden turning on and off of current a simple metronome with wires dipping into mercury cups and out of them fills the requirements completely. apparatus is well known in physiological work and is known as Kronecker's (more correctly Bowditch's) metronome. This type of rhythmic interrupter, in one form or another, has been in use since the very early days of electro-therapeutics. It is of very great utility in electrical diagnosis, and I have found it valuable in the treatment of wry-neck and of other spasmodic affections, and in functional aphonia. It appears that for these cases the steady rhythm of the make and break has a psychological effect of a useful kind, and when treating functional aphonia I insist on the patients counting in time with the beats of the instrument, with the same object. With this metronome the rate of the rhythm can be varied within sufficiently wide limits, and the duration of each period of flow of current can be regulated by adjustments of the mercury cups and the dipping wires to permit of the dipping wire to plunge either deeply or slightly, as

Fig. 1.



The second type of rhythmic interrupter—namely, that in which the current is made to rise slowly from zero to a maximum, and again to fall slowly back to zero—is the type which is more particularly valuable for many forms of electrical treatment. To effect this gradual change is a matter of difficulty, but this is overcome in the apparatus about to be described. (Fig. 1.) It consists of a train of clockwork which communicates an up-and-down movement to the end of a horizontal arm, and this arm carries at its end a vertical platinum wire which in its excursions dips down into a cup of water, penetrates nearly to the bottom of the cup, and then rises again until the extremity of

the wire almost emerges from the surface of the water. current passes from the wire to the cup through the water, and the resistance of this part of the circuit alters with the depth of immersion of the wire, and consequently the current passing through the circuit varies proportionately and continues to vary so long as the movement up and down of the platinum wire continues. greater the range of resistance in the cup the greater is the range of the current through the patient, who is connected up in the circuit in such a way that the current passes first through the interrupter and then onwards through the patient. To increase the range of resistance in the cup a small glass funnel is inverted in it, and the platinum wire moves up and down in this inverted funnel. When the point of the wire is at the top of its excursion upwards its point, though still immersed, is in the stem of the inverted funnel, and the resistance then is high and the current small. On the other hand, when the wire has descended to its lowest point it lies close to the metal of the cup, and is surrounded by a wider area of fluid, and the resistance is low, and the current, therefore, is large. It is easy, with this little contri-vance, to have a current varying rhythmically between 1 and 10 milliampères through a patient, and

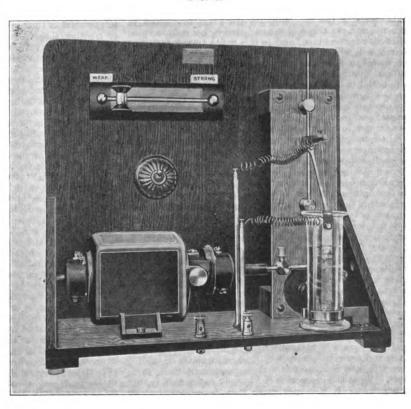
this gives as wide a range as is usually required. The rate or periodicity should be of about one complete cycle in four seconds or 15 per minute.

As the amplitude of the range of current through the patient de-pends upon the amount of the resistance which can be interpolated by the excursion of the moving wire, it follows that the liquid in the cup should have a high resistance and not a low one. To add salt to the water decreases the range of current very much. Tap water (or, better still, distilled water, by reason of its higher resistance) is the proper fluid to make use of in the cup. In order to adjust the platinum wire it is made to slide through a vertical hole at the end of the horizontal arm and can be clamped when in position, the best being when it can almost touch the bottom of the cup at the end of its downward range, and almost emerges from the surface of the water at its topmost position. This mode of fixing the platinum wire also permits of its easy

withdrawal for cleaning, and the metal cup is also free of all fixed connexions for the same reason. The current passes from the base of the cup to a metal saucer on which the cup stands, the cup and the saucer being made of a nickel crucible and its lid, which are inexpensive and eminently suitable. I have used a homemade apparatus of this kind for a number of years, the original instrument having been contrived out of a clock work photographic plate rocker. With this device either continuous or interrupted or alternating current may be regulated.

Fig. 2 shows a more massive apparatus of the same

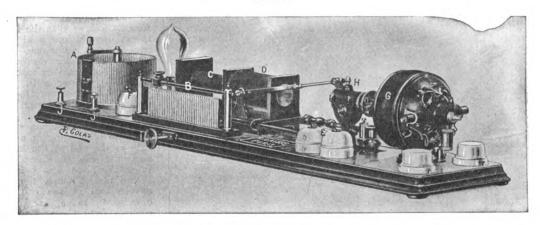
Fig. 2.



electric department at St. Bartholomew's Hospital for supplying rhythmic current to the electrical bath-room. It supplies five baths and works for several hours a day with great means of a worm wheel and gearing on the shaft of rhythmic current which is utilised. This apparatus, which the motor, as can be seen in the figure. This larger cannot regulate continuous current, is made by Messrs.

kind driven by an electric motor, which is in use in the slide to and fro upon guides over a primary coil in which an interrupted or alternating current is circulating. (Fig. 3.) The current in the moving secondary coil varies in strength as it approaches to, or recedes from, the fixed primary, and the smoothness. The requisite slow motion is obtained by variations in current in the secondary coil provide the

FIG. 3.



apparatus gives a sufficient range of variation without the Gaiffe of Paris (Medical Supply Association, 228, Gray's Innneed for the inverted funnel used with the smaller apparatus, road, London), while my own apparatus in both the small and a glass cylindrical container is used in place of the nickel cup.

Another very ingenious apparatus for the production of rhythmic currents is an instrument in which a small electric motor operates a crank which causes a secondary coil to road, London), while my own apparatus in both the small and large forms is made by Mr. Leslie Miller of 66, Hattongarden, London. The prices of the instruments shown in Figs. 1 and 2 are £2 15s and £7 10s. respectively, and the third instrument described costs £20.

harley-street, W.

THE TREATMENT OF CHRONIC ULCER OF THE LEG.

BY WILLMOTT EVANS, M.D., B.S. LOND., F.R.C.S. ENG., SURGEON TO THE ROYAL FREE HOSPITAL.

FEW will be found willing to dispute the statement that chronic ulcers of the leg often present great difficulties in treatment, and yet these ulcers can always be made to heal if sufficient care be taken, and in this paper I have described those methods which I have found of most value; they may prove useful to others who have to deal with this refractory condition. Before, however, I describe the methods I employ it is essential that I should point out the importance of an accurate diagnosis if success is to be attained. The etiology of the ulcerations met with on the leg is varied. Many are traumatic and in themselves need detain us little because a purely traumatic ulcer rarely becomes chronic, for it has a natural tendency to heal; in fact, if an ulcer which started from an injury is found to be still existing many months after its first appearance, it may be accepted as certain that some complicating factor is present which has interfered in

the healing process. I shall refer again to this point later.

In the opinion of most surgeons, so far at least as may be gathered from the text-books, the commonest cause of ulceration of the leg is the presence of varicose veins. would not for a moment be thought to under-rate the etiological importance of varicose veins in the production of chronic ulcer of the leg, for I recognise fully the great rôle they play in damaging the tissues of the leg and in preparing them for ulceration; but I wish to lay down as certain, at least to my own mind, that varicose veins are seldom the sole cause of ulceration of the leg. They cooperate, they aid, they form an important factor in the production of these chronic ulcers, but without other assistance they rarely suffice to produce definite ulceration.

What are these factors? Trauma I have already mentioned and sepsis is a potent adjunct in breaking down the tissues, and a certain proportion of chronic ulvers of the leg can certain'v be ascribed to the united action of these three factors. What the proportion is I cannot say definitely, but my impression is that not more than 5 per cent. of all

cases of chronic ulceration of the leg can be satisfactorily accounted for by these agents. The more I see of these chronic ulcers the more I become convinced that in a very large proportion they are syphilitic in origin—that is, they are due to the breaking down of gummata. In fact, I should feel inclined to say that more than 90 per cent. are syphilitic in origin. Such a belief must necessarily have a great effect on the method of treatment adopted, and my increasing confidence in the opinion I hold in this matter is due mainly to the effect of treating these ulcers by anti-syphilitic measures. not wish to deny that other etiological factors also have a share in the production of these ulcers; the presence of the syphilitic poison is not sufficient of itself to produce a chronic ulcer, otherwise there could be no reason why these ulcers should not occur on any other part of the body as frequently as on the leg. The poison needs, as it were, some excuse for appearing at one part of the body rather than another, and this localising factor may be trauma, sepsis, or varicose veins In fact, it is not rare for all these harmful influences to act together for the production of these ulcers. But the chief of them all, the most important, in fact the essential factor, is, in my opinion, the presence of the syphilitic poison. If that be so, the treatment to be effective must deal with this virus, though the other agents in the production of the ulcer must not be neglected. In addition to these ordinary forms of chronic ulcer met with on the leg there are other rarer varieties, such as that seen in Bazin's disease, which need not be described here.

If we search the text-books of surgery for a description of the characters which occur in gummatous ulcers of the leg we generally find it stated that the gummatous are more commonly met with above the middle of the leg-in fact, around the knee It is certainly true that ulcerations above the middle of the leg and in the neighbourhood of the knee are very frequently or almost always gummatous, but I hold that syphilitic ulcers are even more frequently seen in the lower half of the leg; so the mere fact that the ulcer is below the middle of the leg must not be allowed much value in the diagnosis of the cause The most important point in disgnosing chronic syphilitic ulcers of the leg is multip icity. (Fig 1.) If several ulcers are present the probability of the ulceration teing syphilitie in origin is, in my opinion, very great indeed, for it is intensely improbable, if varicosity of

the veins has led to so much interference with the circulation and nutrition of the part that ulceration has been produced in two adjacent fcci, that the intervening portion of the skin should have such good circulation as to enable it to retain vitality. (Fig. 1.)

Another character which is of great importance in diagnosing syphilitic ulcers is the appearance of the margin. It is often stated that gummatous ulcers are characterised by being "punched out" in appearance, with sharply cut This is certainly true of recent ulcers, but when the ulcerative process has proceeded for some months or years these well marked signs are no longer to be expected. in their place we have another character which is, in my opinion, not less trustworthy: this is the crenation of the margin. The edge is scalloped, the hollows being sometimes large, but in others very small, even needing a lens for their complete recognition. (Fig. 2.) I would not say that this crenation of the margin is absolutely diagnostic of a gummatous ulcer, but it shows at least that the ulceration is caused by the breaking down of a granuloma, and of all the granulomata the commonest in the leg is certainly the gumma. The presence of a "wash-leather slough," on which so much stress is often laid, is certainly very suggestive of a gummatous ulcer, but this sign also

The main object of this preliminary account of the etiology of these ulcers of the leg has been to draw attention to the very large proportion in which a syphilitic taint is present. Incidentally I may remark that no trust is to be put in the history of the case in the diagnosis of the gummatous nature of a chronic ulcer.

must not be looked for in chronic ulcers of the leg.

Is there any special reason for the slowness of healing in the more severe and long-lasting ulcerations of the leg? Fig. 3 is reproduced from a photograph of a specimen in the Museum of the Royal College of Surgeons of England. It shows the tibia and fibula of a leg; both bones are much thickened from chronic osteitis and periostitis, doubtlessly due to the persistent hyperæmia of the limb. But the most marked change is a broad long mass of new periosteal bone situated for the most part on the internal, subcutaneous surface of the tibia, a little above the middle, though the margins also stretch outwards on each side. This large mass of new bone has been produced by the proximity of a very chronic ulcer of the leg, and if we could dissect many of the older ulcers that we meet with in hospital practice we should find similar overgrowths and formations of new periosteal bone. During life the edge of the ulcer is adherent to the margin of the thickened mass of bone. Now, in the healing of any ulcer the drawing together of the opposite edges so as to diminish its size is a very important factor in its healing, so that the scar of an ulcer is never so large as the ulcer from which it was derived. When, however, the margin of an ulcer is fastened firmly down to a structure so unyielding as bone, not the least contraction can occur, and this in itself would go far to prevent or retard the healing of a chronic ulcer. Further, the firm fixation of the margin of the ulcer to the bone interferes greatly with a due supply of blood to the floor of the ulcer. and thus the formation of granulations is greatly impeded.

The main purpose of this paper is to deal with the treatment of these ulcers, and I may best commence by saying that everything which favours the general well-being of the patient will aid the healing of the ulcer. Therefore, the patient should obey the ordinary rules of hygiene in diet, and especially I would lay stress on the importance of total abstinence from alcoholic liquids for these cases: if this be not possible the amount of alcohol consumed should be reduced to the smallest limits. Excess of food is also harmful, but no very strict diet need be followed. There is no doubt that rest and elevation in bed are of noticeable value in expediting the healing of these ulcers; but rarely, indeed, can it be said that they are essential to a cure. Rest acts in several ways. When varicosity of the veins is an important etiological element in the production of an ulcer the beneficial effect of rest will be obvious, and it is well to bear in mind that even where no varicose veins are present rest in bed will greatly favour the return of blood from the part and the lymphatic circulation is also benefited by the recumbent posture, so that exuded materials are more rapidly and completely removed. The greater equability of the temperature in patients in bed also cannot be without a favourable influence on the regeneration of the tis-ues, so that we may have to fall back upon the employment of the

recumbent posture for those troublesome and otherwise intractable cases which fail to respond to the more simple methods of treatment.

The treatment naturally divides itself into two parts—the constitutional and the local measures. So far as the general health is concerned, I have already stated all that is necessary, and I have now to deal with the question of the medicinal treatment. Believing, as I do, in the gummatous origin of a vast majority of these chronic ulcers I look upon antisyphilitic treatment as of vital importance, and the only point to determine is whether that treatment should consist in the administration of mercury or of iodides My own impression is that, while the iodides far surpass mercurial preparations in bringing about the healing of gummatous ulcers, they have but little power in preventing the reappearance of ulceration a few weeks or months after the former ulcer has healed. This being so, the best treatment, in my opinion, is to give a course of iodides until the ulcer heals, and then to administer mercury so as to safeguard against the likelihood of a reappearance of the disease. The iodide salt to employ in the first instance matters, on the whole, but little; potassium iodide is most widely used, though in some cases the sodium salt is better borne. The dose required is often great, 20 grains three times a day being not rarely needed, but in many cases half this quantity will suffice. In those instances where the iodides are badly borne several expedients offer themselves; free dilution is the simplest and is generally very successful. Occasionally an increase of the dose is followed by a disappearance of the symptoms, but nowadays the most satisfactory method of dealing with such cases is the employment of organic compounds of iodine in the place of the metallic iodides. Recent chemical research has brought to light many synthetic remedies of this class, so that the surgeon has a wide choice. I have not tried them all, but of those I have employed I am inclined to think sajodin has been the most satisfactory. It must not be forgotten that it is the quantity of iodine which is absorbed into the blood that is of importance, and not merely the amount which has been taken into the alimentary canal. A very useful adjunct to the iodide treatment is to be found in the simultaneous administration of quinine. All iodides are depressing, and it may well be that in many very debilitated subjects the administration of large doses of such a depressant as potassium iodide may aggravate the locally depressing effects of the disease, and thus may lead to the extension rather than to a diminution of the ulcerative process. To its general tonic effects, as well as to its well-known antiseptic powers, I am inclined to ascribe the beneficent action of quinine in these most difficult cases.

Sometimes other tonics are also useful, and in suitable cases much benefit will be derived from the judicious administration of strychnine and of iron. Occasionally good may result from intermitting the administration of the iodides for a week or two. This is especially useful when an ulcer comes to a standstill after progressing favourably for some weeks. A short holiday, as it were, from the iodides will often be followed by an improvement in the condition of the ulcer which begins once more to heal with renewed energy. I consider it to be of great importance not to administer iodide and mercury at the same time, it is far better to administer them separately.

In all ulcerations associated with the breaking down of granulomata the presence of septic organisms is of the utmost importance, for they hasten the softening of the granuloma, they cause hyperæmia of the surrounding tissues, and thus favour the extension of the granuloma. By the absorption of septic products to which they give rise they impair the health of the patient and so favour the progress of the disease. It is not therefore unreasonable to expect that a successful attempt to diminish the number of septic micro-organisms of the part would be of great value in favouring the healing of the ulcer. Should the ulcer be very foul and foetid, dressing with frequent fomentations will favour the throwing off of sloughing tissues and will also, by promoting the formation of healthy granulation, lead to a less septic condition of the part tion used for the fomentation is of comparatively little importance; it should be antiseptic but there is no need in most cases to employ any powerful antiseptic, for the damage done to the tissues may surpass the benefit accruing from the fomentations. On the whole I am inclined to think that the most useful solution for this purpose is made

by dissolving a drachm of boro-glyceride in half a pint of hot water.

In most cases a lotion is advisable for the daily cleansing of the ulcer, and a great many which are suitable are avail-Those which I have found to be the most useful are lotio hydrargyri nigra, lotio hydrargyri flava, solutions of phenol and solutions of iodine. The local application of mercurials is not really inconsistent with the advice I have already given, that mercury and iodides should not be administered together. I am inclined to think that the yellow lotion of mercury is somewhat superior to the black lotion, but the difference is slight, and either will form a convenient lotion for chronic ulcer if diluted by the addition of three or four times the same quantity of water. Carbolic lotion must not be used strong; 1 in 80 or 1 in 100 will be quite sufficient, and the mild anæsthetic property of the phenol may prove useful in certain cases where the ulcer is specially sensitive. which ceases to discharge and heals under the crust so

use some ointment for dressing the wound. The use of an ointment prevents the dressing adhering to the surface of the ulcer, and if of suitable composition it will materially hasten the healing of the sore. Any of the ointments containing preparations of mercury may be used, though I think the ammoniated mercury and the yellow oxide are the most useful. It is well to bear in mind that if a mercurial ointment be used while the patient is taking iodides internally, but especially while a lotion containing iodine is used locally, there is no small risk of a chemical interaction taking place and of the red iodide of mercury being formed. This effect would be shown by the painful smarting resulting from the application of an ointment usually soothing and bland.

The dry treatment of these chronic ulcers is sometimes convenient and useful. Powders are applied to the ulcer in such quantity that all discharge is absorbed and within a few days the powder has formed a solid crust over the ulcer

Fig. 1.











Chronic gummatous ulceration showing crenation of margin.



Large periosteal outgrowth of bone. (From the Museum of the Royal College of Surgeons of England.)

But of all these lotions I prefer the preparation containing free iodine. It may be used in either of two ways. When used merely as a lotion for bathing the part night and morning, a lotion formed by the dilution of the tincture of iodine with four or five times its volume of water will do. It is no mean antiseptic, and it is able to exert its peculiar and special action on the gummatous deposit, and in this way the affected tissues get very much more iodine than when an ordinary dose of an iodide is given by the mouth. If, however, this latter effect is specially desired it is well to use a stronger solution, and a watery solution of iodine equivalent to the tincture may be employed with very good results. Occasionally I have thought it advisable to use even stronger solutions than this, but care and judgment are required in the selection of the cases on which a strong solution is to be employed. With the weaker solution no pain is caused, but the stronger solution may give rise to much discomfort and should only be employed when really necessary.

Between the applications of the lotion it is advisable to necessary, a window may be cut over the ulcer to give exit to

formed. This method of treatment requires much care in the dressing and is much more satisfactorily employed when patients have been admitted into a ward of the hospital or are kept under close observation at home. The essentials for success are that the powder should be perfectly dry and that it should be applied in such quantities as to absorb completely the discharge. There are many suitable combinations, but the following is perhaps the best of all: one ounce of the powder should contain three drachms of oxide of zinc and half a drachm of calomel, and the remainder should be formed of kieselguhr.

Unna's method of treating these chronic ulcers is especially convenient for those in which varicosity of the veins of the limb fills an important rôle. It consists in bandaging the limb from the toes to the knee with gauze, and while the gauze is being applied melted Unna's paste is painted over it. The paste solidifies as it cools and exerts a uniform and constant pressure on the limb both by night and day.

the discharge. Unna's paste consists of an admixture of gelatin and oxide of zinc. I recognise the value of Unna's dressing in certain cases, but I do not look upon it as a satisfactory routine method of treatment in chronic ulcer of the The elastic bandage introduced by Martin for the treatment of these ulcers associated with varicose veins is not without use, but the difficulty of keeping the bandage in good condition, especially when a copious discharge from the ulcer is present, and of applying it effectively day by day detracts greatly from its practical utility, especially in hospital out-patient practice; but in private work, where more care is likely to be taken both in bandaging the leg and in looking after the bandage, better results are attainable.

Gummata, like all other granulomata, are removeable by the application of X rays, and these may be employed usefully in some obstinate cases of ulceration of the leg which do not respond to the ordinary methods of treatment already detailed. The dose to be used should be what is often called a "half Sabouraud"—that is to say, an amount sufficient to cause one of Sabouraud's pastilles to undergo about half the change of tint which occurs when a full Sabouraud dose is given. The recognition of this quantity is naturally a little indefinite, for it depends so much on an estimate of tint, but a little more or less is of small importance. Indeed, a whole Sabouraud dose need not be too much. The other methods of treatment already described need not be interrupted except for the mere application of the X rays, being resumed immediately afterwards.

So far I have described the ambulatory treatment of these chronic cases. The task is rendered far less difficult if the patient is able and willing to rest—that is to say, to remain in bed for several weeks; but it is by no means easy to persuade these patients that confinement to bed is really desirable, and when they are willing to agree to this mode of treatment it is often not possible for them to avail themselves of it, because it interferes with their livelihood. Still, cases do occur from time to time; they are rare, it is true, but they do occur, where all the means at our disposal do not suffice to effect a healing of the ulcer while the patient is still walking about. In cases such as these rest in bed is essential. The ulcers of the leg which refuse to heal under the employment of ambulatory methods are chiefly those in which the varicosity of the vein is the most potent etiological element, especially when the limb is greatly swollen and the duration of the existence of the ulcer has extended over many years. The position in bed which is most conducive to recovery is one in which the leg is raised above the level of the rest of the body. This is best effected by placing a board under the lower part of the mattress with one end resting on the foot of the bed, so that while the upper half of the body lies flat the lower extremities are raised at an angle of about 30° with the horizontal. In this way the return of blood from the affected limb is greatly facilitated and the lymph also flows away freely with the result that the congestion rapidly diminishes, the size of the limb decreases, and the sore takes on a healthy healing action. Any of the topical applications which I have already mentioned in dealing with the ambulatory treatment can be now employed, but the best are the lotion of iodine and a weak mercurial ointment. The effect of the X rays may here also be taken advantage of, and in most of the cases a rapid healing of the ulcer will occur, but unless attention is paid to the antisyphilitic treat-ment there is great probability that as soon as the patient resumes his ordinary work the ulcer will reappear; therefore, even if the patient is treated by confinement to bed it is just as essential that the iodide and mercury in turn should be administered, as it is in the treatment of these ulcers by ambulatory methods. There are some ulcers that still prove resistant, even when given prolonged rest, and the delay in such cases will probably be due to the tethering of the edge of the ulcer to the underlying bone. It may, in these cases, be necessary to free this attached margin, and this is best done by first employing fomentations to reduce the septic complications of the ulcer, then scraping the whole of the ulcerated surface with Volkmann's sharp spoon, and with a scalpel undercutting the whole of the edge of the ulcer. It will often be found to be possible, when this has been done, to draw together the edges so that the size of the ulcer is materially reduced, and if at the same time the margin of the skin is freshened, a very thin border being cut off, the healing process will probably start afresh, and the granulation of the ulcer will be rapid and sure.

In speaking of a mode of causation of chronic ulcer of the leg I mentioned that trauma was often an important factor, and if this be true of the original ulcer it is also even more certain that the scar of a healed ulcer is peculiarly liable to be damaged by even slight injury, so that for long after an ulcer is healed care should be taken by a suitable dressing to protect the soft, tender, newlyformed skin from even those slight and numerous blows which to a healthy leg do no harm.

The difficulties of treating ulcers of the leg are certainly not small, but the satisfaction of causing to heal an ulcer which has lasted for 10 or even 20 years is very great, and the attainment of a consummation so devoutly to be wished may exercise all the care, attention, and ingenuity of the surgeon.

Upper Wimpole-street, W.

ATROPHIC PARALYSIS OF THE MUSCLES OF BOTH HANDS AND FOREARMS; RECOVERY.

(TOXIC DEGENERATION OF THE LOWER MOTOR NEURONS.)

BY R. T. WILLIAMSON, M.D. LOND., F.R.C.P. LOND., ASSISTANT PHYSICIAN TO THE MANCHESTER ROYAL INFIRMARY:

THE following are notes of a case of an affection which is of interest, since the diagnosis and prognosis of such cases

often cause much difficulty in medical practice.

A woman, aged 24 years, was admitted into the Manchester Royal Infirmary on April 20th, 1908, on account of atrophy and paralysis of the muscles of the hands and of certain muscles of the forearms. The patient had been in good health until the previous January, when she suffered from an acute illness in which there were nasal catarrh and pains in the limbs and muscles of the trunk. This illness was in the limbs and muscles of the trunk. thought to be influenza. The severe symptoms subsided in a few days, but she was unwell for three weeks. The pains soon disappeared in the legs and trunk, but continued in the arms and hands. These pains were of a dull aching character, and the arms were tender when touched. At These pains were of a dull aching first there was difficulty in moving the arms on account of the pains; but when the pains had subsided the patient noticed that there was distinct weakness in the movements, and the weakness increased until there was marked paralysis of the muscles of the hands and forearms. The arms had been paralysed for a month before admission to the hospital. There was no history of lead poisoning or of any of the symptoms caused thereby, and the patient had not used any substances containing lead in her work (in a cottonmill).

On admission to the hospital there was well-marked atrophy of the thenar, hypothenar, and interessei muscles of both hands, with inability to perform the movements normally produced by the action of these muscles. She was quite unable to oppose the tips of the thumbs to the tips of the fingers; she was unable to abduct or adduct the fingers, or to place them in the "interesseal position" (flexion at the metacarpo-phalangeal joints and extension at the phalangeal joints). There was also wasting of the muscles of the forearms, but this was less marked than in the muscles of the The wrists and fingers were "dropped." She was hands. unable to extend the wrists or to extend the fingers. The grasp and the flexion of the wrist were very feeble on the right side, but were only slightly impaired on the left. Flexion at the elbow was impaired on each side; extension at the elbow was performed quite well. The wrist-jerks and the triceps-jerks were lost. The muscles of the forearms were tender on pressure. The sensations for tactile impressions, pain, and temperature, and the vibrating sensation were felt on both hands and forearms. The legs were unaffected; the knee-jerks were present; there was no ankle clonus; the plantar reflex was normal (of the flexor type). There was no blue (lead) normal (of the flexor type). line on the gums. The heart, lungs, abdominal organs, and urine were normal. There were no other signs of disease.

The condition remained stationary for several weeks; then gradual improvement occurred, the muscles of the forearm recovering before the small muscles of the hands. Early in June, 1908, she was able to extend the wrists, but not the fingers, and the wasting of the muscles was not so marked. Two months later the muscles of the forearm had recovered completely and the fingers and wrists could be extended and flexed quite well; but the atrophy of the small muscles of the hands persisted and the movements performed by these muscles were much impaired. The hands presented a "claw-like" appearance (main en griffe). By the end of 1908 the wasting of the muscles of the hand had almost disappeared; she was able to perform the movements caused by the interessei, but she was still quite unable to oppose the tips of the thumbs to the tips of the fingers. During the first five months of 1909 steady improvement occurred; by the end of May the atrophy of the muscles of the hand had completely disappeared, and all the movements of the hands and forearms could be performed quite well except that in attempting to oppose the tips of the thumbs to the tips of the fingers she was not quite able to place them in contact. By the end of August these movements could be performed. The treatment had been massage, galvanism, and hypodermic injections of strychnine at different periods, and quinine pills during the last three months.

Briefly stated, the case was one of atrophic paralysis of the small muscles of the hands and of the extensors of the fingers and wrists, with paresis of the flexors of the wrists and fingers. The small muscles of the hands were next and fingers. The small muscles of the hands were most affected and were the last to recover. The onset was subacute. There were pain and tenderness in the arms at first The affection followed an acute illness supposed to be influenza. There was no evidence whatsoever of lead poisoning, and the symptoms differed from those of lead paralysis by the presence of pains and tenderness in the arms at the onset, by the paralysis and wasting being most marked and persisting longest in the small muscles of the hands, and by the affection directly following an acute illness (probably influenza). The quite symmetrical distribution of the paralysis, the complete recovery, and the pains and tenderness in the arms at the onset were against acute anterior poliomyelitis. Moreover, it is extremely rare for acute anterior poliomyelitis to affect both sides of the cord at the lowest cervical and first dorsal segments without affecting other regions of the cord. The case closely resembles those which were first described by Dr. A. Stanley Barnes 1 under the name of "toxic degeneration of the lower motor neurons." In his cases the muscles of the hands were chiefly affected. The pathological examination in one of his cases showed changes both in the nerve cells of the anterior horns of grey matter and in the peripheral motor nerves I have seen four cases of this affection and have recorded one case previously 2; in this case the patient has suffered from two attacks subsequently. Complete recovery has occurred after each attack.

Manchester.

THE

ENUMERATION OF BLOOD CORPUSCLES BY SIMPLIFIED METHODS.

BY ROBERT SAMUT, M.B., C.M. EDIN.,
LECTURER ON PHYSIOLOGY AND ASSISTANT TO THE PROFESSOR OF
PATHOLOGY, MALTA UNIVERSITY.

The enumeration of the formed elements of the blood, although admittedly of paramount importance in the diagnosis of disease, is not as frequently carried out as its value would call for. This is undoubtedly due to the fact that, in enumerating blood corpuscles by means of Gowers's or the Thoma-Zeiss hæmocytometer, the chief difficulty encountered is the necessity of counting the large number of corpuscles in each of the 16 small squares which make up one of the large squares, since at least eight sets of 16 small squares should be counted before a fairly accurate result can be expected. Moreover, corpuscles often overlap the lines which form the squares, and great care is required and time lost to avoid counting them twice over.

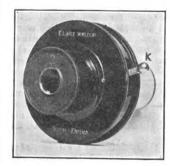
By means of the Blenden-Ocular "Ehrlich" these difficulties are avoided. The construction of the ocular is as follows. An ordinary No. 2 ocular is provided with a screen which cuts out a square from the field of vision of the ocular. By means of the little knob κ (Fig. 1) this square can be appeared out to be stated to be seen as the square of the little knob κ (Fig. 1) this square can be

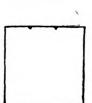
narrowed and reduced to 0, and by means of notches, which divide one side of the square into four equal parts, the reduction may be effected in exact proportion (Fig. 2).

Enumeration.—With this instrument enumeration of corpuscles is done as follows. The drop of blood

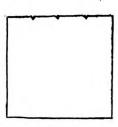


FIG. 1.





is obtained and diluted in the Thoma-Zeiss pipette and blown out on to the Thoma-Zeiss ruled slide in the usual way. When this has been placed on the microscope, allow five minutes to elapse. Use a No. 9 Leitz objective and a Blenden-Ocular, the slit being so adjusted by means of the little knob that four squares



of the central platform of the counting chamber just coincide with it. The number of red corpuscles are counted and the preparation may now be shifted as many times as desired, each count representing the number of corpuscles in four squares, since the slit corresponds exactly to four of the squares. The total fumber obtained after several such counts being divided by the number of counts gives the number of red corpuscles per field of four squares; hence division by four gives the number per square. This number multiplied by 4000 would represent the number of corpuscles per cubic millimetre were it not that the dilution has to be taken into account, and accordingly the result must be multiplied by 100 or 200.

Example: Average number of red corpuscles per square = 10. Then $10 \times 4000 \times 100 = 4,000,000$ per cubic millimetre.

The method is quicker and more accurate than that usually employed, since it enables a much larger number of squares to be counted irrespective of the lines of the counting chamber, which constitute an element of confusion in the process of counting.

Again, the Blenden-Ocular may be used for the purpose of counting the leucocytes in the following manner. A dry film preparation of the blood to be examined is fixed and stained by Leishmann's or Jenner's stain. Using a No. 9 Leitz objective and a Blenden-Ocular the number of red and white corpuscles are counted, the shutter of the ocular being at one-half or one-quarter of the total field of vision. The count is made several times through the same slit and an average of corpuscles per field is obtained.

Now
$$L: R:: l: r^*$$
 $\therefore L = \frac{Rl}{r}$

where L represents the unknown number of leucocytes, R the known number of red corpuscles per cubic millimetre, and 1 and r represent the average of leucocytes and red corpuscles respectively per field of vision.

Sliema, Malta

¹ Brain, 1902, vol. xxv. ² Ibid., 1903.

A ship's steward, aged 30 years, was admitted to the made. The wounds were closed in layers. The adhesions Cardiff Infirmary under my care on Dec. 19th, 1908, with were broken down prior to wiring. Bending after wiring

On the following history. August 12th, while on board ship at sea, he was carrying dishes down the ladder from the bridge deck to the main deck. Tropical rain was falling and the steps and rails of the ladder were wet and slippery. His face was away from the ladder because of the dishes he was carrying. On one of the first three or four steps one foot slipped and he fell. He let go the dishes, threw his body backwards to save himself and the toes of his feet catching in the steps he came to the bottom of the ladder in the position shown in Fig. 1, both his knees striking the deck hard at the same moment. There was no medical man on board. The captain found both knee-caps broken, had him placed in his bunk, applied back-splints with footpieces and brought the broken fragments as near together as he could with plaster. The patient was kept thus until 19 days later, when the ship reached Durban, Natal. He went at once to hospital. Splints were continued for a week and then plaster-of-Paris was applied. He began to get about and on Oct. 29th left the hospital and

right. Pain in the knees was almost constant. Both patellæ were fractured transversely, the upper fragment in each case being the larger. The separation was 1 inch on the right side and $\frac{1}{2}$ inch on the left side. The knees were fixed by adhesions in almost extended positions. Operation was delayed in order to cure boils on the legs.

On Jan. 11th, 1909, operation was undertaken. Both fractures were freshened and wird, vertical skin incisions being made. The wounds were closed in layers. The adhesions were broken down prior to wiring. Bending after wiring

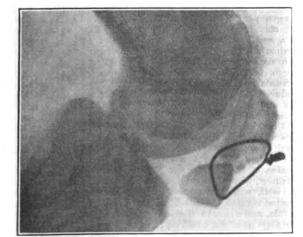
1G. 1.



Sketch showing dramatically the manner in which the knees struck the deck.

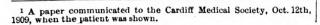
and before closing the wounds could not be done as the wires began to cut through. The wounds were healed in a week. The after-progress was slow in spite of massage and move-ments. The patient left the hospital on March 20th, using crutches. On June 9th he was still using crutches ("compensationitis") but could walk without them and bend either knee to nearly a right angle. M. Lucas-Championnière, who was in Cardiff, kindly examined him and pointed out that union was not firm in the right patella. On Sept. 6th he had discarded crutches and sticks. He walked well with a natural gait, his walk showing no evidence of his injuries. He had got fatter, was cheerful (in contrast with a former depressed condition), and was about to resume work. He still came downstairs clumsily, putting both feet on one step before proceeding to the next, but when encouraged and shown he managed to come down in the ordinary way. Both patellæ were firmly united and he could bend both knees to well beyond a right angle. The twisted ends of the wires could no longer be felt as

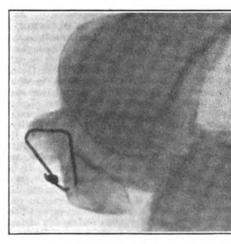
Fig. 3.



Radiogram of right knee.

came to England. On admission to the infirmary he could walk feebly with sticks. He had a great sense of insecurity, the slightest twist or slip caused him to stumble or fall; he held on to everything within reach. There was fluid in both knees and tenderness over both joint areas, particularly the





Radiogram of left knee.

came to England. On admission to the infirmary he could formerly. He had a pair of strong good legs and was quite walk feebly with sticks. He had a great sense of insecurity, satisfied with his condition.

A number of X ray photographs were taken by Dr. Owen Ll. Rhys in the electrical department of the infirmary. Those reproduced (Figs. 2 and 3) were taken on Sept. 14th and show the knees flexed but not quite to their fullest extent. In the left knee the wire, as frequently happens, having done its duty as a splint, is broken.

References.—1. M. Lucas-Championnière. This surgeon, whose experience of fractured patellæ is very large, on the occasion of his recent visit to Cardiff kindly told me that he had seen and treated three cases of simultaneous fracture. They occurred a good many years ago and he did not remember the mode of production in any. Two were in women and one in a man. All were old cases when operated on and in all one patella was sutured and not the other. As far as he knew all three patients had, eventually, useful legs.

2. Astley Cooper.² "A young woman was brought into my house in her father's arms and he said, 'I am obliged to carry her, for she has lost the use of her legs, having broken both her knee pans eight months ago.'" Recovery ensued gradually. 3. Hamilton: 3 "I have seen a double transverse fracture or a fracture of both patellæ in a man, set. 22, who fell from a third-storey window, striking, he says, upon his knees." 4. Mansell Moullin: 4 "The patient is conscious of something breaking before he falls and it sometimes happens that in the desperate effort to save himself the other patella snaps across as well. I have known this occur to a man in the first stride of a race." 5. Scudder: 5 an illustration is given of fracture of both patellæ, but there is no reference in the text.

Rarity of the injury.—There is little reference in surgical literature to simultaneous fracture of the patellæ, although fracture of the two bones at different periods and refracture of one bone are commonly mentioned. Simultaneous fracture appears to be a rare injury.

Mode of production.—I believe that in this case the fracture was due to direct violence. The very acute flexion of legs on thighs would bring the patellæ to the deck first and not the tibial spines. The patellæ would be held tight-braced against the femur ready to crack across directly they hit the deck. The patient's own statement is that he felt nothing snap before alighting and thinks that the blow on the deck caused the fractures. It is, of course, possible to take the view that in throwing his body backwards the man snapped both patellæ. The case must be regarded as a special one. As regards ordinary single transverse fractures, there seems in most cases to be no good reason for giving up the older view that each is due to the snapping of the bone across the condyles of the femur—i.e., to indirect violence. This is often clearly supported by the history of the case. Oardiff.

On Dislocations and Fractures of the Joints, 1842 edition, p. 230.
 Fractures and Dislocations, 1871 edition, p. 435.
 Surgery, 1891 edition, p. 474.
 The Treatment of Fractures, 1903, p. 347.

THE PARENTS' NATIONAL EDUCATIONAL UNION. The Thirteenth Annual Conference of this union will be held at the Friends' Meeting House, Bull-street, Birmingham, from Nov. 15th to 19th inclusive. On the opening day the members of the conference will be received by Mrs. George Cadbury, who will give an address of welcome, to which Earl Lytton will reply. In the evening of the same day an address will be given by Sir Oliver Lodge. Among the papers already announced for discussion are: "Environment in Relation to Nervous Stability," by Dr. Helen Webb; "Educational Ideals of the Renaissance and Ourselves," by Dr. Geraldine Hodgson, D. Litt.; "Direct and Indirect Moral Teaching," by Miss Bradley; and
"The Education of the Imagination," by Canon J. H. B. Masterman. Papers are also announced on the subject of university education by the Bishop of Birmingham and Mr. C. J. Fleet, the Governor of McGill University. In connexion with the conference and under the auspices of the Co-educational Public Schools Trust the co-education of boys and girls will be discussed under the presidency of Professor Hughes, Dean of the Faculty of Arts and Professor of Education in the University of Birmingham. During the course of the conference visits will be made to the village of Bourn-ville and to the new University buildings at Bournbrook. Among the principal objects of the union are the assistance of all classes to understand the best principles and methods of education, and the education of public opinion on the subject of the training of children. Further particulars of the conference and tickets (price 3s. 6d.) can be obtained from Miss Parish, 26, Victoria-street, London,

LARGE VESICAL CALCULUS, WEIGHING 261 OUNCES, REMOVED BY SUPRA-PUBIC LITHOTOMY; RECOVERY.

BY W. W. HEARNE, M.D., CH.B. MELB.

THE very large size of this calculus and the complete recovery of the patient will perhaps lend interest to the following notes.

A married woman, aged 39 years, consulted me in March of this year complaining of great pain in the pelvic region, foul-smelling urine containing much pus and frequently blood in considerable quantity, and frequent painful micturition necessitating her rising often as many as eight or nine times at night, with consequent loss of sleep and impairment of general health. She had been ill about 12 years, and had become rapidly worse during the last six months. Examination revealed a large calculus almost

entirely filling the bladder.

On April 15th Dr. J. H. Nattrass anæsthetised the patient, and the bladder having been washed out with boric lotion and its distension attempted with a few ounces of the same fluid, with Mr. A. Honman assisting, I opened the bladder in the suprapubic region with the object of removing the calculus by that route after having reduced its size by fragmentation. When exposed, however, all attempts at the latter procedure were rendered futile by the size and density of the stone, the largest lithotrite failing to grasp or even chip pieces off it; and as the use of the chisel and mallet appeared to offer too great risk of damage to adjacent viscera, it became necessary to remove the mass entire. It was obviously impossible to extract the stone through the limited space available below the reflection of the peritoneum, and the necessary room was obtained by carefully stripping that membrane upwards off the fundus of the bladder for about two inches. Even then it was necessary to incise the viscus from the extreme upper limit right down to the neck deeply behind the symphysis pubis. Venous hæmorrhage in the latter region was free but was readily controlled. After extraction of the stone the bladder was well washed out and the incision in it was closed above and below with catgut sutures, a rubber drainage-tube being inserted at about the middle; gauze drainage was provided in the prevesical region behind the symphysis, the ends of the gauze and the tube being brought out through the lower extremity of the abdominal wound, which was elsewhere closed. After four days the tube was removed from the bladder, which throughout the period of convalescence was irrigated twice daily with boric lotion and later with hydrogen peroxide solution (1 in 4), urotropin (10 grains) being also given by the mouth. On May 21st, as there was still a small urinary fistula, the walls of the latter were refreshed and brought together with a deep mattress suture, which six days later had to be removed as it was cutting through. After two days more the urine was coming through the fistula again. A self-retaining rubber catheter was then introduced per urethram and the bladder was washed out night and morning with boric lotion, followed by silver nitrate solution of strength increased from 1 grain to 5 grains in 4 ounces of water. At the end of eight days the fistula was permanently closed (nine weeks from the day of operation) and a week later the patient left the hospital. For another week the catheter was worn at night only and the irrigation of the bladder was continued night and morning. She is now, more than three and half months after operation, quite well, with her wound firmly healed and no cystitis. Her urine is retained perfectly and is passed easily at normal intervals, and she says that she was never better in her life, and "feels as if she could do the whole work of the house" her weight, which prior to the operation had fallen to 7 stones 12 pounds, is now 9 stones.

The calculus is nearly spherical, measuring 12½ inches in its longest, and 11½ inches in its shortest, circumference, and in the recent state weighed 26½ ounces.* A large area of its surface is thickly studded with sharp projecting spines, which, no doubt, were responsible for the hæmaturia from which the

^{*} Dr. Hearne sent us a photograph of the stone, but from the measurements given it will be seen that a reproduction of this at the actual size could not have been included in our column. The rester will easily imagine a spiculated blob about 25 per cent. larger than a cricket ball.

patient suffered. The stone has not so far been opened, so that no examination as to the composition of the interior has been made, but Mr. Masson of the University of Melbourne (to whom I am indebted for an examination of the outer layer) reports that the fragments tested consist of calcium and magnesium phosphates, with a possible admixture of triple phosphates. The specimen has been presented to the museum of the Medical School of the University of Melbourne.

Mr. H. Littlewood, in THE LANCET of May 11th, 1907, p. 1315, gives a list of the largest calculi successfully removed up to that date. The largest weighed nearly 344 ounces and measured 6 inches by 4 inches diameter. was removed by Mr. H. M. N. Milton 1 at Cairo by abdominal section from an Egyptian fellah, aged about 60 years, who survived about two and a half months. During part of this time he was sufficiently recovered to go out in the hospital garden, but he eventually sank and died in the hospital from kidney disease, the power of expulsion having never been regained by the bladder, which was drained by a fistula. The second on the list was one of 24½ ounces removed by Sir Thomas Smith² at St Bartholomew's Hospital, London; this stone measured 13 inches by 92 inches in its longest and shortest circumferences respectively. The patient made a complete recovery.

In January of last year Dr. Owen Richards of Cairo successfully removed from the bladder of an Egyptian fellah, aged about 40 years, a stone weighing 32 ounces and measuring 4½ by 3½ by 2½ inches in its various diameters. The operator first endeavoured to crush the calculus with a lithotrite, but finding this impossible he removed it by fragmentation through incisions in the perineal and suprapubic regions. The patient left the hospital before the perineal wound was quite closed, but it is reported that when seen three and three-quarter months after the operation this was completely healed and that he had gained 12 pounds in weight and seemed in excellent health and spirits. His only disability was that when he walked about some urine dripped from his penis, and he had contrived to sling a little tin under it to keep himself dry. When he lay down he could hold his urine and pass it voluntarily.

This is the only successful case of which I can find any record in which a calculus of over 26 ounces has been removed since Mr. Littlewood's list was published. It would appear, therefore, that with the exception of the two Egyptian specimens removed by Mr. Milton and Dr. Richards respectively, the stone which forms the subject of these notes is the largest yet successfully removed of which particulars have been published.

With regard to the choice of operation, three methods present themselves—litholapaxy, suprapubic lithotomy, and laparotomy. In this case the calculus was so large and the patient so frail that I believe litholapaxy was out of the question, while the accompanying cystitis was so intense that any procedure involving the opening of the peritoneal cavity would appear to be admissible only as a last resort. Suprapubic lithotomy with fragmentation, therefore, was selected as the operation most suitable, this appearing to impose the smallest tax upon the patient's vitality. while at the same time providing a means of irrigating the bladder which might be expected to be of service in clearing up the cystitis. Fragmentation I expected to be able to effect by means of the lithotrite, but the largest instrument usually employed was absolutely useless. Dr. Richards in his case of a stone of 32 ounces (a male patient) used with marked success an osteotome and hammer, and very aptly points out that these large calculi can frequently be broken with light, sharp taps, while their inertia militates against the danger of injury to adjacent viscera, and one cannot help feeling that in the majority of cases such is the best means of dealing with them. In my own case this method was considered, but in the female the risk of damage to the pelvic organs from jarring appeared to me to be sufficiently great to make it desirable to remove the stone, if possible, by some other

In conclusion, I should like to express my indebtedness to Mr. Honman and Dr. Nattrass for their very able support during the operation.

Melbourne.

THE PLEA OF LUNACY IN THE CRIMINAL COURTS OF SCOTLAND.

BY JOHN GLAISTER, M.D. GLASG., F.R.S. EDIN., PROFESSOR OF FORENSIC MEDICINE AND PUBLIC HEALTH IN THE UNIVERSITY OF GLASGOW; EX-PRESIDENT OF THE FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW; MEDICO-LEGAL EXAMINER IN CROWN CASES, ETC.

A PLEA of lunacy in the case of a prisoner charged with a serious crime or grave criminal offence arouses always several important issues not only from the medical but also from the legal point of view. From the medical point of view it is not unimportant whether the plea is in bar of trial or in bar of sentence, and whether the plea is put forward by the Crown or by counsel for the accused. Except in certain cases in which the insanity of a prisoner is obvious there are not infrequently exhibited differences of opinion among medical witnesses, even among expert alienists, as to the existence of insanity, or at least of such departure from normal average mental ability as, in the former case, would disable or prevent a prisoner to instruct his defence and thereby prevent a trial, and in the latter case would prevent sentence being pronounced by reason of insanity existing at the time of commission of the crime charged. In the latter case, solution of the question is not rendered easier by the circumstance that the examination of the prisoner by the medical witnesses is always post fasto, may have to be conducted some time after the time of commission, and in these circumstances the insanity has to be inferred from the nature of the act itself, together with the history and conduct of the prisoner precedent and subsequent to the commission of the act. It is necessary for the medical witnesses in all such cases not only to form an opinion regarding the insanity of the prisoner, to state upon what grounds such opinion is founded, but also to advise the court as to whether the prisoner's mental state is such as prevents him from giving intelligent instructions for his defence, or whether at the time the crime was committed the prisoner knew the nature and quality of his act, or, if he did know, that he did not know he was doing what is wrong. All these questions involve grave and anxious consideration. While it is the duty of the court or jury to determine the question of responsibility, the court expects that the medical witnesses will be prepared to offer evidence which will enable them to so determine.

This opens up the whole vexed question as to the determination of responsibility in the opinion of the witnessesa question regarding which it cannot be pretended there exists any broad line of agreement among the members of our profession, even among alienists. There are some who are of opinion that the act of any person which destroys the life of another by directly applied violence is an insane act, that for the time being such person has lost all power of self-control, and ought, therefore, to be deemed irresponsible. Such a view, carried to its logical conclusion, would lead to the abolition of punishment for what is deemed by the law to be crime. and to the abolition of our present conception of what crime is, in respect that it pre-supposes the absence of selfcontrol during all such acts. Such a view, however, cannot be sustained in reason. Doubtless, persons vary considerably in their powers of self-control, just as they vary in their mental capability, but the law in theory and in practice pre-supposes that all persons should be able to exercise that measure of self-control as would prevent them by any unlawful act placing in jeopardy or putting an end to the life of another, unless there be such a defect or deficiency or absence of power of control, through disease of mind or otherwise, as to render them unfit to resist their impulses to destruction. Alienists differ amongst themselves regarding this normal average measure of self-control. No hard-andfast line can be drawn between two or more individuals, on one side of which it may be said that one was entirely capable of exercising control and was therefore responsible for his act, and on the other side of which another was entirely incapable of so exercising control and was therefore wholly irresponsible. It would be difficult for the law to decide upon fine-drawn distinctions as to full responsibility and complete irresponsibility; it can only be expected to decide regarding the average condition of mankind in that regard. In short, if the thing or entity which we call crime

THE LANCET, Sept. 16th, 1893, p. 687.
 THE LANCET, August 7th, 1886, p. 246.
 THE LANCET, July 25th, 1908, p. 231.

be but a manifestation of disordered mental function, then we ought to cease calling it crime, and instead of in prisons we should have to incarcerate in asylums those But the law has not reached who commit such acts. such conclusion, and is not likely to do so; and, it may be added, neither has the medical profession generally nor the intelligent public. So long as evil motives actuate mankind, and so long as jealousy, covetousness, revenge, and other similar qualities exist, it must be held that men will commit crimes, even of the most brutal and revolting character.

Moreover, there are some who aver that they see in the character of a crime itself good ground for considering that it was the act of an insane person. We have heard the opinion expressed in court of the insanity of an accused person that it was founded on the brutal nature of the act committed. This, it appears to us, does not in itself form a safe ground for such conclusion. It may, indeed, happen that the nature of the crime does indicate prima facie the existence of disordered mind in the perpetrator, but such a view requires to be buttressed by other evidence, such as may be found in the prisoner himself, in his past history or present

The usual procedure in a case in which insanity is placed in bar of trial and where both prosecution and defence are agreed is as follows. The accused person being brought to the bar, and before empannelling a jury, counsel for the accused or for the Crown, as the case may be, most commonly the former, calls witnesses to speak to the mental state of the accused and to his ability to instruct counsel for his defence. If the court is satisfied that the evidence proves such mental disability as renders the accused incapable of instructing his defence, the court will pronounce accordingly, and will order accused to be confined until His Majesty's pleasure is known. Where insanity is pleaded in bar of sentence the procedure is Such a plea involves the view that accused was different. of unsound mind at the time he committed the act, although he is not insane now. After the accused is placed at the bar he is asked to plead to the charge read against him. pleads not guilty. A jury is then empannelled and sworn to truly try him, and evidence of the commission of the crime is adduced in the usual manner. Counsel for the accused will likely either cross-examine witnesses adduced by the Crown in order to discover evidence of the accused's mental condition before the commission of the crime, at the time of arrest, and thereafter, or he may, in addition, call medical evidence to show that at the time the act was committed the accused was not of sound mind. The judge in his summing of the facts to the jury will not only indicate the bearing and value of the evidence led regarding the mental state of the accused, but will point out to the jury what questions they are bound to answer. The jury may return a verdict of guilty as libelled, a verdict of culpable homicide where the original charge was one of murder, or it may return a verdict that the accused committed the act but was insane at the time of commission. If the last-named verdict be returned the court will order the accused to be confined until the Royal pleasure is known.

Where insanity is pleaded in bar of trial the theory of the law is that if it be proved that the prisoner before and at the time of trial is incapable of instructing his defence because of mental disability, or because of his inability to communicate with or be communicated with by others by reason of physical disability, he is insane, and therefore cannot be tried. The two following cases illustrate disability of the latter kind.

In 1897 a man named Harris was charged before Mr. Justice Darling and a jury at the Central Criminal Court, London, with the crime of murdering his wife. After killing his victim he attempted to commit suicide by cutting his throat. The effect of his self-inflicted wound was to destroy his vocal cords, so that he was unable to speak. Neither could he read nor write. Hence he was unable to instruct his defence. The law of England is that punishment cannot follow a criminal act (1) where the accused is found to be insane; (2) or is mute from defective organisation; (3) or where the accused cannot plead from want of an adequate interpreter or an interpreter of any kind. This man being unable to speak, to read, or to write, was to all intents and purposes mute, and thereby was unable to instruct his defence. Mr. Justice Darling put certain questions to the

jury, in answer to which they found (1) that the prisoner could plead to the indictment; (2) that he was sane; (3) that he was not then capable of instructing his defence; and (4) that the cause of his disability was the result of his own unlawful act. The judge thereupon asked the prisoner to plead, whereupon he whispered "Not," and the judge ordered the trial to be adjourned till the next assizes. Harris was brought up for trial on Jan. 12th, 1898, before Mr. Justice Channell and a jury, and at the conclusion of the evidence was found guilty by the jury, who also found that he was responsible for his actions up to the time he committed the crime. The jury added a strong recommendation He was sentenced to death.1 to mercy.

The following is also an unusual case, viz.: The King v. The Governor of His Majesty's Prison at Stafford, En parte

A prisoner, who was totally deaf and could neither read nor write, was arraigned for a felony. Upon being arraigned, he stood mute, and a jury, duly empannelled and sworn for the purpose, found that he was mute by the visitation of God. The jury were sworn again to try whether he was capable of pleading to the indictment, and they found that he was incapable of pleading and taking his trial upon the indictment and of understanding and following the proceedings by reason of his inability to communicate with and be communicated with by others. Upon this finding, the judge, acting under Section 2 of the Criminal Lunatics Act, 1800, ordered him to be kept in custody until His Majesty's pleasure should be known. Held: That the finding amounted to a finding that the prisoner was insane within the meaning of the Act and that the order was properly made.²

The whole question from the legal side has been tersely and clearly put as follows :-

and clearly put as follows:—

In a strictly legal sense there is no insane criminal. Concode insanity, and the homicidal act is not criminal. The act of the insane, which in the sane would be criminal, lacks every element of crime. A sane man, who has committed crime, may thus become insane, either before or after conviction for the crime. He may be rightfully called an insane criminal. If the insanity develops before the trial, the law would suspend his trial while the insanity continued. If the insanity came after conviction, he should be treated as an insane man, not as a criminal. The medical mind frequently views the question of insanity as one of responsibility only. To the legal mind, insanity conceded, responsibility ends. If a man is clearly insane, he is not a criminal, even though "he has within him a tendency sufficiently strong to cause him to commit offences against both person and property." He needs care, and the State has the right, and it is its duty, to protect him from the consequences of his own mental condition. It is a question of fact, usually for the jury—is the man, or was the man, insane at the time the act was committed? If the jury says by its verdict he was insane, then the court sends him to an asylum for the treatment of the insane. If the verdict is that the prisoner is guilty, the effect of that verdict is that he was not insane, and the court sends him to prison. If the jury err, and pronounce an insane man guilty, he comes into prison by the side of the criminal who after conviction becomes insane. But there is, in fact, a wide distinction between them—the one is absolutely innocent of crime, because he was insane at the time of the act, and he is in no sense a criminal in fact. The other, who is a criminal in the eye of the law, has a "disturbed intervals."

The following cases, of which brief notes are given, strict in the send of the criminal who have lucid intervals.

The following cases, of which brief notes are given, tried before the Scottish Criminal Courts, have points of individual interest worthy of note and consideration.

interest worthy of note and consideration.

1. At the High Court of Justiciary held at Glasgow, September, 1902, a man was indicted on a charge of murder, he having shot another man in the throat with a revolver loaded with ball cartridge and killed him. Having made the post-mortem examination of the body of the deceased man we were in court during the trial and heard the proceedings. On the indictment was the usual list of witnesses. When the case was called the late Lord Young, who was on the bench, asked the Advocate-depute why there were so many medical witnesses in the case. The reply was that the Crown thought it desirable to ask two doctors whose names were on the list to examine the accused with regard to his mental condition lest a plea of insanity might be set for the accused if he was to found on a plea of insanity. To this counsel replied in the negative. Whereupon his lordship said that the two dectors in question need not be called, and might, therefore, be dismissed. The facts of the shooting were clearly proved. It was given in evidence that a quarrel had arisen between accused and deceased, that immediately thereafter accused journeyed into Glasgow, bought a revolver, and returned to the shoot of deceased and there shot deceased while sitting at a desk. Not a word was said by prisoner's counsel during the trial, either in cross-examination of witnesses or in his speech to the jury, which even hinted that the prisoner was of unsound mind. Lord Young, however, in addressing the jury, suggested to them that the man besonce of 25 minutes, the jury returned a verifict that the accused had committed the act with which he was charged, but that he was during His Majesty's pleasure.

Probably there was no one in court more surprised at the

Probably there was no one in court more surprised at the verdict than the prisoner himself.

2. At the High Court of Justiciary at Bdinburgh, on Sept. 18th, 1882, a man was tried before the Lord Justice-General and a jury on a change of

Session Papers, 1896.
 2 K. B. 81, 1909.

³ Medico-Legal Journal of New York, September, 1898, p. 288.

having murdered one of the lecturers of Surgeons' Hall and another

having murdered one of the lecturers of Surgeons' Hall and another man, by shooting them. Counsel for the defence contended that the prisoner was insane at the time of commission of the act, but he contented himself with leading that view by cross-examination of witnesses and did not call expert medical evidence. The Solicitor-General, who conducted the case for the Crown, in his address to the jury said that in view of the defence set up for the accused there were three possible verdicts before them—viz., guitty of murder, guitty of culpable homicide, or they might acquit the prisoner on the ground of insanity. Counsel for the prisoner argued that prisoner was insane, but if he had falled to prove that to their satisfaction he suggested that they should find that the prisoner had no felonious intent in his act, that he was not guilty of murder but of culpable homicide.

The Lord Justice-General in summing the case dealt with the alleged mental defect of the prisoner at the time he committed the act. He remarked that it had been said on prisoner's behalf that when he did these acts he was not morally responsible for what he was doing. His Lordahip did not understand that it was disputed that the prisoner was aware that he was shooting the men to death. The jury would probably think he was aware, and, if so, the question they would have to decide was: What was the effect of the mental alienation which was said to have existed, and which, it seemed to him from the evidence, did undoubtedly exist to a very considerable extent. He would say, however, that the mere fact of a person suffering from a certain degree of mental slienation or mental delusion would not necessarily exempt from criminal responsibility, and in order to exempt from liability to punishment insanity must amount to such an alienation of reason that the accused did not know the nature and quality, was in such a state of mind that he was not aware of what he was one awing the law, he was responsible. Unless they thought it was established that the enjoyed.

The jury returned a verdict of culpable homicide by a majority of

The jury returned a verdict of culpable homicide by a majority of 1, and the prisoner was sentenced to penal servitude for life.

3. Cumnock polsoning case. A man was brought before the same court at Edinburgh in March, 1907, on the charge that on Nov. 19th, 1906, he sent by post to W. L. in Old Cumnock a cake of shortbread having a covering or layer of icing adherent thereto, with which icing he had previously mixed a quantity of strychnine, his intention in so sending the cake being to poison the said W. L., and said cake having been delivered to the said W. L., a portion of said cake and icing was esten on Nov. 23rd by the housekeeper to the said W. L., in consequence of which she died, and that he did thus poison her and did murder her.

sending the cake being to poison the said W. L., and said cake and cing was eaten on Nov. 23rd by the housekeeper to the said W. L., in consequence of which she died, and that he did thus poison her and did murder her.

The Solicitor-General, who prosecuted, put forward the plea that accused was insane and incapable of pleading. This was opposed by counsel for the accused, who asked that a plea of not guilty should be accepted. On account of the unusual course which was proposed by the Crown, the special plea was heard before several judges. The Solicitor-General said that the ordinary procedure had been followed in the case. The accused had emitted a declaration on Nov. 29th before the Sheriff, and he was committed for trial on Dec. 8th. After the latter date, it came to the knowledge of the Public Prosecutor that accused was probably insane. Accused was thereupon placed under medical supervision, and reports from skilled medical men were obtained that accused was insane. At the pleading diet held in Ayr on March 8th, 1907, a medical certificate having been produced to that effect, the Sheriff-substitute did not call upon accused to plead. Accused was in the same condition now as he was then. The statutory procedure came under Section 87 of the Lunacy (Scot) Act of 1857 (20 & 21 Vict. cap. 71), which enacted that where any prisoner charged under any indictment for the commission of any crime was found to be insane, such prisoner could not be charged under such indictment; but nothing was said in that section whence the information of insanity might come to the court. If there was a doubt as to the analty of a prisoner, then an inquiry was to be held. While no reference was made in the Act as to the particular mode by which the inquiry was to be prosecuted, the established practice of the High Court. followed for more than a century, was that the investigation should be conducted by a judge without the intervention of a jury. The same section further enacted the procedure to be followed where, after the trial h

upon to plead at the pleading diet either directly or through a law agent, the reason urged for that being that he was insane. Coursel called the attention of the court to the danger of an exparts inquiry as to mental ability, as any law-abiding citizen might be arrested for a crime committed in any part of the kingdom, and in answer to his plea of innocence the Crown might, as now, plead his mental unsoundness. It seemed to him that the procedure in this case was ruled by the Criminal Procedure Act, 1887, Section 24, which made provision for the service of an indictment on accused persons, by Section 25, which provided for two diets of court, and by Section 29, which regulated the procedure to be followed at the first diet. The Crown here had adopted the two first-named sections by serving an indictment and by calling

It seemed to him that the procedure in this case was ruled by the Strinical Procedure Act, 1887, Section 23, which made provision for the service of an indictment on acoused persons, by Section 25, which provided for two diets of court, and by Section 25, which provided for two diets of court, and by Section 25, which provided to two diets of the procedure to be followed at the first diet. The Crown here had adopted the two first-named sections by serving an indictment and by calling upon accused to appear at two diets, but had failed to obtemper the procedure laid down in the last-named section in respect that accused had not been allowed to plead. His contention was that, having a service of the procedure of the procedure of Section 29. He (counsel) had been instructed by the accused to maintain his innocence, his instructions having been received direct from the accused, these being intelligent instructions and such as he might receive from a sane man. He therefore contended that the procedure at the pleading diet at Ayr was incompetent and irregular in respect that accused had not been permitted to plead, though willing, that the first diet being incompetent, there could be no trial, and that the court should discharge the accused, since he could not be tried under the Criminal Procedure Act, 1887. The Lord Justice-General pointed out that the Sheriff wasleft in the same position as the High Court now was under the Act; and Lord McLaren said that a prisoner suffered no prejudice whatever by not being asked to plead in the Sheriff Court. Since it was the law that whether a man pled guilty or not guilty in the Sheriff Court he could be asked, indeed was asked, in this court to plead again, and could withdraw or could modify the terms of a previous plea.

The court retired for consultation, and, on returning, the Lord Justice-General—Lord Dunedin—gave the judgment. He said it was clear from the cases cited that from a very early period it had been the prisoner should or should not be asked to plead. He agreed

stantial. Neither was there any motive disclosed for accused's alleged act.

In addressing the jury on behalf of the Crown at the conclusion of the evidence, the Solicitor-General said that the jury might have at least three questions to consider, but they might have only one. The first question was: Whether or not the prisoner was now insane. If they found the prisoner to be now insane, then they had no further questions to consider; they would not acquit him, and they would not convict him: they would simply find him insane, and he would be confined and be taken care of. His contention from the evidence was that the prisoner was now and had been suffering from chronic epileptic insanity. If, however, the jury took the view that the prisoner was sane, they would then have to consider whether or not he was guilty of the crime with which he was charged. No witness had seen prisoner despatch the parcel, and this was a case of circumstantial evidence—they must rely on a chain of facts all pointing in one direction or another. In his opinion that chain pointed unmistakably and unerringly to the prisoner as the man who despatched the parcel.

Counsel for accused submitted that the course adopted by the Crown was a weak and cowardly course. What right had the Crown to indict a fellow-citizen of a crime so helmous and detain him is gool for a period of 110 days, to indict him after he has been detained for 80 days, and then at the end of a three days 'trial say to them (the jury) that it did not matter whether he was guilty or innocent, and ask them to take upon themselves the responsibility of treating the prisoner as though he were guilty, and of pronouncing against him a verdict that he was in that state that he could not instruct counsel, and, further, that he was not entitled to have his innocence proclaimed? He as counsel for the prisoner had had the advantage which the jury had not had of

interviewing his client, and he had received from him the clearest and

interriewing his client, and he had roceived from him the clearest and myst specific instructions in connealon with the defence of his case. His contention was that the case of the Crown from beginning to end myst specific instructions in connealon with the defence of his case. His contention was that the case of the Crown from beginning to end secured and the writing with the sending of the cake. But in respect to the case of the case which indicated that more than one person had been engaged in the sending of the cake. But in respect to the case of the case of the person had been engaged in the son and on the label of the parcel political in the other day of Nov. 18th had been completely on the card of greeting from the day of Nov. 18th had been completely his having despatched any cake or of having mixed with it any cling, the ingredients of which contained the strychning and that it was an absolute and entire impossibility that the prisoner could have rarvial in Glasgow and his reaching the groes's shop. Moreover, there was no motive of the slightest sort or description suggested for the accounds acting as he had boon charged. He therefore implored them to the consequence of the case of the control of the case of the c

it seemed to him that the position of counsel was becoming reversed. He should have thought that prisoner's counsel would have tried to get him off by pleading that accused was insane, but instead of that counsel was maintaining that accused was sane and was, therefore, responsible for his actions. On the other hand, the Advocate-Depute, who prosecuted, suggested that the evidence might make out accused to be insane. Prisoner's counsel said that he had got notice that the Crown was to oppose a plea from the prisoner, but no notice had been taken by the Advocate-Depute of accused's alleged mental condition. His instructions from the prisoner were that before everything he was to be held sane by the jury. The Advocate-Depute had now stepped in with a new method of criminal procedure. The attitude of accused was that while he deliberately shot at the doctor it was for the purpose of bringing his case before the public, that while he did shoot he was very careful not to kill but merely to hurt the doctor as slightly as he could with the weapon he employed. Lord McLaren then saked: Should not accused have pleaded guilty? To this counsel replied that he had been given notice by the Crown that the question the Crown was to raise before the jury was, Whether the man was sane or not? The court was to understand that instead of defending accused on the ground of insanity, he made no such plea, but that accused was responsible for his actions. The Advocate-Depute said that the view of the Crown was that prisoner was a dangerous subject, and that it was an appropriate method to deal with him as a criminal lunatic, and that steps should be taken so that he might never get out of confinement again.

Two lunacy experts averred that prisoner was subject to delusional

again.

Two lunacy experts averred that prisoner was subject to delusional insanity, one of them even going the length of saying that accused had been insane since the beginning of 1903 and had continued so ever been insane since the beginning of 1903 and had continued so ever been insane since the beginning of 1903 and had continued so ever been insane since the beginning of 1903 and had continued so ever been insane since the beginning of 1903 and had continued so ever been insane since the beginning of the b

Since. Evidence for the prisoner was adduced by the prison surgeon and the assistant surgeon, under whose care accused had been while in prison, as well as by a police surgeon who also examined him, by two sons, by other relatives of prisoner, and by the prisoner himself. The medical witnesses said the result of their examinations of accused was that they Bytience for the prisoner was adduced by the prison surgeon and the assistant surgeon, under whose care accused had been whi, ein prison, as well as by a police surgeon who also examined him, by two sons, by other relatives of prisoner, and by the prisoner himself. The medical witnesses said the result of their examinations of accused was that they did not believe accused to be suffering from insane delusions. There might be what might be called delusions, but they were seed on factoring the surgeon of the surg

against the law, and had decided to take the punishment of his crime rather than be sent to a lunatic asylum. As prisoner had been found by the jury to have been of sound mind not only at present but at the time the orime was committed the must take it that accused forease as a case of sudden assault committed the must take it that accused forease as a case of sudden assault committed in the most take it that accused forease to receive the present of the property of the case of sudden assault committed to the statement that he did not mean to kill the practitioner, but as to be statement that he did not everyone knew that if one fired a shot, and espoting him bodily harm, everyone knew that if one fired a shot, and espoting him bodily harm, everyone knew that if one fired a shot, and espoting him bodily harm, everyone knew that if one fired a shot, and espoting him bodily harm, everyone knew that if one fired a shot, and espoting him bodily harm, everyone knew that if one fired a shot, and espoting him bodily harm, everyone knew that if one fired a shot, and espoting him bodily harm, everyone knew that if one fired a shot, and espoting him bodily harm, everyone knew that if one fired a shot, and espoting him bodily harm, everyone knew that if one fired a shot, and espoting him bodily harm, accused the take of the case exceed his analytic and the facts of the case exceed by a shot in the facts of the case exceed had considered his analytic had been confined in Perth Lunacy Prison, and having recovered his sanity had been liberated, but was immediately thereafter arrested. Accused pled not guilty to the charge, a special defence on his cehalf having been put in that accused was insane at the time when the crime was said to have been committed. Evidence was led respecting the circumstances of the shooting. A medical witness stated that before the commission of the deceased had consulted him about arenteal poisoning, and said to him that his relatives were promited to the crime him to the said and the fact the had

directed the jury that there was no room for the inea that the accused was in the eye of the law and in the present state of legal opinion not fully responsible for the act.

The jury unanimously found the prisoner guilty of murder. He was sentenced to death without any recommendation to mercy. The condemned man was taken to the prison of Ayr, where, according to the terms of the sentence, he was to be executed. There was no public petition for a reprieve; on the contrary, local opinion was in favour of the verdict. Preparations were in progress for carrying out the execution, the scaffold had been erected, and the public executioner was in the town. In some way, however, not publicly known, the Secretary for Scotland sent a commission of mental experts to Ayr 15 days after the trial, and six days before the date fixed for execution, with a view to further examination of the condemned man, and to report. What these experts reported is not known, but it is a rea-onable inference that from their examinations they did not find evidence to warrant them reporting that the convicted man was insane, because a respite only followed, which arrived 14 hours before the time fixed for execution, a respite not for the purpose of sending the man to a lunatic asylum, but, as events proved, for the purpose of sending him to penal servitude for life.

The foregoing cases show sufficient variations in the incidence of insanity in relation to the commission of crime and the practice of the law as are likely ever to come under the consideration of the Scottish Criminal Courts. But before discussing their details it will, perhaps, be well if the statutory enactments regarding procedure in cases in which insanity is pled in bar of trial or in bar of sentence should first be considered. These are to be found in the Lunacy (Scotland) Act, 1857 (20 & 21 Vict., cap. 71), ss. 87. 88. and 89, and in the Lunacy (Scotland) Act, 1862 (25 & 26 Vict., cap. 54), ss. 15 and 19.

Section 87 of the Act of 1857 reads as follows :-

Where any person charged under any indictment or criminal libel with the commission of any crime shall be found insane, so that such person cannot be tried upon such indictment, or if upon the trial of any person so indicted such person charged with such indictment or criminal libel shall appear to the jury to be insane, the court before

whom such person shall be brought to be tried as aforesaid shall direct a finding to that effect to be recorded, and thereupon such court shall order such person to be kept in strict custody until His Majesty's pleasure shall be known; and it shall be lawful for His Majesty to give such order for the safe custody of such person so found insane during his pleasure in such place and in such manner as to His Majesty shall seem fit.

Section 88 says :--

Section 88 says:—

In all cases where it shall be given in evidence upon the trial of any person charged under any indictment or criminal libel with committing any crime or offence that such person was insane at the time of committing such crime or offence, and such person shall be acquitted, the jury shall be required to find specially whether such person was insane at the time of the committing such crime or offence, and to declare whether such person was acquitted by them on account of such insanity; and if they shall so find and declare, the court before whom such trial shall be had shall order such person to be kept in strict custody in such place and in such manner as to the court shall seme fit, until His Majesty's pleasure shall be known; and it shall be lawful for His Majesty to give such order - [&c., as in previous section].

Section 80 provides for the case of a prisoner who exhibits

Section 89 provides for the case of a prisoner who exhibits insanity when in confinement as a prisoner under any sentence or under any charge of any crime or offence, or under any civil process. In such case the sheriff shall inquire, with the aid of two medical persons, as to the insanity of such prisoner, and if it shall be certified by such sheriff and such medical persons that such prisoner is insane, it shall be lawful for one of His Majesty's Principal Secretaries of State, upon receipt of such certificate, to direct by warrant under his hand that such person shall be removed to an asylum as the said Secretary of State may judge proper and appoint; and every prisoner so removed under this Act from prison to an asylum by reason of his insanity shall remain in confinement in such asylum until it shall be duly certified to one of His Majesty's Principal Secretaries of State by two medical persons that such person has become of sound mind, whereupon the said Secretary of State is hereby authorised, if such person shall remain subject to be confined in custody, to issue to the superintendent of such asylum directing that such person shall be removed back from thence to the prison or other place of confinement from whence he shall have been taken, or, if the period of confinement of such person shall have expired, that he shall be discharged.

Section 15 of the Act of 1862, which repealed Section 85 of the Act of 1857, provides that when the lunatic shall have been apprehended, charged with assault or other offence inferring danger to the lieges, or when any lunatic shall be found in a state threatening danger to the lieges or in a state offensive to public decency, it shall be lawful for the sheriff of the county in which such lunatic may have been apprehended or found, upon application of the procuratorfiscal or inspector of poor or other person, accompanied by a certificate from a medical person bearing that the lunatic is in a state offensive or threatening to be offensive to public decency, forthwith to commit such lunatic to some place of safe custody. Thereafter the sheriff shall give public notice that he proposes on a date to be named in such notice to inquire into the condition of such lunatic. Section 19 deals with the procedure to be followed in the case of any convict or person confined in the General Prison at Perth who at any time within 60 days of the expiration of his sentence is certified to be insane, and for the treatment of such convict or person, if thought fit, in an asylum rather than in prison.

Having briefly glanced at the law on the subject of lunacy in relation to criminal matters, I propose now to deal with the cases already discussed. It will be observed that each of these cases bears some individual peculiarity which differentiates it from the others.

In the first case the peculiarity consists in the fact that although there was no plea of insanity, nor indeed any insanity founded upon, the judge was the first and only person to suggest in his directions to the jury in anity in the prisoner. This appeared to be at the time, as it really was, a most unusual procedure. While it is unquestionably the duty and function of a judge to see that every prisoner has a fair trial and that nothing is lost sight of which may be put in his favour, it is the fi st case within my knowledge where, a prisoner being defended by senior and junior counsel, and insanity has not been any part of the defence, the judge interposed his suggestions of the insanity, and therefore the irresponsibility of the prisoner. It would almost seem as if the judge had believed that the prisoner had not been efficiently defended.

The second case differs from the first. Here there was evidence indicative of some measure of mental unsoundness:

but although the judge said to the jury that the evidence led pointed to the fact that the prisoner had got into a condition of ill-health, mental and physical, different from that which he had formerly enjoyed, the jury found the prisoner guilty of culpable homicide by a majority of one.

The third case seems at first sight to be somewhat extraordinary. One cannot help thinking that the proper method of reaching the true conclusion in this case had not been adopted, while at the same time it is not easy to suggest a Doubtless the element of unsatisfactoriness consists in the fact that an accused man whose sanity and fitness to plead had been challenged at the beginning of the case, and who had been found to be insane at its finish, had been permitted to plead, and also, perhaps, because after being permitted to plead and after all the evidence had been led on both sides, no finding was required of the jury as to whether or not the accused committed the act charged against him. The case is further noteworthy in that it signalised a notable departure from the practice of the courts in like cases. For the previous century, when a plea in bar of trial on the ground of insanity had been put in, the practice was for the court, without the aid of a jury, to determine the issue, irrespective of whether the plea had been put in by the defence or the question had been raised by the prosecutor. In this case, it will be remembered, the issue was raised by the The last previous case in which similar circumstances obtained was the somewhat famous case of Alexander Robertson, alias "Dundonnachie," which came before the High Court of Justiciary at Edinburgh on March 30th, 1891. The question of the sanity of Robertson having been raised before the court, Lord Justice Clerk Macdonald (Lord Kingsburgh) himself determined the issue without the aid of a jury. In all the cases in which I have been engaged where the plea of insanity in bar of trial was raised by the defence, the issue was always determined by a judge alone. According to the same authority, "Where such a plea is tendered, proof in regard to it may be taken by the judge without impannelling a jury. If present insanity is proved, the court find that the accused cannot be tried, and order him to be confined until the Royal pleasure be known. Although no question as to sanity be raised by the accused, the prosecutor may raise the question, and the court, if they shall see cause, will, ex proprio motu, investigate whether the accused be a fit subject for trial or not ""

It is not unlikely that the procedure in the third case would have been in accordance with former practice had the question of the man's insanity not been strenuously contested by his counsel, who, as events showed, contented himself merely with a general denial of the averment of insanity and did not adduce any medical evidence to rebut that of the Crown. It seems clear that had the plea in bar of trial been determined by the court without a jury there could have been no trial. As the facts are, however, we behold a prisoner whose sanity is disputed, and who is found insane at the end of his trial, being permitted to tender a plea—a circumstance which could not have happened had the issue of insanity been determined first by the court. Apart altogether from the question of the sanity of the accused, and solely on the evidence led to connect him with the commission of the crime charged against the light of the evidence which was led, that any jury, supposing they had had the chance of returning a verdict, could have returned one of guilty as libelled. The only connecting link, if such it may be called, was the alleged similarity of the handwriting, and it is difficult to imagine, in view of the case of Adolf Beck, which doubtless would have been brought before the notice of the court, that the jury would have convicted a man for murder on mere identity of handwriting. It is, perhaps, true that the accused here did not suffer any substantial harm from the course adopted, because by their verdict the jury did not pronounce on the charge itself; at the same time, owing to the fact that the prisoner was allowed to plead and the trial to proceed, and evidence regarding the possible commission of the crime was adduced. the absence of a finding by the jury on the merits left the case undetermined and a certain stigma to remain on the character of the accused in the minds of the general public. It seems to me that the same effect, so far as the accused was concerned, would have practically followed had the questions

submitted to the jury for answer been put in a different order. One difference probably would have resulted-vis., that if the jury had answered the second question first, and if the jury had returned a verdict of not guilty or not proven, and if they had then answered the first question in the affirmative, seeing that the issue had been raised in the commencement of the case, the destination of the accused would probably not have been a criminal lunatic asylum but a private asylum, on his friends undertaking to the satisfaction of the court that such would be done. It will be noted that the jury had all the facts before them on which to found a verdict on the merits, but they were precluded from that course by finding a verdict that the accused was now insane. Had the questions been put in the following order such a result as has been indicated would have been possible, viz.:—(1) Did the prisoner send this poisoned cake? (2) Is the prisoner now insane? and (3) If not now insane, was he sane or insane when he did it? This last question, of course, could only require an answer if the jury found that the act had been committed by the prisoner. But putting the questions in the order in which they were presented to the jury by the court, an answer in the affirmative to the first stopped the proceedings, since that answer involved a finding that the prisoner was unable to instruct a defence, and, therefore, could not plead. But if in the light of the evidence adduced we are warranted in the assumption that the jury could not have returned an affirmative answer to the question, Did he send the poisoned cake? we cannot assume that it would be good law to then ask the jury to answer the question, Was the prisoner insane now?

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Had the case occurred under English procedure, the problem, I think, would have been solved more easily and more satisfactorily. On the question of the insanity of the accused being raised a jury would have been empannelled and sworn to determine the issue whether or not the accused was fit to plead. If a negative answer was returned by the jury, the accused would then be ordered into confinement to await the Royal pleasure. But if an affirmative answer were given, the jury would again be sworn to try the accused, who would be called upon to plead to the indictment, and the trial would proceed, and the jury would return a verdict. I do not pretend to be able to say, now that the former practice of the Scottish courts has been changed where the question of the insanity of a prisoner is raised by the Crown, whether the powers contained in the Lunacy (Scotland) Acts permit the question of the fitness of such a prisoner to plead to be put as a preliminary inquiry before a jury. It is quite clear, however, that a jury empannelled to try such an accused person as Brown, whose sanity is challenged by the Crown, but which challenge is resisted by the accused, can determine the issue—whether or not the accused is now sane. The decision of the bench of judges appears to us to have been founded on Section 87 of the Act of 1857, which we have already quoted. It will therein be seen that "where any person charged under any indictment or criminal libel with the commission of any crime shall be found insane, so that the person cannot be tried upon such indictment the court before whom such person shall be brought to be tried as aforesaid shall direct a finding to that effect to be recorded, and thereupon such court shall order such person to be kept in strict custody until His Majesty's pleasure shall be known"; but the section goes on to say, "or if upon the trial of any person so indicted such person charged with such indictment or criminal libel shall appear to the jury to be insane" the court shall direct a finding to that effect to be recorded, &c. The reading of the section seems to indicate two alternative methods of procedure, the first not being a trial in respect that the accused is not called upon to plead because of his being found to be insane, the second, however, being a trial, the accused having pleaded and a jury having been empannelled to try Section 88 deals with the case of any prisoner where it shall be given in evidence upon the trial that such person was insane at the time of committing the crime or offence with which he is charged. It will be seen in the questions put to the jury by the Lord Justice-General that the procedure in this section was also included. Reviewing the whole procedure in this case one cannot help coming to the conclusion that where a man charged, as this man was, with so dastardly a crime, is not called upon to plead at the pleading diet because of his having been certified to be of unsound mind and unable to instruct his defence, and whose sanity was

^{4 3} White, 6.
5 Macdonald: Criminal Law of Scotland, third edition, p. 431.

questioned in the same way precedent to his trial, he should either have been subjected to an inquiry as to his fitness to plead, or, having been allowed to plead, that the jury ought to have been called upon to say whether or not from the evidence he committed the act charged against him.

The fourth case which we have cited is exactly similar to the case just discussed up to and including the point of procedure where the accused is allowed to plead. It differs, however, from it in the following particulars—(1) there was no doubt that the accused committed the act charged; (2) that accused had already been incarcerated in an asylum for a few months some time previously, but had been discharged therefrom on an action of liberation; (3) evidence was adduced at the trial on behalf of accused by medical witnesses and others to rebut the testimony of the Crown doctors as to his insanity; and (4) accused himself gave evidence on his own behalf, thereby affording an opportunity to the jury to form an opinion for themselves on the question of his sanity or insanity from his behaviour. demeanour, and mode of witness-giving. In the previous case the accused was incarcerated in an asylum on account of an alleged crime which was not proved against him; in this case no attempt was made by the accused to deny the crime charged against him, but he declared himself to be some and that he would rather suffer ten years in prison than suffer incarceration in an asylum. Both cases are alike in that the whole case -alleged insanity and alleged crime-was placed before a jury, but while in the previous case present insanity was proved the alleged crime was not proved; in this case the alleged crime was proved and the alleged insanity was not proved.

The fifth case, which may be called the Wigtownshire case. contains also certain points of interest respecting lunacy procadure associated with crime. The accused, soon after the commission of the act of shooting and killing his aunt, was sent to an asylum—Perth Lunacy Prison—by the authorities under the terms of the Act of 1857, Section 89, or of the Act of 1862, Section 15. After a residence of eight years in that place he recovered his sanity, was liberated, but was at once arrested on the charge of murder. At his trial the fact that he was found to be insane at the time of committing the act and was placed under care in Perth Lunacy Prison was sufficient evidence of non-liability for the consequences of his act, and the evidence of the medical witnesses satisfied the court that he had now recovered his sanity. But although he was acquitted by the jury on the ground of his insanity at the time, he could not be there and then liberated by the court, but could only be freed after petition and by order of a Secretary of State.

The last case cited (Case 6) is in some respects the most extraordinary case of the series. Here was a man who brutally murdered his wife, who was duly tried and duly defended, whose mental condition had been examined by medical persons who could not, however, declare him to be of unsound mind, who is found guilty and is sentenced to death, on whose behalf there was no recommendation to mercy by the jury nor petition for reprieve by the public, but whose execution does not take place owing to what seems a very unusual intervention of the Secretary for Scotland. It is not publicly known at whose instance the attention of the Secretary for Scotland was called to the case, but the fact remains that by his instructions a comsission of lunacy experts was sent 15 days after the trial and six days before the date of execution to the prison in which the condemned man was confined for the purpose of examining him. These experts are presumed to have reported to the Secretary for Scotland, but what was contained in their report is not publicly known. It was publicly announced, however, several hours before the time appointed for the execution to take place that he was reprieved and his sentence respited to penal servitude for life. This procedure gave rise to considerable discussion at the time, and one of the questions then canvassed was the legal position of the Secretary for Scotland in so acting. I have not been able to discover by what powers under the Scottish Emacy Acts the Secretary for Scotland acted. There is a form of procedure in Section 89 of the Act of 1857 which provides that "in the case of a prisoner who exhibits insanity when in confinement as a prisoner under any sentence or under any charge of any crime or offence or under any civil process, the sheriff shall inquire, with the aid of two medical meens, as to the insanity of such prisoner, and if it shall

such prisoner is insane, it shall be lawful for one of His Majesty's Principal Secretaries of State, upon receipt of such certificate, to direct by warrant under his hand that such person shall be removed," &c. This procedure does not seem to have been followed in the present case, because the condemned man was not respited during His Majesty's pleasure, but respited to penal servitude for life; for if a certificate of insanity after inquiry had been sent to the Secretary for Scotland, the condemned man would have been removed from prison to an asylum, and would not be condemned to penal servitude for life.

It has been suggested in some quarters that this points te a movement toward the abolition of capital punishment. It is only human that juries should shrink from returning verdicts which involve the lives of prisoners, and, perhaps, the histories of several recent cases show a trend of opinion in this direction. I offer no opinion on the question of the propriety or otherwise of such abolition, but so long as capital punishment finds a place on the statute-book the same should be awarded where the law demands it until it be recealed.

Glasgow.

Clinical Hotes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON AN INTERESTING CASE OF MELANOTIC SARCOMA.

BY HENRY BURNS, M.B., CH.B. EDIN., SURGEON, ROTAL MAYY; HOUSE SURGEON TO THE DUMPRIES AND GALLOWAY BOYAL INFIRMABY.

The patient, a man 25 years of age, was admitted to the Dumfries and Galloway Royal Infirmary on July 13th, 1909. His family history was good and free from any story of malignant disease. The personal history showed that about eight months before admission, while at work as a mason, a large stone fell on his left inguinal rezion. He quite recovered from this accident in a few days and resumed work. Three weeks before admission he noticed a swelling in his left inguinal region and another on the back of his left heel, but he could not state which appeared first. The swellings were neither painful nor tender. That in the groin, at first quite small, gradually grew larger and "black spots" appeared in the skin over and around it; that on the heel, he said, consisted of a hard mass, painful only when his boot pressed upon it, and about the size of a halfpenny. About ten days before admission he observed small black swellings on other parts of his body, chiefly on his chest. He stated that he had been losing weight and strength for some time.

On examination numerous swellings could be seen and felt in the upper part of Scarpa's triangle and in the inguinal region of the left side. They varied in size from that of a pea to that of a walnut; they were hard and neither painful nor tender. The skin over them and for a considerable distance around was studded with small black spots, the whole having a very mottled appearance. On the back of the left heel a swelling, with a circumference equal to that of a four-shilling piece and projecting about a quarter of an inch beyond the skin surface, could be seen. It was coal-black and densely hard, and neither painful nor tender. On other parts of the body—the chest, abdomen, axillæ, and limbs—small lumps could be seen and felt scattered about in the subcutaneous tissue, the ones nearer the surface being black. These were fairly hard and neither painful nor tender. The left lower limb was greatly swellen and cedematous. The patient was quite cheery about himself and his condition. The breath-sounds cheery about himself and his condition were harsh in character. The liver was not enlarged, and the urine contained melanin. A small lump was excised from the left forearm and examined. It showed the structure of a melanotic sarcoma.

in confinement as a prisoner under any sentence or under any charge of any crime or effence or under any civil process, the sheriff shall inquire, with the aid of two medical persons, as to the insanity of such prisoner, and if it shall be certified by such sheriff and such medical persons that

The breathing was now somewhat laboured and the breath sounds were harsher in character. The left leg became more cedematous and ascites developed. By the 20th the mass on the left heel had broken down and so also had a swelling in the right gluteal region. The black nodules had greatly increased in number all over the body and one had appeared on the forehead. The breathing was more laboured and cough had started. The patient was now very depressed and could not sleep except under the influence of morphine. There was dulness over both bases of the lungs and the anterior edge of the spleen could be palpated. On the 26th the abdomen was extremely ascitic and was tapped, 200 ounces of yellowish fluid being drained off. A Southey's tube was inserted. For the next three days the amount of fluid drained off was 50, 62, and 25 ounces respectively. Breathing became very difficult and cough very troublesome. The patient became very restless. On the evening of August 30th he became very cyanosed and died in a few minutes. Throughout the whole course of his illness he never once complained of pain.

Post-morten examination.—The abdomen and pleural sacs were full of fluid. The omentum was densely infiltrated with the growth and was absolutely black all over. The stomach was affected, as were also the small intestine, large intestine, and rectum. In the liver were several small scattered black nodules; it was slightly increased in size. The spleen was enlarged and had numerous small nodules in it. On cutting it a growth of about the size of a Tangerine orange was discovered and was easily shelled out. The kidneys were not affected. The bladder had numerous nodules in its walls. The peritoneum was studded with nodules. Both lungs were infiltrated with the growth and nodules were found in the pleura and pericardium. The mediastinal tissue was also infiltrated. The sternum itself was black with the growth and could be broken fairly easily. Neither testicle was affected, but the scrotal tissues were greatly indurated. The swellings in the left inguinal region and on the left heel were black all through.

Dumfries.

A NOTE ON THE REMOVAL OF FOREIGN BODIES FROM THE STOMACH.

BY BILTON POLLARD, F.R.C.S. ENG., SURGEON TO UNIVERSITY COLLEGE HOSPITAL, LONDON.

I HAVE recently extracted a two shilling-piece from the stomach, of a girl, aged 15 years, without cutting into the stomach, in a way which I have not hitherto seen mentioned, and a short note on the method adopted may perhaps be of interest.

The method was as follows. The operator opened the abdomen by a longitudinal incision through the upper part of the left rectus muscle and seized the coin through the wall of the stomach with his finger and thumb; an assistant passed a flexible forceps, described below, by the mouth into the stomach. The coin was adjusted in the grip of the forceps and care was taken to avoid inclusion of mucous membrane; the assistant then withdrew the forceps and with it the coin.

The method of extraction outlined above was devised by me several years ago in order to remove a halfpenny from a little child's stomach, but it was not then put into practice as the coin was eventually passed per vias naturales. For that case I had had a long flexible forceps made after the pattern of Durham's tracheal forceps. The principle of the forceps is the same as that of Toynbee's well-known forceps for the ear. The blades of the instrument, which when uncontrolled spring apart, are fixed to a piece of copper wire, around which a tube composed of spirally coiled wire is placed. The instrument is operated by the handles in such a way that the wire tube slides over the blades of the forceps and brings them firmly together.

For the extraction of the two-shilling piece this instrument was passed with the blades closed. The coin was removed at the first attempt in the way already described. No resistance was felt when the coin passed through the cardiac orifice, nor indeed at any part of its transit through the cesophagus. The abdominal incision was sutured in layers and the patient made a normal recovery.

Harley-street, W.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

LARYNGOLOGICAL SECTION.

Exhibition of Cases and Specimens.

A MEETING of this section was held on Nov. 5th, Dr. J. DUNDAS GRANT, the President, being in the chair.

The following cases and specimens were shown:-

Mr. G. SECCOMBE HETT: Post-mortem specimens from a case of Chronic Glanders in a man aged 24 years. The principal visible lesions during life had been ulcerations within the mouth, nose, and pharynx. In the lungs and liver the strong resemblance to tertiary syphilitic lesions was noted.

Dr. Dan McKenzie: Perforation of the Nasal Septum from Salt Dust in a woman employed in a salt factory. Three other females, out of a total of eight employees, were affected to a less extent. Microscopical sections from the marginal tissues showed typical giant cell systems.

Dr. STCLAIR THOMSON: 1. A woman, aged 46 years, affected with Tuberculosis of the whole of the Left Vocal Cord and the Interarytenoid Space, in whom consolidation of the right apex had been diagnosed. The lesions were completely healed by two months' silence and sanatorium treatment. 2. Two patients, in whom Tuberculosis of the Epiglottis, Cords, Interspaces, and Folds of the Larynx respectively had been arrested by galvano-cautery and sanatorium treatment. It was pointed out that tuberculosis developing in the larynx after the process had been arrested in the lungs did not generally assume an acute form, but was apt to become extremely tedious; also that, in spite of a fair amount of active mischief in the chest, the temperature began to improve with the improvement in the larynx. 3. Papilloma of the Larynx in a boy, aged 6½ years, of four years' duration, cured by trachentomy and repeated operations with direct laryngoscopy. This case showed the persistent recurrence of papillomata in spite of frequent and complete removal and the natural tendency of the disease to disappear about the age of 6 years. It also emphasised the advantage and harmlessness of wearing a tracheotomy tube, and occasion was taken to decry the useless and crippling employment of laryngo-tracheotomy, as recently proposed, in these cases. 4. A woman, aged 56 years, a ter Laryngofissure for Subglottic Enchondroma. After having previously shown before the section in 1908 by Dr. A. Stanley Green and Dr. H. Lambert Lack, the enchondroma had been finally removed by laryngo-fissure by Sir W. Watson Cheyne.

Dr. W. Jobson Horne: A case of Laryngeal Neoplasm presenting Unusual Features in a woman, aged 65 years. The growth occupied the posterior half of the right side of the larynx and appeared to spring from the ventricle or ventricular hand. Pieces had been removed at intervals for microscopical examination, and these sections were referred to the morbid growths committee for report.

Mr. W. STUART-LOW: Three cases of Inoperable Carcinoma, extra-laryngeal, pharyngeal, and lingual respectively, in whom ligation of the thyroid vessels for partial ablation of the enlarged thyroid gland had been performed with great benefit.

The PRESIDENT: 1. Infiltration of the Left Ventricular Band. The patient was a woman, aged 62 years. The infiltrated band bulged so as to cover the whole of the left cord and the anterior part of the right one, occasionally dipping between the cords and preventing approximation. Microscopical examination revealed only inflammatory hyperplasis, and the diagnosis lay between neoplasm and tuberculosis. 2. Epithelioma of the Right Vocal Cord in a man, aged 60 years; removal by thyrotomy. Microscopical examination of the conical outgrowth below the right cord showed early epithelioma. At the operation the right vocal cord with portion of the right arytenoid cartilage were removed and the underlying cartilage was freely scraped. The patient returned home nine days after the operation greatly benefited.

The PRESIDENT and Dr. McKenzie showed a case of Epishelioma of the Left Vocal Cord Removed by Thyrotomy.

Mr. H. CLAYTON FOX: Paralysis of the Right Vocal Cord

in a case of Myotonia Atrophica in a man, aged 57 years, who was exhibited in May, 1908, when the opinion of a neurologist was recommended. Dr. Frederick E. Batten supplied an analysis of the case, which was now shown to elicit opinions as to whether the laryngeal lesion was part of the general condition or otherwise.

Dr. IRWIN MOORE showed a case of Partial Fixation of the Left Vocal Cord of 21 years' duration in a man aged 57

vears.

Mr. NORMAN PATTERSON: A case of Swelling on the Left Side of the Neck accompanied by Dyspnœa in a male, aged 28 years, for diagnosis. The swelling was opened and the dyspnœa relieved. A sinus remained, along which a probe could be passed for a considerable distance. There was a globular swelling in the region of the left arytenoid and there were signs of tuberculosis of the right apex.

Dr. H. J. DAVIS: A case of Acute Pemphigus of the Larynx in a woman, aged 40 years. Seven days previously dysphagia and loss of voice intervened. There were bulke all over the body, and the mucous membrane of the nose, lips, tongue, and pharynx were also affected. The condition of the fauces somewhat resembled secondary syphilis. The larynx was raw and blistered, and the cords were a brilliant crimson.

Dr. D. R. PATERSON: Soft Foreign Body in the Bronchus of a child, aged 6 years. A portion of "ground nut" (Arachis hypogea) had been impacted in the right bronchus for six weeks. It was removed entire, under chloroform through a 7 mm. tube by means of a telescopic forceps having the fenestrated "bean" point. The child made a good recovery.

Dr. G. WILLIAM HILL: (1) A man recently operated on for Epithelioma of the Vocal Cord and ventricular band by laryngo-fissure (a new operating laryngoscope was used); (2) two cases of Malignant Tumours of the Neck to show improvement under treatment by radium; and (3) Epithelioma of the Nasal Vestibules; surgical removal followed by recurrence; now being treated under radium.

BALNEOLOGICAL AND CLIMATOLOGICAL SECTION. Presidential Address.

A GENERAL meeting of this section was held on Oct. 29th, Dr. ERNEST SOLLY, the President, being in the chair.

The PRESIDENT announced that in pursuance of a resolution passed at the last general meeting the British Balneological and Climatological Society had become converted into a section of the Royal Society of Medicine, dating from Oct. 1st. Dr. Solly then vacated the chair, which was taken by the new President, Dr. LEONARD WILLIAMS. A vote of thanks was proposed to the President, the officers of council, and the secretaries by Dr. Theodore Williams, and seconded by Mr. W. LOVE, and responded to by Dr. Solly, Dr. F. BAGSHAWE, Dr. R. FORTESCUE FOX, and Dr. F. A. DE T. MOUILLOT.

An ordinary meeting was then held, Dr. LEONARD WILLIAMS, the President, being in the chair.

A paper by Mr. J. J. EYRE (Naples), entitled "The Hygiology of Naples," was brought forward and taken as read.

The PRESIDENT then delivered his address entitled "To Redress the Balance," which was published in THE LANCET of Oct. 30th.

Dr. HARRY CAMPBELL proposed, and Dr. G. W. HAMILTON CUMMING seconded, a vote of thanks for the address, and the President replied.

At 7.30 the same evening the annual dinner was held at Oddenino's Restaurant, Dr. W. Hale White, Dr. H. D. Rolleston, Dr. W. P. Herringham, and Dr. Septimus Sunderland being the guests of the section.

During the evening a presentation was made to Dr. Sunderland in recognition of his services to the society.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION.

Antisoptic Inhalations in Early Pulmonary Tuberculosis.—
The Pharmacological Action of Apocynum Cannabinum.

A MEETING of this section was held on Nov. 2nd, Professor A. R. Cushny, the President, being in the chair.

Dr. DAVID B. LEES read a paper in which he strongly advocated the use of antiseptic inhalations in early pulmonary tuberculosis. Wearing continuously an oro-nasal respirator never developed into professional advocates. The system.

of a simple pattern, the patient inhaled the vapour from a solution of carbolic acid, creasote, spirit of ether, and spirit of chloroform. He considered that by this means the disease had been effectually cut short in a series of 30 cases, particulars of which he gave.—The paper was discussed by Dr. W. EWART, who emphasised the fallibility of physical signs. There were present, even in health, great differences in the character of the percussion note and the breath sounds.—Dr. J. GRAY DUNCANSON agreed with Dr. Lees that inhalations were of great value in lessening cough and expectoration.—The PRESIDENT doubted if the effect could be correctly described as antiseptic. The vapour could only be inhaled in very small concentration.

Dr. H. H. Dale read a paper upon the Pharmacological Action of Apocynum Cannabinum. He traced the history of the drug and the vicissitudes which its reputation had undergone. By some it had been dismissed as worthless, by others it had been described as an unfailing specific for dropsy, ascites, and even hydrocephalus. Working independently two recent investigators had each isolated a crystalline substance from the commercial apocynum which was shown by Mr. P. P. Laidlaw and himself to possess a marked digitalishe action. This substance, unlike the crude preparation, possessed no emetic and no cathartic action. Independently of its action upon the heart and blood pressure no specific diuretic effect could be demonstrated. Dr. Dale illustrated his paper by throwing upon the screen records of the heart beat, blood pressure, and urinary outflow which showed the characteristic action of the drug.

MEDICO-LEGAL SOCIETY.

Presidential Address by Sir John Tweedy.

THE first meeting of the session of this society was held on Oct. 26th.

Sir JOHN TWEEDY, the President, delivered an opening address on the Historic Status of the Professions of Law and Medicine. In studying the history of surgery, he said, he had often been impressed by the frequency with which law and medicine had been found in juxtaposition, sometimes, it was true, at variance, but more often in association as joint labourers in the advancement of knowledge and in the struggle for freedom of thought. It was indeed remarkable how the status and vicissitudes of these two professions had been affected and influenced by the social, economic, religious, and political life in different countries and in different ages. In the Middle Ages law and medicine were the only two secular studies, and they stood in somewhat similar relations both with respect to society and to ecclesiastical authority. During the period of the invasions of the barbarians in western Europe from the fifth to the ninth centuries the scanty remnants of learning were almost entirely in the hands of ecclesiastics, and the practice of medicine was almost monopolised by the regular clergy. Many monks after taking the vow and assuming the habit left their monasteries to follow the secular callings of law and medicine, and so common did the practice become that in the twelfth and thirteenth centuries various councils of the Church or bulls of the Popes forbade the monks to study either civil law or medicine. It was further decreed that anyone leaving a monastery for this purpose without special permission and not returning within two months should be excommunicated. The effect of this upon the practice of medicine was to create a division between surgery and medicine. Many ecclesiastics continued to practise as physicians, but being forbidden to engage in surgical operations, either propter indecentiam, or in accordance with the maxim ecclesia a sanguine abhorret, abandoned surgery to laymen and came to despise it as a mere handicraft. Such was the origin of modern surgery.

If we cast our glance backwards to ancient Greece and ancient Rome we find a remarkable dissimilarity between the relative status of the two professions. In ancient Athens, while medicine was highly organised, professional lawyers had scarcely come into existence. Hired advocates were expressly forbidden in courts of law, every citizen being presumed by law to be capable of pleading his own cause. A nervous or inexperienced speaker could obtain permission from the judges to call a "friend" or relation to support him, but these friends

however, created a class of men who made a business of composing speeches to be learned and delivered by others, but the name " $\lambda o \gamma o \gamma \rho d \phi o s$ " was a reproach, and the perfection of the composer's art was to mask his identity and to disguise his legal learning. This, be it remembered, was at a time when Hippocrates, the Father of Medicine, was collecting or compiling that great body of medical doctrine and practice which dominated Europe for 20 centuries and became the true source of modern medicine.

In ancient Rome, on the other hand, there were but two professions-arms and law. By the one it has been said the Romans conquered the world; by the other they governed it. Medicine as a profession can hardly be said to have existed at all at this time, and the treatment of disease was chiefly by traditional family recipes founded partly on experience and partly on superstition. Most of the physicians who practised in ancient Rome were Greeks, some doubtless mere adventurers, who flocked to the city in search of fame or wealth. There were no legal ordinances regulating the character of medical training, and students acquired their knowledge how and where they liked. The remarkable difference between the position and status of lawyers and medical men in ancient Greece and in ancient Rome was apparently determined by the ethnological, social, and political differences of these two great peoples. All the Greeks claimed a close relationship and a common origin. The Greek citizen was a pronounced individualist and possessed "the love of freedom without the spirit of union." The Romans, on the other hand, were a people made up of many races, and in Rome individualism was suppressed and its activity transformed into a collectivism which concentrated all its energies and activities upon the affairs of the State.

Turning again to the Middle Ages, we find the character and subjects of study largely determined by social, religious, and political conditions. The cloister was the retreat for the learned, and the only subject that was thought worthy of serious study was theology as a preparation for the calling of priest or monk. In the great University of Paris in the twelfth and thirteenth centuries there was no systematic teaching either of medicine or of civil law. Indeed, the study of civil law was for a long time prohibited, as likely to interfere with the study of theology and with ecclesiastical authority. In the south of Europe medicine and law were actively cultivated; indeed, medicine had been studied with considerable success in the school of Salerno as far back as the ninth century. But towards the end of the eleventh century there began the revival of the study of medi-cine and of civil and canon law in the universities of northern Italy, especially Bologna, partially brought about by the introduction of Arabian writings from Spain. In Italy, secular education had never been completely extinguished, as it had been in the north. The educational traditions of the old Roman world were never entirely When the revival of learning came its most striking effects were seen not in the church schools, but in the schools of independent lay teachers. Between Paris and northern Italy there was, furthermore, a difference in the classes from which students were drawn. It was customary, as Rashdall, in his admirable "History of the Universities of Europe in the Middle Ages," remarks for the Lombard nobility to give their sons a literary education at a time when the knights and barons of France and Germany were inclined to look upon reading and writing as unmanly accomplishments fit only for priests and monks, and especially for monks not too well born. In these circumstances. in Paris, learning manifested itself chiefly in dialectics, especially as applied to metaphysics and theology. In Italy, on the contrary, grammar and rhetoric were the two important studies chiefly as preparation for the work of the notary and pleader. In England the New Learning of the sixteenth century was largely helped by an eminent lawyer and an eminent physician. Sir Robert Rede, Chief Justice of the Common Pleas, founded in 1518 in the University of Cambridge three lectureships on history, logic, and philosophy, which in the year 1858 were consolidated into one which still bears his honoured name. About the same time Thomas Linacre went to Italy for the purpose of learning Greek, and on his return to Oxford taught medicine and Greek. Linacre revived classical medicine in England, wrote grammatical and medical works, and translated from the Greek writers, especially from Galen. To him chiefly is

owing the foundation of the Royal College of Physicians of London by Royal charter in the year 1518.

One might collect many other instances from the pages of the history of civilisation of the parts which lawyers and medical men have played in the spread of learning, in the defence of liberty, and of freedom of thought. The formation of this society may be regarded as the crown of this common endeavour. In the growing complexity of civilised society fresh problems are continually forcing themselves upon the attention of thoughtful men. Considerations of public health and well-being have fostered the growth of legislation relating thereto. Much of this legislation, though well-meaning, is imperfect, and very often unscientific and futile, largely, I believe, because legislation has not kept pace with the advance of medical knowledge. A new Organon is required in the investigation of medico-legal cases. The legal maxim, De jure judices de facto juratures respondent is, I believe, sacrosanct in the legal mind. To the judge, rightly, is given the interpretation of the law, but to leave to an untrained and unscientific jury the decision as to facts respecting a disputed medical case is very often, I submit, a travesty of justice. Has not the time come for a radical reconsideration of the whole question of medical evidence in courts of law? Perhaps the increased employment of medical assessors in cases where medical or surgical facts or opinions are in dispute would do much to prevent the unpleasant exhibitions which are now too often witnessed in the law courts when cases of this kind are under investigation. This society may perhaps do much to bring about the required readjustment, and if so by this attempt alone its foundation will have been amply justified.

LIVERPOOL MEDICAL INSTITUTION.

The Surgical Treatment of Chronic Constipation.—The Therapeutics of Pituitary Extract.

A MEETING of this society was held on Nov. 4th, Mr. T. H. BICKERTON, the President, being in the chair.

Mr. R. W. MURRAY read a note on the Surgical Treatment of Chronic Constipation. This condition when calling for surgical interference was met with chiefly in women who had suffered from mucous colitis. Reference was made to cases of this nature related by Mr. W. Arbuthnot Lane, who recommended and practised removal of the large bowel. Mr. Murray did not consider so serious a measure justifiable or necessary. Some years ago he suggested treating chronic constipation by bringing the appendix to the surface in order that through it the large bowel might be thoroughly irrigated. Several cases were related in which this had been done with very satisfactory results. -Mr. F. T. PAUL said that he had dilated the anus in cases of uncomplicated chronic constipation with very good result. He thought that Mr. Murray's cases were at least complicated by, if not altogether due to, colitis. He had several times used appendicostomy for this condition and always with success. He wanted to know its value for simple intense constipation. -Dr. J. LLOYD ROBERTS referred to a case of mucous colities in which after appendicostomy the pain caused by the lavage was so severe that the treatment could not be proceeded

Dr. W. Blair Bell read a paper on the Pituitary Body and the Therapeutic Uses of the Infundibular Extract in Shock, Uterine Atony, and Intestinal Paresis. After dealing with the work of other investigators who had confined their attention mainly to the anatomy and development of the pituitary body and to the physiological action of the infundibular extract upon the blood-vessels and kidneys, Dr. Blair Bell described the results of his own experiments carried out with Dr. Pantland Hick, and already published, not only upon the blood pressure but also upon the uterus and intestines. Further, he gave an account with cases of the clinical use to which he had put the extract. Hitherto it had only been used as a diuretic in tabloid form. With a hypodermic preparation which had been made for him by Messrs. Burroughs, Welloome, and Co., both for his experimental and clinical use, and now on the market, he had obtained most striking results. 1. In shock the prolonged period during which the blood pressure was raised made it a most valuable therapeutic agent. 2. En uterine atony powerful and prolonged contractions were

induced so that in such conditions as post-partum hæmorrhage it was specially indicated. 3. In intestinal paresis, post-operative or otherwise, immediate effects were always obtained. Dr. Blair Bell next discussed the origin of the active principle and its probable chemical com-position. He also described the method of administra-tion of the extract. Finally, he expressed his indebtedness to his surgical colleagues and other members of the medical profession in Liverpool who had so readily tested the extract and informed him of the results.— Sir James Barr congratulated Dr. Blair Bell on the value of his work. He thought that pituitary extract should be used with caution, and its misuse would bring it into disrepute. This drug was active in producing arterio-solerosis, it contracted the coronary arteries, and led to their degeneration. When used as recommended by Dr. Blair Bell with low blood pressure no mischief could result, and if reserved for such cases it would hold a valuable position in thera-peutics.—Dr. Pantland Hick, who had carried out the experimental work with Dr. Blair Bell, drew attention to the danger of using the drug in cases of heart failure.

Mr. PAUL had used it in a case of intestinal paresis after operation with the most remarkable result after all else had failed to give relief. - Mr. FRANK JEANS also had used the drug in several cases and fully confirmed its action on the intestines -Mr. A. HOPE SIMPSON and Dr. R. J. M. BUCHANAN referred to a case of splenic anzemia with distension and ascites in which the extract had given marked relief over a period of several weeks when given at intervals; the relief was maintained, there was a great diminution in the size of the spleen, and the fluid was kept in abeyance. Dr. Buchanan also referred to the opinion held by Müller and others that the centres for the involuntary action of the uterus, bladder, and rectum were situated in the pelvic sympathetic ganglia, and desired to know if the pars nervosa of the pituitary body could be regarded as an integral part of the sympathetic nervous system, or did the extract act by stimulating the ganglia? He considered that those cases of so-called acute intestinal paresis associated with peritonitis, for which operation had to be performed, were not due to any special affection of the gut itself but to paralysis of the sympathetic nervous system, and the distension was a symptom of this condition, namely, shock.—Dr. E. E. GLYNN believed that the extract would be far less efficacious in intestinal atony due to acute general peritonitis than to other causes.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Valediotory Address.—Fracture-Dislocation of Cerrical Vertebra.—Scoppolamino-Morphine Anasthesia.

THE first meeting of the eighty-ninth session of this society was held on Nov. 3rd.

Dr. JAMES RETCHIE, the retiring President, referred to the flourishing condition of the society; he then spoke of the debt of gratitude which it owed to Dr. William Craig, who for 28 years had been editor of its Transactions, also to Mr. David Wallace, senior secretary, both of whom had resigned their offices. He also referred to the many serious losses which the society had suffered from death. Dr. Ritchie then addressed the society on "The Influence of the Tissues of the Body on the Incidence and the Treatment of Disease. He first referred to the rapid advance of the science of medicine and the tendency of the pendulum of scientific theory to swing too widely to one side or the other. Know-ledge of the influence of micro-organisms on health and disease showed their great importance, but he believed that there was the tendency to overlook the influence of the soil in which they grew, an error which laboratory workers did not make. In relation to diseases other than micro-organismal, the importance of the constitution did not receive sufficient recognition. He spoke of the chemico-vital processes of the tissues of the body, of the different qualities of plasm and the influence of heredity on these qualities, and gave illustrations from medical practice of the influence of these on health, disease, and longevity. He adverted to the differences and varieties of constitution and described as types, gouty, chemmatic, nervous, bilious, and tubercular, not in relation to external characteristics, but to chemico-vital peculiarities of the cells of various tissues. He next considered the relation of some pathological organisms to the tissues in health, lowered vitality, disease, and injury, referring to immunity, acquired and transmitted, as evidences of the influence of the tissues, specially the blood. He then treated shortly of the necessity of maintaining the power of resistance of the tissues as a prophylactic measure, in addition to the important work of waging a crusade of extermination if possible of pathological organisms. As to treatment of disease, he emphasised the fact that we did not treat diseases as entities, but we treated individuals who suffer from diseases which were modified by the constitution, and that treatment should be modified accordingly. Dr. Ritchie concluded by welcoming Dr. Byrom Bramwell to the presidential chair.

Mr. DAVID WALLACE and Dr. A. BRUCE showed a case and read a communication on a case of Fracture-dislocation of the Axis Vertebra occurring from a unique cause. The patient, a healthy man, aged 40 years, a marine engineer, hearing someone speak behind him, turned his head suddenly and felt a slight crick in his neck. Shortly afterwards he felt a lump in the back of his neck and found that he could not move his head to either side and only slightly forwards and backwards. The occurrence of pain in the back of the head, neck, and shoulders some time later led to a diagnosis of rheumatism. The patient's physician, Dr. W. W. Millard, finding on his return to this country a projection of the back of the neck, consulted Mr. Wallace who diagnosed a dislocation of the upper part of the spine, which was confirmed by a skiagram. There being no loss of motor power in either the upper or the lower limbs it was thought well not to attempt reduction. Some weeks afterwards a slight accident (a child pulling on a shawl round the patient's neck) caused further displacement and produced great pain, paralysis of all four limbs and of the diaphragm, with retention of urine. Next day the patient was admitted to Dr. Bruce's ward, and on the following day, after consultation with the patient's physician, Dr. Millard, the dislocation was reduced by Mr. Wallace. There was almost immediate relief of breathing, the diaphragm commencing to act. In about ten minutes there was a return of movement of the legs, in about 12 hours voluntary action of the bladder, and in a day or two commencing return of the power of the hands. The head was retained in a fixed position backwards on the spine by means first of sand-bags and then of a poroplastic jacket with a head-piece to prevent lateral movement. The patient has made a steady recovery, interrupted only by a short pneumonic attack a few days after the reduction and a slight attack of cystitis. The bones are shown by a skiagram to be in good position. Dr. Bruce thought that the fracture had taken place at the weak point in the odontoid process which corresponded with the epiphyseal cartilage. - Dr. C. W. MACGILLIVRAY asked what was it which really happened when the first accident occurred, for he could hardly imagine that fracture with impaction of the odontoid process could take place merely by turning the head round suddenly. _Dr. BYROM BRAMWELL thought that there might have been latent disease of the cervical vertebrae without symptoms previous to the accident, and he had published a case of caries of the cervical spine in a boy, aged nine years, in which complete recovery took place after there had been total paralysis. -Mr. J. M. COTTERILL related a case which had lately been under his care of a man with fracture of the third cervical vertebra with no paralysis, and due to the patient's neck having been tightly gripped while wrestling.— Mr. C. W. CATHCART, Mr. WALLACE, and Dr. ALEX. GOODALL also took part in the discussion.

Dr. H. TORRANCE THOMSON and Dr. DENIS COTTERILL contributed a paper on the Use of a Combination of Scopolamine and Morphine as an Anæsthetic Adjunct, which we shall report in another issue. — Professor F. M. CAIRD, Mr. ALEXANDER MILES, and Mr. COTTERILL discussed the paper. The office-bearers for the session 1909-10 are as follows:—President: Dr. Byrom Bramwell. Vice-Presidents: Dr. C. W. MacGillivray, Dr. W. Allan Jamieson, and Mr. J. M. Cotterill. Councillors: Dr. Robert Thin, Dr. G. M. Robertson, Dr. James Ritchie, Dr. J. S. Fowler, Dr. John Cumming, Dr. Theodore Shennan, Mr. A. Scot Skirving, and Mr. David Wallace. Treasurer: Mr. J. W. Dowden. Secretaries: Dr. F. D. Boyd and Mr. Alexander Miles. Editor of Transactions: Dr. D. Chalmers Watson. A hearty vote of thanks

was awarded to Dr. William Craig, who had so ably edited the Transactions of the society for the long period of 28

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Nov. 5th, Mr. C. Gordon Watson, the President, being in the chair. - Mr. Peter L. Daniel read a paper on Latency in Disease or Overlooked Infections. He said that many children born of tuberculous mothers have tuberculous disease, and that of all the children who die in children's hospitals, about 60 per cent. die from intestinal lesions, mostly incipient tubercle. About 50 per cent. of those dying from measles and scarlet fever have macroscopic disease of the antrum of Highmore, mostly a streptococcic infection which is easily lit up. Many girls have vulvar diseases, really gonorrhoal, which, if lit up, can develop pelvic lesions. Abscess of the kidney has been known to develop 15 years after an attack of gonorrheea. Pneumococci involve many areas and are largely found in peritonitis, the disease probably having spread from the thorax through the diaphragm. Many severe throat attacks are pneumococcic, the germ being latent in the accessory sinuses. Gall-stones owe their origin to the action of germs which set up catarrh of the small bile ducts. Cirrhosis of the liver is not due to the action of alcohol, but to a toxic infection. 80 per cent. of joint troubles are due to septic infection from the mouth and intestine. Sciatica is due to disease of the hip, sacroiliac or lumbar joints as a result of septic infection. instances were quoted in support of the thesis.-Dr. H. M. Spoor read notes of a case of Severe Pruritus Vulvæ in a woman, aged 37 years, which had lasted three years. On examination both nymphse were very hypertrophied and pendulous, and the surrounding parts showed that leathery appearance associated with repeated scabbing and rehealing. There were piles, which had existed for 20 years, a moist sodden condition of the epidermis, and a thin leucorrhæic discharge from the vagina. The itching was excessive, and treatment, local and general, being unavailing, an operation was decided on, in spite of the fact that the patient was then seven months pregnant. pendulous nymphæ were completely removed and the cut edges of skin united. The anterior ends of the first incisions were then joined by two curved incisions, one of which passed anterior and the other posterior to the clitoris, which, together with a small area of skin, was thus enclosed between them. This enclosed skin, together with the clitoris, was dissected away, and the wound was closed. A fresh incision was then made on each side from above and to the outer side of the mons veneris downwards, the lower part being parallel to the outer border of the vulva. The skin of the mons veneris was undercut in an outward direction between the anterior ends of these two incisions. At the posterior part of the incisions the skin was raised in an inward direction towards the vulva, and a slight undercutting was done at the outer side of these incisions. The wounds were then stitched up. The patient made an excellent recovery and was immensely relieved. No itching was felt for over a week, but slight symptoms appeared in the skin which had escaped the undercutting process, and these persist, but the inconvenience is no way comparable to the tortures suffered before.

EPIDEMIC INFANTILE PARALYSIS.—It will be remembered that our Berlin correspondent recently reported a widespread epidemic of acute anterior poliomyelitis amongst the children of Westphalia. The same thing has been happening in Holland on a smaller scale. The Leyden newspapers on Oct. 17th published the intelligence that no less than 25 children had been attacked by acute infantile paralysis and a number of parents consequently were keeping their children from school or sending them away into the country. Later intelligence showed that only 17 cases had then been officially reported, none of them of a very severe character. All the patients were under 2 years of age. The Leidsch Daghlad of Oct. 21st announced that 21 cases had up to that time been officially certified, all except 2 being in children under 5 years of age. The remaining 2 patients were aged 12 and 8 years respectively. Altogether, since the occurrence of the first cases in August, 24 have been certified in Leyder, which is a town of 55,000 inhabitants; others have occurred in a sporadic fashion in localities more or less distant from Leyden.

Rebiews and Aotices of Books.

Anatomy, Descriptive and Applied. By HENRY GRAY, F.R.S., formerly Lecturer on Anatomy at St. George's Hospital Medical School. Seventeenth edition. Edited by ROBERT HOWDEN, M.A. Durh., M.B., C.M. Edin., Professor of Anatomy in the University of Durham. Notes on Applied Anatomy, revised by A. J. JEX-BLAKE, M.A., M.B. Oxon., M.R.C.P. Lond., Assistant Physician to St. George's Hospital; and W. FEDDE FEDDEN, M.S. Lond., F.R.C.S. Eng., Assistant Surgeon and Lecturer on Surgical Anatomy, St. George's Hospital. With 1032 illustrations. London: Longmans, Green, and Co. 1909. Pp. 1296. Price 32s. net.

THE latest edition of "Gray's Anatomy" may be described as its jubilee number, and in reviewing it we may aptly repeat the opinion we passed on it 51 years ago, when the first edition appeared.1 "The student of anatomy and surgery of the present day enjoys a great advantage over his predecessors, in having at his command works on the subject of his studies, which not only facilitate his labours, but enable him to pursue his investigations in a scientific and practical manner. We are bound to say that no treatise that has issued from the press for a great number of years is more calculated than the present one to furnish the student and practitioner with an accurate view of the anatomy of the human body, and more especially the application of this science to practical surgery. We are not acquainted with any work in any language which can take equal rank with the one before us."

Although a succession of able editors (and Professor Howden has done his work as well as any of his predecessors—which is a high meed of praise) has greatly altered the original work of Henry Gray, we would extend to the present edition the same favourable judgment we passed on the first. We would note merely that "the advantages which the student of anatomy and surgery of the present day enjoys over his predecessors" have their qualifications. Instead of having to read and digest the contents of 750 pages for examination, as his predecessors did in 1859, he has in 1909 to master 1296 pages, and the number of facts described on each page has increased. The modern editions have become more and more of the nature of encyclopædias, new discoveries being packed into them as was found most convenient, whereas the first edition was a continuous narrative written by one man (polished, if tradition is reliable, by the scholarly pen of Timothy Holmes) and therefore more easily read and remembered by the student. Chapters on histology and embryology, amounting to 177 pages in the present edition, have added to the burden of the modern student of anatomy. His task has been doubled, and owing to the introduction of new subjects of study and to the great expansion of the old, the time in his curriculum allotted to anatomy has been halved. The advantages of the modern student are becoming so burdensomenay, well nigh intolerable—that some method of lightening them must be found. "Gray" is, and always has been, the favourite text-book of English students for examinations, and the editor could in a new edition make the student's task more tolerable by shortening the tedious and minute descriptions of the less essential structures, and at the same time he would improve the real practical features of the book.

On the other hand, the work of the present-day student is lightened by the lavish manner in which the last edition of "Gray's Anatomy" is illustrated. It contains 1032 figures, many of them improved by being coloured; the first edition contained 363 figures, an excessive number for an anatomical work of 50 years ago. The modern illustrations, excellent

in many ways, are a miscellaneous assortment, culled from many sources, done, some of them very indifferently, by many artists and reproduced by different technical methods. The original illustrations, most of which are retained, remind us that in the matter of anatomical illustrations we have receded, not progressed; they were a consecutive series of carefully drawn and executed wood-blocks, mostly the work of one man-Dr. Vandyke Carter. genius as an anatomical draughtsman, as most medical men are aware, did much to secure a popular success for Gray's work, but few know that he owed his training to the Council of the Royal College of Surgeons of England, which at the suggestion of Professor Owen (as he then was) gave its "students in human and comparative anatomy," whom Carter was one, a very complete training in draughtsmanship under one of the ablest artists of 60 years ago. Students at the present day still benefit by the money so wisely expended by the Council of the College.

One of the outstanding features of the first edition of this work was the introduction of Mascagni's investigations and illustrations of the lymphatic system of the human body, which were imperfectly known in England at that time. We are glad to note that in the present edition the numerous recent researches on this system have been fully noted and illustrated. Another original feature of "Gray's Anatomy" was the application of the rather dry details of anatomy to the work of the surgeon. In the present edition the physician has also been considered; the title has been altered from "Anatomy, Descriptive and Surgical" to "Anatomy, Descriptive and Applied." The sections dealing with applied anatomy have been entrusted to Dr. A. J. Jex-Blake and to Mr. W. Fedde Fedden, who have done their work most satisfactorily. The sections dealing with "regional" and "applied" anatomy have been more closely incorporated in the general text than in former editions, an alteration that has many advantages. So "Gray" remains an admirable modern text-book.

A Text-book of Diseases of the Ear. By P. MACLEOD YEARSLEY, F.R.C.S. Eng., Senior Surgeon, Royal Ear Hospital, &c. With 127 illustrations. London: Kegan Paul, Trench, Trübner, and Co., Limited. Pp. 452. Price 21s.

THE first chapter of Mr. Macleod Yearsley's text-book consists of a brief description of the anatomy and histology of the ear, together with a résumé of its physiology. The next chapter is devoted to clinical examination, and the principal points which require special comment are duly brought forward, with hints as to the causation of symptoms. These are more fully elaborated when they appear again under special diseases. Mr. Yearsley goes very fully into the tuningfork tests, and these are dealt with in a way which shows the great advances which have been made in the last few years, and Mr. Yearsley differs from many writers in freely quoting English authors in support of various elaborations of tests, notably that of Rinné; but we notice that he considers paracusis Willisii is not such an unfavourable symptom as is generally supposed. The third chapter deals with diseases of the external ear and the fourth with injuries and diseases of the membrana tympani, to which condition rather more time and space are devoted than is perhaps commensurate to its importance. Then follows a description of the injuries and diseases of the middle ear, in which, amongst a mass of useful matter, a dissertation appears on the correct method of nose-blowing to be used as a prophylactic measure against middle-ear infections. Suppurative conditions of the middle ear form the subject-matter of the sixth chapter, with diseases of the mastoid in the seventh, and intracranial

complications in the eighth, these three chapters dealing very fully with the whole range of suppurative otitis media. The description of the Schwartze operation would be better for more detail; the beginner would find it extremely difficult to perform the operation under the instructions given, and the so-called essentials of simple opening of the mastoid are a little vague; for instance, why is it suggested that exposure of the sinus, presumably the lateral sinus, is considered essential? We do not think this is in agreement with the views of most aurists. Though the description is too meagre for the novice it is quite sufficient for the practitioner who wishes merely to refresh his memory. In the ninth chapter Mr. Yearsley treats of subacute and chronic catarrhal otitis media, and in the tenth deals with otosclerosis. The latter chapter gives a complete and very full account of what is known concerning this most obscure complaint and will prove of exceptional interest especially to those who are unacquainted with the latest works on the subject. Under Internal Ear Diseases the labyrinthine operations for vertigo and tinnitus are considered. It is a pity that Mr. Yearsley does not give a full report of the various tests for diseases of the posterior portion of the labyrinth, more especially those elaborated by Bárány. The influence of diseases of the ear described in the twelfth chapter forms interesting reading, though a fuller consideration of the part played by arterio-sclerosis is advisable. The book is well printed and very readable; the illustrations, however, are of unequal merit. We think that this work will prove a very useful addition to the aurist's library. It contains much useful information supplied in a clear, readable, and accurate manner, and shows throughout that it has been written by one with wide experience and sound judgment.

Immunity and Specific Therapy. By W. D'ESTE EMERY, M. D., B.Sc. Lond., Clinical Bacteriologist to King's College Hospital, and Pathologist to the Children's Hospital, Paddington Green; sometime Lecturer on Pathology and Bacteriology in the University of Birmingham. With illustrations. London: H. K. Lewis. 1909. Pp. 448. Price 12s. 6d. net.

Such a work as that here reviewed appeals to a large circle of readers and is of interest not only to the scientific worker but also to the practising physician and surgeon and to the intelligent layman. The subject of immunity is often regarded as though it were divorced from practical medicine, but however inadequate our knowledge may be our plan of medical treatment cannot fail to be coloured by our conception of the natural methods of recovery from disease, and should indeed be based on an intelligent appreciation of these methods. We are, therefore, indebted to Dr. Emery for this lucid account of the present position of our knowledge of immunity. The task he has undertaken is both difficult and somewhat thankless—difficult since as yet we have no thread to guide us through the maze of researches, and thankless in that such a work falls behind in detail even in the writing. In this, however, there is compensation since mere flux of time renders previous works of the same kind inadequate. In the present state of our knowledge it is impossible to find a simple and single explanation of immunity; rather there is evidence of a multiplicity of methods for securing this condition. It is essential, therefore, that in considering the various theories advanced the author should not be a partisan but should hold so far as is possible a judicial attitude in considering the evidence for and against the explanations suggested. Such an attitude is a distinguishing feature of the book. The theories of Ehrlich have played a great part in elucidating our conceptions of immunity and have proved fruitful in suggesting lines of

investigation, but there is no doubt that with the numerous complexities which are introduced to meet new facts the side-chain theory tends to become rather an expression of these facts in the terminology of the theory than an explanation of the phenomena. It is, too, becoming more and more evident that the results of many of the experiments adduced in its support are explicable in terms of the physical and chemical properties of colloidal Due weight is given to the humoral conception of immunity, but the author appears to end, almost anwillingly, by regarding the phagocyte as of prime importance not only in the combat against infectious disease but also in the struggle against intoxication. The book is not based on original work, and differs, therefore, from the recently published studies by Muir and Browning, but in the later part of the work, and especially in that concerned with specific therapy, the author draws on his experience in estimating the value of the methods used or suggested. Besides the non-partisan spirit in which the theories are discussed, to which reference has already been made, great skill is shown in the way facts only to be found in the detached papers of various investigators are marshalled into their proper places in the chain of argument.

The strange, redundant, and confusing nomenclature which has grown up around the theories of immunity adds not a little to the difficulty of understanding them. The author wisely prefixes a glossary of the terminology with definitions and explanations. Some slips in the book itself seem to show that this is not an unnecessary precaution.

After a preliminary chapter on the meaning of immunity and its relation to recovery from disease the author passes to a chapter on the nature of bacterial toxins as a preliminary to the consideration of immunity to toxins. This involves a review of the subject of antitoxins and of the relations existing between toxin and antitoxin, with the rival chemical hypotheses of Ehrlich and Arrhenius and Madsen, the physical theory of Bordet, and the view that the facts are to be explained by the colloid nature of the interacting bodies. Though naturally humoral ideas are prominent in this part of the work, yet the author accepts the French view that leucocytes play a part in toxin immunity, and draws attention to the fact that recovery from a toxic disease, such as diphtheria, is not brought about exclusively or even mainly by antitoxic action.

The more complicated phenomena of bacteriolysis are next treated with the same lucidity which marks the earlier portion of the work, and with the aid of excellent diagrams which place clearly before the reader the problems and their suggested explanations. It is probably unavoidable in the present state of our knowledge, but it is illogical to invoke a hypothesis as an explanation of one set of phenomena which has already been rejected as untenable when discussing the results of other experiments. After considering agglutinins and precipitins a long chapter is devoted to phagocytosis. In this opsonins and their action are included. The author agrees with the views of Dean and Muir that the thermolabile opsonin is an alexin and the thermostable opsonin a true antibody; he would also regard the immune body as able to function as an openin in such dilutions that no bacteriolytic effect would be produced. A valuable chapter on the colloidal theory of antibodies is followed by a judicial summing up of the question of immunity to bacteria, in which the conclusion already referred to as to the importance of the leucocyte is reached. A final section of the book deals with the practical application of the theories which have been discussed, and there the author's considerable experience in the diagnosis

and treatment of disease by bacteriological methods is of great value. A bibliography completes the work.

The book is attractive in appearance and well printed, but has apparently been somewhat hastily prepared for the press. There are a considerable number of slips; most of these are of small importance, but some interfere with the argument and pervert the meaning of the author. If Dr. Emery means to keep his work regularly up to date in subsequent editions it would be well if he were to read through this issue very carefully. The merits of the work are great and the defaults are trifling, but there they are.

Kompendium der Topischen Gehirn- und Rückenmarksdiagnostik. Kurzgefasste Anleitung zur klinischen Lokalisa-tion der Erkrankungen und Verletzungen der Nervenzentren. Von ROBERT BING, Privatdozent für Neurologie an der Universität Basel. With 70 illustrations. Berlin and Vienna: Urban und Schwarzenberg. 1909. Pp. 200. Price M.6.

In his preface the author states the object he has in view in adding to the number of pre-existing volumes en the diagnosis of nervous disease. A concise, practical, and didactic vade-mecum is what he would like this book to be, and it may be at once said that he has succeeded in his task admirably. In teaching so complicated a subject as the diagnosis of pathological processes in the nervous system the dogmatic method has obvious advantages, and calls for no particular apology from the teacher. If it is combined with scholarship we can rest assured that he will not be unduly dogmatic, and that the student will thereby gain a sound and working knowledge of nervous disease. Anatomy is the basis on which clinical information must be established if it is to prove really useful; dissociation of the anatomical and the clinical is fatal to what we may be allowed to call scientific physicianship. In the volume before us Dr. Bing has supplied a succinct yet sufficiently detailed account of the anatomy of the nervous system, and has not hesitated to enter into minutise whenever these will serve to elucidate clinical phenomena that may meet the student. He emphasises his various points with the aid of perfectly simple but agreeably accurate diagrams, and the professing neurologist will be struck by their originality and serviceableness. To only one or two must exception be taken, in particular that on p. 61, which purports to represent the segmental areas of the skin. It does not embody the latest and most trustworthy researches on the question, and by being too schematic merely causes confusion.

The book is divided into two parts: the first deals with the localisation of spinal cord lesions, the second with intracranial lesions. A chapter on the anatomy of the cord, in which an excellent description of exogenous and endogenous tracts and their cells of origin will be found, is followed by an account of the apparatus for the transmission of motor, sensory, trophic, and vaso-motor impulses, and the significance of disturbances in each of these is discussed from the point of view of localisation. By study of the data which the author sets out methodically and lucidly the student should have no difficulty in diagnosing a given lesion; its vertical level and its position on that level should alike be determined with a fair amount of ease. Relatively to the space devoted to the cord, too little, in our opinion, has been reserved for a consideration of intracranial disease, yet it is pleasant to find so much incorporated that has not elsewhere, as far as we are aware, found its way into a text-book. This is the case more especially with cerebellar diagnosis. The handling of cranial nerve localisation is exceedingly good; the description of the semeiology is unusually complete and well worth the many pages devoted to it.

By way of criticism a few remarks will suffice. is undesirable to figure thalamo-spinal tracts when the most recent investigation limits these to a few descending fibres in the posterior longitudinal fasciculus. An anatomical connexion between the seventh cranial nerve and the twelfth nucleus is now discredited. The symptoms of disease of the basal ganglia and of the hypophysis, to mention but one or two, are sketched rather inadequately, and if atypical hemiplegias are to be mentioned at all chronic progressive hemiplegia might have a place among them. It is not the case that in Jacksonian epilepsy bilaterally innervated muscles are always thrown into contraction synchronously on the two sides. Apart from this and similar minor criticism, we have nothing but praise for this thoroughly interesting, readable, and up-to-date presentation of a difficult subject, and we compliment Dr. Bing on having both avoided controversial topics and yet omitted nothing that the practitioner can be likely to want. The place of the book on the shelf of the student and the physician should be, we think, assured.

LIBRARY TABLE.

After-treatment of Operations: A Manual for Practitioners and House Surgeons. By P. Lockhart Mummery, F.R.C.S. Eng., B.A., M.B., B.C. Cantab., Senior Assistant Surgeon, St. Mark's Hospital and Queen's Hospital for Children, London. Third edition. London: Baillière, Tindall, and Cox. 1909. Pp. 251. Price 5s. net.—Success in operating depends often not so much on the skill with which the operation is performed, but rather on the care and attention devoted to the patient subsequently. In minor operations very little is required, but in those more serious surgical cases in which shock and hemorrhage are liable to follow the whole of the difference between recovery and death may depend on the care and attention for a few hours after the operation. In hospital practice the duty of seeing that the patient recovers from the operation itself devolves chiefly on the house surgeon, but in private practice the surgeon himself is generally responsible for what is done. We spoke favourably of this work on its first issue, for it was the first attempt to systematise the treatment of patients after operation, and the present volume only differs from the early issue in the more complete arrangement of the material and in the bringing up of the knowledge to the present date. We are glad to see an account of the use of proctoclysis in cases of general peritonitis, but it would have been well to make the description fuller, for it is hardly sufficiently detailed to enable a surgeon to employ the procedure who has never seen it.

New Ideals in Healing. By RAY STANNARD BAKER. London: T. Werner Laurie. Pp. 105. Price 2s. 6d.—Health, Physical and Mental. By C. W. JOHNSON. London: The Theosophical Publishing Society. 1909. Pp. 143. Price 2s. -The above two little books both deal with practically the same subject—that is to say, the influence of the mind over the body and the tendency of modern medicine to rely less on drugs than formerly, while endeavouring to put the body into the best condition for utilising the natural forces of resistance. Mr. Baker's book is divided into two portions, of which the first deals with the "Emmanuel Movement" in Boston, and the second with the "Social Service Department" at the Massachusetts General Hospital. As to the former, it would appear from the account given by Mr. Baker to be conducted upon sensible lines, and the clergy obviously take care not to encroach upon the territory which is rightly occupied by the physician. The latter movement is one which is decidedly a good one. It is an attempt by a large general hospital to unite such methods of help as in this country are carried out by the various Samaritan funds, health visitors, and such agencies as the Charity Organisation Society. - Mr. Johnson's book is, we must say, a lamentable instance of a work written by an earnest person, with every desire to be fair, upon a matter with which he obviously has but the slightest acquaintance. He says in his preface that he is indebted to medical friends. It is a pity that the medical friends did not save him from the error of describing a wellknown physician as "Dr. Williams Osler, lately Regius Professor of Medicine at Oxford." With his dictum that air, food, water, rest, and exercise are five necessities for health we agree, and that a person possessed of the mens sana in the corpus sanum is far less likely to break down in health than one who is not so dowered is also a truism, even if we remember that the word mens in this connexion includes the spiritual as well as the psychical side of human nature.

Pocket Medical Dictionary in Eight Languages: English, German, French, Italian, Japanese, Russian, Spanish, and Hungarian. Edited by Dr. J. MEYER, Berlin, in collaboration with Dr. O'C. FINIGAN, M.D. Berlin, M.R.C.P. Lond., Assistant Physician, German Hospital, Dalston, London, London: W. Lockwood and Co.; Berlin and Vienna: Urban and Schwarzenberg. 1909. Pp. xxviii.-788. Price 20s.—The great extension of medical literature requires that any one who wishes to be abreast of modern progress must be acquainted with more than his native language. and it is often necessary also in seeing foreign patients for the medical man to be able to express his meaning in a foreign tongue. For purposes such as these this dictionary should prove very useful, and as it deals with seven foreign languages in addition to English it possesses exceptional advantages. It is of interest to note the inclusion of Japanese in the list of the chief scientific languages; it is hardly necessary to say that the Japanese words have been transliterated, and this has also been done in the case of the Russian words, though here it was not so necessary. The arrangement of the work is as follows. The words in all the eight languages are placed in their alphabetical order, but the explanation of each word is given in German, to which the reader is referred, where he will find the eight words or phrases expressing the idea in the eight languages. For instance, if we wish to know the foreign equivalents of "pain" we look up "Pain" and find that we are referred to "Schmerz," and beneath that we find (e) pain; (f) douleur; (i) dolore; (j) itami, totsu; (r) bolj; (s) dolor; and (u) fajdalour; the letters in brackets indicating the language to which the following word belongs. The errors present, which we could detect, are very few, and this is remarkable when we consider the large number of words included, but the editor has had the assistance of a native of the country of each language represented, which was clearly the only way to ensure We may mention one slip—the French for "tongue depressor" is not pince à langue, which means tongue forceps, as given correctly in the next column. We can praise the book cordially as well conceived and carefully executed, while the printing and binding are good. We would suggest the desirability of the inclusion of some phrases and sentences if that could be managed without unduly increasing the size of the book.

A Manual for Students of Massage. By MARY ANNA ELLISON, Member of the Incorporated Society of Trained Masseuses. Third edition. London: Baillière, Tindall, and Cox. 1909. Pp. 189. Price 5s. net.—It is very desirable that those men and women who devote themselves to the practice of massage should possess an intelligent knowledge of the superficial structure of the body which they manipulate. But all who consider the subject may not be inclined to agree as to the exact amount of anatomical knowledge which it is necessary for practisers of massage to possess. On

the whole, it is probable that it is better for them to know a little too much rather than a little too little, but we utterly fail to see the object of imparting to them some of the anatomical knowledge contained in the book. For instance, what can be the object of figuring and describing the vomer or the ethmoid bone? And we think that it is rather a waste of space to devote a whole page to an account of the sympathetic plexuses. The illustrations contained in the anatomical portion are not always happy; they appear to be reproductions of pen-and-ink sketches of the bones and other objects, and many of them are certainly far from accurate; for instance, the drawings of the radius and ulna are weefully out of proportion. More useful, probably because written with fuller knowledge, are the chapters devoted to practical massage, and the description of the Nauheim treatment is likely to prove useful. A short account is given of Fraenkel's method of treatment of locomotor ataxy, and the description of the Weir-Mitchell treatment is also good. We can see no necessity for the chapter on ductless glands, which is entirely out of place in a work such as this. The description of the surface markings would have been more reasonably placed with the general account of anatomy. The plates representing the muscles are unnecessarily elaborate, and the same may be said of the tables giving the origin, insertion, action, and nerve supply of the indi-The book has many good points in vidual muscles. spite of the large quantity of extraneous matter that it contains, and we hope that in a future edition the author will exercise a wide discretion in curtailing the descriptions of anatomy so as to accommodate them more accurately to the needs of students of massage.

Home Life in Ireland. By ROBERT LYND. London: Mills and Boon, Limited. Pp. 317. Price & net.—We feel some diffidence about attempting a review of a book dealing with Home Life in Ireland, for the subject almost necessarily connotes a discussion of matters deeply concerned with both politics and religion, and with these two subjects it is not our province to deal except in so far as they may affect medical matters. But nevertheless we offer our warm thanks to Mr. Lynd for a sympathetic and brightly written book which touches at most points the at present unsolved problem of Ireland and Irish government. Mr. Lynd is an Irishman himself, but he writes, as the Book of Common Prayer says, quite "indifferently." He appreciates to the full both the faults of the governed and of the governors, and there are plenty on both sides. There is manifest room for improvement in the condition of the factory-workers in the textile trades, and the payment of home-workers is in no way better These facts are set forth with exceeding clearness by Mr. Lynd in his fourteenth chapter, facts supported by figures which are not his own but taken from the reports of Miss Martindale, an inspector under the Factories and Workshops Act. Mr. Lynd draws attention to the fact that the Irish are brought up on tea, white bread, potatoes, and American bacon, and argues that if more nourishing food were in use disease would not be so rife. Quite so; but in a desperately poor country cheapness has always to be the first consideration, but we must not allow ourselves to drift here into considering how and why Ireland is poor. Altogether Mr. Lynd's book is of extreme interest, and it is possible that some in high authority in Ireland might read it with advantage.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, QUEEN-SQUARE (UNIVERSITY OF LONDON).—A special course of four lectures on the Diagnosis and Surgical Treatment of Diseases of the Nervous System will be given on Mondays, Nov. 22nd, Nov. 29th, Dec. 6th, and Dec. 13th, by Sir Victor Horsley, F.R.S. Oards of admission may be obtained from the secretary of the hospital on payment of 1 guinea.

Reports and Analytical Records

THE LANCET LABORATORY.

"TABLOID" HYPODERMIC, TYRAMINE.
(BURROUGHS, WELLCOME, AND Co., SNOW-HILL BUILDINGS,
LONDON, H.C.)

Tyramine is a good example of the excellent scientific work which is being conducted in the Wellcome Physiological Research Laboratories. Tyramine has been shown to be the chief active principle of aqueous extract of ergot and consists of the organic base para-hydroxyphenylethylamine in a state of purity. The tyramine hypodermic tabloid contains 0.005 gramme of the base. It is stated that the drug produces a marked rise of blood pressure with greatly improved vigour of the heart's action. Its administration is suggested in shock and for producing contraction of the uterus post partum.

HOOKER'S MILK COCOA.

(THEW, HOOKER, AND GILBEY, LIMITED, BUCKINGHAM, AND DONEMOTON HOUSE, 30, NORFOLK STREET, STRAND, LONDON.)

Analysis indicates this preparation to be of decided nutritive value. It contains all classes of food materials. proteins, fats, carbohydrates, and mineral salts in excellent proportions. Moreover, a considerable part of the carbohydrate and of the protein constituents is soluble in water. The flavour of the preparation, is attractive. We found that the total nitrogen amounted to 2.73 per cent., of which 1.61 per cent. was soluble in water. It was proved that not only did the aqueous solution contain the theobromine of the cocoa but part also of the milk protein. The fat amounted to 22.00 per cent. and consisted of a mixture of cocoa and milk fat, the latter predominating. The total soluble matter amounted to 47 per cent. The mineral matter was 4.50 per cent., containing 0.85 per cent. phosphoric acid. The preparation is a good combination of milk and cocoa constituents, which have been so modified as to render them directly available for nutrition. Its food value is indisputable.

(1) LUMIÈRE'S CRYOGÉNINE; (2) HERMOPHÉNYL; (3) HÉMOPLASE; AND (4) GELÉE.

(LONDON AGENCY, A. F. JACQUIER, 104, HIGH HOLBORN, LONDON.) These preparations obtained in the pharmaceutical laboratory of the Société des Brevets Lumière at Lyons, are well worth our readers' attention. 1. Cryogénine is described as possessing remarkable antipyretic properties whilst exhibiting little toxic action or any undesirable disturbances. It is a crystalline white, odourless powder, slightly soluble in water and easily soluble in spirit. Chemically it is meta-benzamine-semicarbazide. It is said to be prescribed, on account of its steady action, in pyrexia connected with typhoid fever, tuberculosis, pneumonia, and so forth. Cryogénine is prepared in the form of tablets and wafers, the dose varying from 15 up to 120 centigrammes. 2. Hermophényl is a comparatively new organo-mercury compound; it is, in fact, a combination of oxide of mercury with phenol sodium disulphonate. It possesses the advantage that it does not coagulate a great number of organic substances, a property which commonly leads to irritation of the tissues. It may therefore be employed for intramuscular or hypodermic injection. It is, of course, a powerful germicide and has obvious applications in surgery, while favourable accounts are given of its employment in syphilis, in urinary diseases, and in gynæcological practice. It is prepared in the form of tablets, pills, and dressings, while solutions are contained in ampoules. 3. According to our examination, hémoplase contains the iron constituents of the blood. It is a reddish liquid which shows a characteristic hamoglobin spectrum, especially

when alkalised with a few drops of ammonia. The liquid on heating coagulates. Hémoplase is administered by intramuscular injection, and its application in anæmia, tuberculosis, and bloodless conditions is regarded favourably. 4. Lumière's jelly is a special preparation which, according to French clinicians, gives remarkable results in checking persistent diarrhoa. It is quite a stiff jelly, sterilised in the autoclave at 120° C.

(1) CHLORETONE GAUZE; (2) FORMIDINE GAUZE; (3) TUBER-CULIN OINTMENT; AND (4) PHENOLPHTHALEIN TABLETS. (PARKE, DAVIS, AND Co., BEAK-STREET, REGENT-STREET, LONDON, W.)

1. Chloretone possesses not only antiseptic properties but analgesic properties also, and therefore its application to wounds as a dusting powder on gauze is of service. It is regarded favourably also in gynæcological and dermatological practice. 2. Formidine is a powerful antiseptic, being a condensation product of iodine, formic aldehyde, and salicylic acid. On its gradually dissolving, the germicidal activity of these constituents is developed. Formidine is said to be free from irritating or toxic effects, and the gauze forms a very satisfactory substitute for the old iodoform fabric. 3. The tuberculin ointment contains Koch's old tuberculin incorporated with wool fat in proportions laid down by Dr. Ernst Moro, who recommends its use for the cutaneous diagnosis of tuberculosis, considering the reaction to be fully as reliable as the von Pirquet method and less risky than the diagnosis obtained by subcutaneous injections or by the conjunctival method of Calmette. This Moro test is supplied in collapsible tubes. 4. The palatable phenolphthalein tablets have been designed for the use of children, and therefore the medicament has been pleasantly flavoured, and the mixture is slightly sweet as compared with a tasteless substance. Phenolphthalein appears to be a very satisfactory laxative in a considerable number of cases.

ROCLA NATURAL TONIC WATER.

THE NATURAL ROCLA TONIC WATER. LONDON OFFICE: 69, EDGWARE-ROAD, MARBLE ARCH, LONDON, W.)

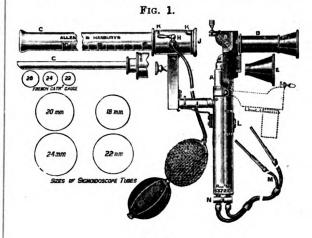
The composition of this water is interesting but not unique. In volcanic districts it is common enough to meet with water impregnated with iron with traces of other metals, including arsenic, derived from beds of iron pyrites. When the water is fresh the iron exists in the form of the soluble protosulphate. After a time it oxidises and the persulphate is then present. That at all events was the condition of the iron in a sample of Rocla water submitted to us. Traces of copper and arsenic were also detected. No doubt in some cases the water supplies the place of a hæmatinic-in, for example, anæmia and general debility, but as a rule a mineral salt of iron, and especially the persulphate, is badly borne, leading to digestive disturbance. The water has a strong astringent action. According to our analysis it contains in solution iron equivalent to 4.48 grammes of ferric oxide per litre. It was chiefly combined in the form of persulphate, the amount of SO3 found being 8.20 grammes per litre. The presence of arsenic in small quantities is calculated to assist the therapeutic action of the iron.

THE ROYAL SANITARY INSTITUTE.—A meeting will be held on Nov. 20th, at 10.30 A.M., in the Council Chamber, Exchange Buildings, Nottingham, when a discussion will take place on the Improvement of City Slums by Housing Reform and Otherwise. The discussion will be opened by Alderman T. J. Dabell, J.P., M.R.C.S., chairman of the health committee, Nottingham. The chair will be taken at health committee, Nottingham. The chair will be taken at 10.30 A.M. by Mr. H. D. Searles-Wood, F.R. I. B. A., chairman of the Council of the Institute. A general discussion is invited. Visits will be made to parts of Radford, Sneinton, and Meadows districts, where reforms are in progress or have been carried out.

Rew Inbentions.

A UNIVERSAL ELECTRICAL ILLUMINATOR.

Messrs. Allen and Hanburys, Limited, of 48, Wigmorestreet, London, W., have constructed to my design a universal electrical illuminator which I have been using for nearly 12 months in conjunction with instruments for the examination of the sigmoid colon, rectum, urethra, &c. The accompanying illustrations (Figs. 1 and 2) convey a very good impression of the general arrangement of the apparatus. Until the recent introduction of the miniature triple filament lamp most of the light rays produced by the electric lamps commonly fitted to endoscopic tubes were reflected on to the walls of the tubes which resulted in a very feeble illumination. To obviate this disadvantage it was found necessary to produce the light at the distal end of the cannula by means of a metal stem to which was screwed a small lamp. In my apparatus, by means of the new lamp invented by Brüning, most of the light is produced in parallel rays and by means of an improved adjustable condensing lens "A" and a circular, plain, reflecting mirror "B" these rays can be projected in parallel beams, thus affording a most brilliant illumina-tion at the distal end of the cannula "C." The tube-carrier,





which can be adjusted by means of an extension shaft "I," presents two apertures and gives attachment to a three-way stopcock "H," which, in the inflating arrangement adopted, allows the pneumatic pressure to be slowly reduced when necessary, thus obviating any risk of the walls of the bowel telescoping into the metal tube. The proximal aperture takes the glass window "J" which is set at the correct angle to ensure there being no back reflection of the light rays. This window is removeable, being attached by a bayonet joint. The distal aperture receives the sigmoidoscopic or urethroscopic tubes, which are all interchangeable and are also fixed by a bayonet joint. four shown in Fig. 1 for examination of the sigmoid

colon are 30 centimetres in length and of 18, 20, 22, and 24 millimetres in diameter. Those illustrated for examination of the urethra are Nos. 22, 24, and 26 French catheter gauge. Obturators for the introduction of these tubes are provided. Fig 2 depicts the method of lateral adjustment, "FG," which enables the lamp to be swung over to the right or left side as desired, for obtaining instantaneously an unobstructed field for cleansing purposes. A telescope, "D," fitted with a sliding eye-piece, giving a magnification of about ten times and a range of from 6 to 18 inches, is adjustable to the apparatus. When magnification is not required a plain funnel-shaped eye-piece "E" is employed. The switch "L" enables the current to be cut off when possible, thus lengthening the life of the lamp and at the same time preventing it from becoming unpleasantly hot. The triple filament lamps require from 10 to 12 volts and they can be illuminated either from a 6-cell accumulator or from a wall rheostat when the main electric current is available. Messrs. Allen and Hanburys supply a small unspillable accumulator known as the "Oslite" which is very suitable for use with this apparatus. The connecting cables "M" are well insulated and are covered with india ubber tubing. Socket terminals are also provided which fit securely on to the pins on the main handle "N."

In this apparatus the following advantages will be at once apparent: 1. There is no obstruction in the lumen of the cannula to interfere with the operator's view. 2. The small lamp used at the distal end of other forms of endoscopic tubes is very liable to fuse or become covered with fæces, mucus, &c., and thus rendered useless. In this instrument these defects are overcome. 3. When it becomes necessary to cleanse the bowel or urethra the lateral adjustment readily enables this to be done, whereas when the light is obtained at the terminal extremity of the tube the lamp has to be constantly withdrawn before this can be accomplished. 4. Finally, the illumination is better than that obtained with any other instrument.

E. Canny Ryall.

Harley-street, W.

ASYLUM REPORTS.

Lamark District Asylum (Report for the year 1908-1909).—The average daily number resident at this asylum during the year ending May 31st was 933. The admissions numbered 269, and show an increase of 21 on those of the previous year, and 39 more than the average admission rate for the last 13 years. The discharges numbered 252. The recovery-rate was 40·3 per cent. on the certified admissions. 30 patients recovered within 3 months of admission, 27 within 6 months, 23 within 12 months, 17 after a residence of from 1 to 4 years, and 3 after a residence of from 1 to 4 years, and 3 after a residence of from 1 to 4 years, and 3 after a residence of from 7 to 11 years. The death-rate was 7·7 per cent. on the average number resident. The medical superintendent, Dr. Neil T. Kerr, points out that of a total of 85 cases of general paralysis admitted to the asylum since its opening 75 patients were males and 10 females, giving a percentage of 88·23 and 11·76 respectively. This is somewhat in excess of the 5 to 1 ratio given by most writers, and serves to bring out even more clearly the greater liability of males to the disease.

Glasgow Mental Hospital, Gartloch (Report for the Year 1908-1909). - During the year ending May 15th, 1909, there were 1033 cases under care. There were admitted 282 patients. There were 106 persons discharged as recovered, this giving a recovery-rate of 37.58 per cent. There were 96 deaths, giving a percentage on the average number resident of 12.6. The male death-rate was 16.3 and is accounted for by the character of the admissions, serious bodily illness being a prominent feature in the majority of the cases admitted. Of the 66 male deaths 27 occurred within six months of admission, and of 282 admissions only 44 are noted as in good bodily health and condition on admission. Dr. W. A. Parker, the medical super-intendent, reports that this year, as usual, alcohol, alone er in combination, was the most prolific determining cause of insanity in the patients admitted. Besides this direct influence it would appear that alcoholism is as notable a feature as ever among the parents of those patients whose breakdown or arrest of mental growth has taken place during the period of most rapid development. So far as treatment of patients is concerned it would appear that open-

air bed treatment continues to give satisfaction and is used in all new and recurrent cases. It secures its best results "in combination with very carefully graded and, as far as possible, purin-free diets." Dr. Parker is of opinion, after an experience of ten years, that the method secures more restfulness, better sleep, and better assimilation of food than when patients are treated either without bed treatment or in bed indoors. In prolonged cases of bed treatment it is combined with massage or hot and cold sprays, prolonged baths, or the static brush applications, to secure peripheral stimulation and improve the circulation and assimilation. The most notable new method of treatment introduced at this asylum during the period in question is musical drill. It promises to be useful in rousing and raising the younger lethargic dements to more useful and active life.

The Queensland Asylums.—The report of the inspector of hospitals for the insane in Queensland shows that on Dec. 31st, 1908, there were 2189 persons suffering from insanity under State control, 1358 being males and 831 being females. The population of the State at the end of 1908 was estimated at 558,237, comprising 308,837 males and 254,400 females. Calculated on these figures, the proportion of insane under care per 1000 of the population was 3.92—4.46 in the case of males and 3.22 in the case of females, this being a slightly higher proportion than in 1907. The distribution of patients in the various hospitals was 1250 at Goodna, 201 at Ipswich, and 733 at Toowoomba, with 5 in the reception-houses at Brisbane, Rockhampton, and Townsville. The average daily number resident was 2120, including 1311 males and 809 females. During 1908 there were 360 cases admitted, of whom 329 were admitted for the first time and 31 had been previously under treatment. Among these 360 admissions there were 155 persons born in Australia and 166 born in Great Britain. There were 112 deaths during the year, the death-rate calculated on the average daily number resident in the hospitals being 5.28 per cent., as against 6.38 per cent. in 1907. During the year the insanity epartment sustained a severe loss in the death of Mr. James Ballantine Hogg, inspector of asylums and medical superintendent of the Hospital for the Insane at Goodna. A peculiarly melancholy event was the fate of Dr. R. R. Whishaw, assistant medical superintendent of the Hospital for the Insane at Toowoomba, who met his death at the hands of a patient.

LONDON COUNTY COUNCIL: COMPENSATION FOR TUBERCULOUS COWS .- A discussion arose at the meeting of the London County Council on Nov. 2nd with regard to the administration of the London County Council (General Powers) Act, 1904, authorising the seizure of cows suffering from tuberculosis of the udder. The public health committee had reported that four cows had recently been seized and slaughtered and sums varying from £11 to £13, being three-fourths of the declared value, had been paid as compensation. Mr. Reynolds, commenting on this, suggested that in recent years an illicit business had grown up for the disposal of tuberculous cattle. The medical officer of health of Portsmouth recently directed attention to "the menace to health through the systematic trade in diseased animals, particularly in tuberculous cows, carried on in markets outside Portsmouth," and stated that owing to active measures taken by the town "the diseased animals are sent to other places, and principally to London." Mr. Reynolds also thought that the London County Council was paying excessive amounts in compensation and that dealers were likely to send their diseased cattle to the metropolis for London ratepayers to pay for. He would like to get at the previous history of such cows. Mr. Easton retorted that, in the absence of general legislation for regulating the milk trade, the history of a particular cow was the very thing that could not be traced. Mr. Gilbert Johnstone, chairman of the public health committee, said that the question of tuberculous cows gravitating to London as a result of the Council's Milk Act had not been overlooked. In passing, he mentioned that the report of the medical officer of health of Portsmouth was written at least a year before their Bill came into force. Since March last only 22 cows had been seized in London. There was no reason to believe that a considerable number of tuberculous cows were being sent to them, but the officials had instructions to report at once if they noted an unusual influx, and in all cases they ascertained how long a cow had been in possession of its present owner.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 13, 1909.

Ourselves.

WE announce to-day on p. 1470 A that THE LANCET at the beginning of the new year will revert to the original price While saying this much about ourselves we are betrayed into a few words on the development of the paper during its 86 years of life. When THE LANCET was born on Sunday, October 5th, 1823, it consisted of 36 small octavo pages, the contents of which were mainly written, with the cooperation of one clerk, by one London surgeon. The measure we give is very different now to that to which the founder of the journal thought his readers entitled. For the past 15 years an average number of THE LANCET has consisted of 160 pages, and the number of subjects with which we are compelled to deal, no less than the world-wide range of addresses from which our foreign correspondents date their communications, show sufficiently that our collaborators make in themselves quite a large reading public. We lay no stress on the inevitable and progressing increase in the size of THE LANCET, for there is not a single successful newspaper with a long history behind it that cannot tell something the same story—it is in the nature of a newspaper that is alive to go on growing. But we are proud of the consistent nature of our work, and of the public confidence that year by year is put in us, while we attempt to act as a medium of interchange between the members of the medical profession in all their scientific and professional relations, and to uphold in all its phases and without fear the cause of medicine. The alteration in the price of THE LANCET has been made in accordance with the intention of the late Mr. THOMAS WAKLEY, junior, who for so many years was joint-editor with his father, and whose untimely death we are still lamenting in common with his many friends.

Hospital Construction.

AT a period of rapid development in any art or science it is always well, and may often be instructive, to pause for the purpose of comparing the present with the past. Less than half a century has elapsed since the late Sir James Simpson, in view of the frightful mortality which then followed surgical operations, advocated the employment, for hospital purposes, of temporary buildings, which could be destroyed by fire as soon as they became sufficiently saturated with noxious emanations to be sources of danger to those who were treated in them. It is perhaps a little humiliating to remember that this counsel was given at a time when the discoveries of LISTER had already dawned upon the world, and that the brilliant obstetrician was unable to foresee the extent to which these discoveries would overcome the

evils which he deplored, and would obviate the necessity for the destructive expedients which he advocated. The complete establishment of the principles and practice of aseptic surgery appeared for a time to sanction the belief that hospitals might safely be constructed in such a manner as to bestow upon them a character of permanence, in so far, at least, as that character can be attached to the work of human hands; and it is only now that we are beginning to realise that structures are prone to become obsolete, and that the growing requirements of medical and surgical practice can only be completely satisfied in the presence of a vast number of architectural and other facilities for which no adequate provision has until quite recently anywhere been made, which are conspicuously absent from many buildings to which the name and character of a "hospital" are attached, and which are used for the reception and treatment of patients. No one can venture to dispute that the ideal construction of to-day may before long be found to fall short of the increasing requirements likely to arise from increasing knowledge, and hence to be superseded in its turn; but the present character of that ideal construction is admirably set forth in a recent publication by which these remarks have in the main been suggested. Dr. DONALD J. MACKINTOSH, M.V.O., medical superintendent of the Western Infirmary, Glasgow, has written a treatise on the construction, equipment, and management of a general hospital 1 which seems practically to exhaust the subjects with which it deals, and which is calculated not only to serve as a handbook for architects engaged in hospital design, but also as a guide of considerable practical utility for all who are afterwards engaged in the application of the building and its accessories to their proper and destined uses. No staff or committee bent upon the erection of a new hospital or upon the improvement of an old one can safely neglect the principles and details which Dr. MACKINTOSH has laid down.

It would be somewhat beyond our present limits to enter into any detailed discussion of the various elements of hospital construction and administration which Dr. MAC-KINTOSH has lucidly placed before his readers, and which he has illustrated by a profusion of plans and drawings, but they include the gatehouse or admission block of the hospital. the ward unit, whether medical, surgical, or special, the out-patient department, the kitchen and laundry, provision for nervous diseases or for cases of incipient insanity, the general heating arrangements, and the requirements of the nurses' home. The nursing and ward-maids staff for each unit and the accommodation for them, and the resident medical officer for each unit and his proper location with regard to it, are also considered. The operating theatres receive special attention, both as regards construction and equipment, and no detail is too small to be fully noticed in its appropriate place. The photographic illustrations of wards and other interiors are, we presume, taken from the hospital which is under Dr. MACKINTOSH's immediate charge, and to the governing body of which, in his preface, he pays what is manifestly a well-deserved tribute for "the unfailing encouragement which they have given to every scheme calculated to promote the welfare of the patients,"

and to whose progressive spirit and zeal for efficiency he acknowledges his indebtedness for the facilities which he has had for acquiring knowledge of the best materials and methods of construction. The book is completed by a series of appendices dealing with various subjects related to its main purpose, such as with the requirements in the way of apparatus, instruments, linen, cutlery, crockery, and so forth, for a ward unit of specified size; an "analysis" of the arrangements for nurses at the Toronto Hospital for Sick Children, which are described as being of especial excellence; and an account of the conditions of medical and surgical appointments and of nursing service in the principal hospitals of the United Kingdom. It is, in fact, little less than an encyclopædia of hospital construction and management, and deals with every related subject except the actual treatment of the patients. The forms for books and registers and the suggestions for inquiries touching the means of applicants for relief, appear to be specially worthy of attention.

But in striving to realise by the mental vision the picture of a perfect and perfectly equipped hospital which Dr. MACKINTOSH has drawn for our instruction, we have more than once been led to question the position to which it would be entitled as an educational instrument. A young medical man entering upon practice is called upon to treat patients in a variety of circumstances, many of them extremely adverse to health; and, if he has been taught his profession under the highly artificial conditions described by Dr. MACKINTOSH, it would scarcely be a matter for surprise if he were unable to adapt himself to more ordinary ones, and if he were to fail in doing the best that was possible in the cottage of the workman, or even in the ordinary residences of middle-class people. It is obvious that the aggregation of patients in a single building involves risks which hardly present themselves in the case of one sick person in a private house; but the conditions of the private house are constantly and in high degrees unfavourable, and they have regularly to be encountered and overcome in practice. We greatly question whether the conditions of the pattern hospital would not have some tendency to disqualify the student who had been trained among them; they might be to him somewhat of the nature of leading strings, or of corks or bladders to one who was learning to swim. Such conditions protect both the learner and the patients in hospital against dangers from which in private practice he would have to find, and often to extemporise, methods of protection for We are here reminded of an old exahimself. mination story about two students who were respectively asked to deal with a foreign body in the auditory meatus of a cadaver. One of them asked to be supplied with the aural speculum, the methods of illumination, and the pattern of forceps which had been designed by the lecturer upon aural surgery at the school at which he had been taught. The other picked up a bit of wire that was lying at hand, twisted it into a snare, and removed the offending substance in a moment. The better the hospital, and the more complete its appliances at which the student has been educated, the more necessary will it become

conveniences upon the presence of which he must not reckon elsewhere, and the more important it is that he should be taught the principles of asepticism and the possibilities of securing it under externally adverse conditions. We cordially sympathise with the view that the hospitals should afford every possible security and advantage to all who are treated in them; but we also feel that the students should be rendered, as far as possible, independent of institutional facilities, and should be taught to consider how the absence of these facilities should be encountered in the private house and in the conditions of daily life. In the metropolis and in other great cities provision more or less analogous to that afforded by hospitals is furnished by nursing homes and other arrangements; but in rural districts the practitioner is constantly called upon to be his own sanitary officer, and it is of the first importance to his success that he should have been effectively trained in this department of his work.

The Therapeutics of Suggestion.

THE history of the medical profession, amidst much that is encouraging to the men of our own day, discloses also that which is disappointing and calculated to make us pause as we discourse on the progress of science in general and of our art in particular. Of therapeutics this is more especially the case. The practitioner of a generation or two back, as he left the schools, was in the first place a therapist and only very secondarily a pathologist and diagnostician. To-day he is better able to discover the site of a disease and to classify it when found, but he has exchanged the therapeutic confidence of his forbears in medicine for a scepticism which is sometimes paralysing to his efforts. For centuries civilised communities bore, as Sir John Forbes wrote in 1857, "the evils of polypharmacy and of that meddlesome and perturbative practice" which was still so prevalent in his day. Polypharmacy still prevails, but at its side take rank methods which at their introduction were vaunted as opening up more certain roads to health. Hydrotherapy, Mechano-Therapeutics, Hypnotism, Therapy in connexion with the coal-tar products, with many another method of more recent date, have been announced to the world in terms of the warmest commendation, have been as warmly denounced as futile or even dangerous, and with the lapse of time have found a place in our armamentarium which is neither particularly base nor particularly distinguished.

one who had been associated with this Journal for nearly 40 years wrote in 1874: "There is no chapter in the history of medicine more astounding and bewildering than the episode of 1837-38, when for a time animal magnetism or mesmerism engrossed the attention of the profession and the public." In a lecture delivered by Dr. Elliotson in August, ition, and the pattern of forceps which had been designed by the lecturer upon aural surgery at the school at which he had been taught. The other picked up a bit of wire that was lying at hand, twisted it into a snare, and removed the offending substance in a moment. The better the hospital, and the more complete its appliances at which the student has been educated, the more necessary will it become that he should learn to regard these appliances as artificial

scientific inquiry difficult. In the public discussion of the subject invective and vituperation worthy of a political platform formed the chief weapons of the respective sides, and ultimately Dr. Elliotson, as a result of a resolution passed by the Council of University College to the effect "that the hospital committee be instructed to take such steps as they shall deem most advisable to prevent the practice of mesmerism or animal magnetism in future within the hospital," resigned his position as physician to the hospital. From this time mesmerism ceased seriously to exercise the minds of members of the profession in this country. It is true that BRAID, working in 1841 and for long after, suggested the term hypnotism and gave to the world admirable accounts of the phenomena of that condition, but it was left to foreign scientists to elaborate his work and to speculate as to the physiological or pathological foundations of the states observed. Dr. G. H. SAVAGE, in the Harveian Oration for this year, selected hypnotism as the central theme of his oration, not, as it would appear, altogether without misgiving as to its dangerous character. The subject has, doubtless, a sinister connotation both for the public at large and for the medical profession in particular. The word carries suggestions of the public platform and of a disgraceful charlatanism which holds its loathsome exhibitions to satisfy a morbid and ignorant curiosity. There is no more justification for the platform performance of hypnotism than for the platform performance of surgical operations. Exhibitions of this character are alike degrading to the hypnotiser, the hypnotised, and the public who witness them; nor is the induction of hypnotism likely to be without mental harm to the unfortunates who for a few shillings submit themselves to useless and unskilled experimentation. Hypnotism as a therapeutic agent of value is no new thing. It has been used for years on the Continent in the judicial school of CHARCOT, his associates and followers. It has passed through a stage of exuberantly enthusiastic support, through a stage of chilling criticism, and at length occupies a fairly defined place. It is not a panacea. It is useful here and useless there. As with most remedies which have not been mere fashions of the passing hour, it may produce sometimes results which are little less than miraculous and at others results which are positively harmful, and it is for the physician, as a man of science, carefully to select the cases which may be benefited, and not, as the charlatan, indiscriminately to dose all his patients with the same medicament.

Obsely following upon the Harveian Oration a discussion took place at a meeting of the Harveian Society upon "suggestion" in the treatment of morbid conditions. In the continental school, which has in the past practised hypnotism very extensively, there has grown up an opinion that while suggestion, used either with or without the induction of the hypnotic trance, is of considerable value, there yet remains a simple method which is its superior and which seeks to produce its results with the help of persuasion. No part of the nationt's personality is suppressed or placed in abeyance, but an appeal is made to the crowning function of all the functions—namely, to the mind. By careful methods of rational persuasion and with the active cooperation of the

patient himself, it is sought to beneficially influence the disordered functions of the body. In the words of Dr. T. CLAYE SHAW, who opened the discussion at the Harveian Society, psycho-therapeutics postulates "the existence of conative processes, such as Will, Faith, Power of Attention, treating these as actual entities which can be influenced by being strengthened when weak or called into energy when dormant." It is, we venture to think, one of the most extraordinary paradoxes of our time that though the modern school of psychology is, as Dr. SHAW points out, usually materialistic in its teaching, insisting that will, attention, and conative processes are results not causes, and that there are no such things as primitive faculties in the direction of compelling forces, yet that the latest remedial measures put forward as of extreme validity involve an appeal to that very will and attention whose existence, in the laboratory, is strenuously denied. Monistic materialism may be our creed, but if so, it is a creed which must be disregarded in practice. We publish this week an interesting article by Dr. CHARLES MERCIER, written with characteristic directness from a more metaphysical point of view than we are accustomed to find in a medical psychologist. We commend the perusal of this short article to our readers. Dr. MERCIER points to the impossibility of picturing the neurons of the brain as containing or producing a sound of high C or an emotion of anger. These mental states are not in the brain, they are in the mind. "There is no community of nature between the vibrations of molecules in the neurons of the brain and the thoughts, passions; and volitions that occupy the mind. There is utter separation: between the mental and the material there is a gulf that no imagination can bridge." We recall that Dr. MERCIER, in his presidential address at the annual meeting of the Medico-Psychological Association last year, laid stress upon the importance of preserving the inescapable responsibility of each individual for his acts. It is to that sense of responsibility that whoever practises psycho-therapy, whether consciously or not, makes appeal; and where the physician finds it absent the feebleness of his remedial measures is most apparent.

Annotations.

"Ne quid nimis."

THE LANCET REPORT ON THE STANDARDISATION OF DISINFECTANTS.

WE have pleasure in submitting to our readers this week the first part of a report by a Special Commission of Inquiry, appointed by us, upon the Standardisation of Disinfectants. For some years past we have had abundant evidence before us that the whole question was in an unsatisfactory position. It has received careful and independent attention at the hands of several scientific observers who set themselves the task of determining whether any method could be trusted to represent the actual germ-killing capacity of a given disinfectant. No recognised method appears to have received an absolute consensus of opinion in its favour. Either there was something wrong in regard to the conditions under which the experiments were made or the deductions were

¹ See Thin Labour, Nov. 8th, 1969, p. 1369.

fallacious. Methods both of bacteriological and chemical analysis were freely discredited, and the situation was not helped by the personal feeling imported into scientific disputes. The position was clearly a case for an independent tribunal, and as the question was one of the first importance from a sanitary point of view we decided that it was also a very proper one for THE LANCET to investigate. The first part of our report is published this week and deals with the chemical side of the question. It is suggested that in the light of these results the chemical analysis of disinfectants, when based upon accurate methods, promises to assume an importance which hitherto has not been recognised. This view will be found to be strengthened when the facts brought to light in these analyses are taken into account with the results of bacteriological examination, which forms the second section of the report.

THE BIRTHDAY HONOURS.

THE most distinguished name amongst the few scientific men who have received recognition in the recent distribution of Birthday Honours is that of Sir Henry Enfield Roscoe, F.R.S., Emeritus Professor of Chemistry, Owens College, Victoria University, and late Vice-Chancellor of the University of London, who has been given a seat in His Majesty's Privy Council, a distinction which Huxley always maintained was the proper award for high scientific service to the country. There are only three medical men in the list. Among the new Knights is the name of Mr. James Matthew Moody, L.R.O.P. Edin., M.R.C.S. Eng., who has been the medical superintendent of Cane Hill Asylum for a quarter of a century and was at one time senior assistant medical officer at the Brookwood Asylum, Woking. The award is a proper, if tardy, recognition of the great value of the work done by asylum medical officers. Mr. George Herbert Pollard, M.P., M.D., C.M. Edin., who also receives a knighthood, is a barrister-at-law of the Inner Temple, and has been a Member of the Eccles Division of Lancashire since 1906. In 1897 he was elected to the mayoral chair of the borough of Southport, of which place he is a Justice of the Peace. In the Colonial list is the name of Mr. James Augustine Haran, M.D. Dub., medical officer of health at Mombasa in the East Africa Protectorate, who has been made a Companion of the Most Distinguished Order of St. Michael and St. George. Miss Annie Fletcher has received the decoration of the Royal Red Cross in recognition of devoted service rendered by her to Their Majesties the King and Queen since 1902. Although not a member of the medical profession, the Right Hon. Sir Savile Crossley, Bart., M.V.O., who has been made a Knight Commander of the Royal Victorian Order, has been indefatigable in his work for hospitals, especially in connexion with the King's Fund, the Metropolitan Hospital Sunday Fund, and the Hospital Saturday Fund. We heartily congratulate him upon his well-deserved honour. Mr. Somerville Arthur Gurney, who has been made a Knight Commander of the Victorian Order, is treasurer of the West Norfolk and Lynn Hospital, and was informed of his approaching honour when the King visited Lynn last week to inspect an art loan exhibition, of which Mr. Gurney was chairman, in aid of that hospital. Professor William Augustus Tilden, D.Sc., F.R.S., who has also been knighted, is at present Dean of, and Lecturer of Chemistry in, the Royal College of Science, London, and has held the highest official positions in the profession to which he has devoted his distinguished attainments. Amongst the most popular of the new honours will certainly be those awarded to Sir Ernest H. Shackleton and Dr. Sven Hedin, K.C.I.E., both of whom have shown such physical endurance and indomitable pluck in their respective fields of exploration.

THE DEVELOPMENT OF THE CORSET.

Mr. Arbuthnot Lane, in a paper which appears on another column, draws attention to one disadvantage of civilisation affecting most of us in the present day. He points out that owing to our habit of either standing or sitting on chairs for 16 hours out of the 24 the trunk is kept erect, and therefore there is a tendency for the viscera to drop. Nature, he says, endeavours to overcome this tendency by the formation of peritoneal bands which help to hold up the viscera, but these acquired bands in their turn may set up kinks in the hollow viscera and so bring about disaster. Hence, he is led to advocate the use of a well-fitting corset—i.e., one which will exercise a firm pressure in a backward and upward direction on the abdomen below the umbilicus. and will leave the upper part of the abdomen free. The English corset as at present manufactured he regards as harmful, but the straight-busked French shape is, he says, much less harmful, and "if skilfully made and applied serves to exert a moderate pressure on the lower abdomen." We fear that some very radical change will have to be made in the dress of women before they will consent to wear a corset merely for reasons connected with health. At present the corset is worn for two main reasons—firstly, to afford a firm basis for the support of the skirts; and secondly, to accentuate, or to manufacture, certain characteristics of the female body, commonly termed "the figure." The development of the corset, so far as its evolution can be traced, is an interesting subject. Until recently it was probable that the women of the early civilisations did not wear anything to compress that part of their bodies which lies between the last ribs and the crest of the ilia. But various objects discovered in Crete by Mr. Arthur Evans and his fellow workers show that the people of that island in very early times were, at all events, represented in pictures and on seals as having waists compressed to an abnormal extent. The date of these pictures is placed at 4000-3000 B.C., and reproductions of some of them have been exhibited at Burlington House. One of them is reproduced in Miss Jane Harrison's Prolegomena to the Study of Greek Religion, showing the Mountain Mother and her Mystes, both with waists rather smaller than their necks. Coming to the Greeks of more historical times, we find mention in Aristophanes of a device called strophion, a strip of linen very similar to the modern bust-bodice, and like ft used for the purpose of elevating and supporting the breasts. It was also called "mammillare" by the Romans, and in the case of very large mammary development it was made of leather, as appears from an epigram of Martial. In somewhat earlier times we find the fashionable ladies of Rome severely dealt with by Terence (ob. B.C. 159). In his play Eunuchus, ii., 3, 21, he says:

Haud similis virgo est virginum nostrarum quas matres student Demissis humeris esse, vincto pectore, ut graciis sient. Si qua est habitior paullo, pugliem esse alunt, deducunt cibam. Tametsi bona'st natura, reddunt curatura junceas."

The girl is not like our girls who their mothers are anxious should have narrow sloping shoulders and their chests tightly bound up, that they may be slender. If any one of them is rather more fleshy them usual they say she looks like a prizefighter and cut down her food. Notwithstanding that Nature is good enough, they make them by careful attention as slim as a rush.

Everyone knows how young girls were disciplined in the eighteenth century with backboards and tight stays, but from the above quotation it is evident that the Roman girl was none the more exempt from the tyranny of fashion. It is easy to see how the simple strophion gradually grew larger and stiffer until it culminated in the formidable stays and stomachers of Blisabethan times, and the corset remained much the same down to the early years of the nineteenth century. More sensible views now prevail, and few women compress themselves as their mothers and

For this relief credit is due to the development of exercise among women and to the use of the bicycle and the motor-car. But, as Mr. Lane points out, the use of a corset constructed to aid instead of to weaken the

abdominal muscles is a matter which concerns the medical profession in a marked degree, and it may be that in time the influence of medical men who study the matter will enable fashion to go hand in hand with good sense.

THE FATE OF THE LONG-HEADED BLOND RACE.

THE Royal Anthropological Institute of Great Britain and Ireland was particularly happy in its choice of Professor Gustav Retzius of Stockholm as Huxley lecturer for the current year. He is a son of Anders Retzius, who in 1840 divided mankind according to the shape of their heads into Gentes Dolichocophalæ and Gentes Brachycephalæ, and thereby laid the foundation on which the great superstructure of modern craniology has been reared. In delivering the Huxley lecture at the new premises of the Institute in Great Russellstreet, Professor Retzius dealt with the increase of knowledge regarding the origin and distribution of European races which had attended the application of the methods introduced by his father. A recent survey of recruits for the Swedish Army revealed the fact that 87 per cent. of the Swedes are "long-headed," while 73 per cent. have fair hair. Professor Retzius regards his fellow countrymen as a pure representation of the North European race-a race still found in Scandinavia, North Germany, and Britain, but at one time spread widely over Europe-from earliest neolithic times downwards. They may be regarded as the aborigines of Europe, not, as at one time widely believed, Aryan invaders from Asia. Professor Retzius agrees with those who take a gloomy view as to the future of this ancient race. The qualities which made them great in the past are just those that unfit them for the routine life of an industrial civilisation. The round-headed darkhaired race which has replaced them in central Europe has gained its victory by the possession of superior industrial qualities, a superiority that threatens ultimately to overwhelm the fair-haired North European stock. Professor Retzius is not one of those who believe that an industrial mode of life can alter the shape of the head or colour of the hair; the evidence in support of such a hypothesis is altogether unconvincing. Such questions, of the very greatest importance to industrial nations, can be settled only by a comprehensive physical survey of the people.

AN INTERNATIONAL CONGRESS OF RADIOLOGY AND ELECTRICITY.

WE are informed that arrangements have been made for an International Congress of Radiology and Electricity to take place at Brussels in connexion with the exhibition to be held there in 1910. The Congress, which will meet on Sept. 6th, 7th, and 8th, will be held in three sections. In the first section, general questions of terminology and methods of measurement in radio-activity and subjects connected with ions, electrons, and corpuscles will be dealt with. The second section will be divided into various subsections, dealing respectively with fundamental theories of electricity, the study of radiations (including spectroscopy, chemical effects of radiations, and other allied questions), radio-activity, atomic theory, cosmical phenomena (including atmospheric electricity and atmospheric radio-activity). The third section will be biological and will be devoted to consideration of the effects of radiations on living organisms. The section will deal with purely biological questions as well as with the use of various radiations for medical pur-

ensure the success of the Congress committees have been formed in the various countries which will take part in the Congress, and the following scientists have already consented to act as presidents of the committee in each country: Professor Lenard (Germany), Professor Exner (Austria), Professor Oëtvös (Hungary), Professor Castillo (Spain), Professor Barus (United States), Professor Langevin (France), Professor Rutherford (Great Britain), Professor Blaserna (Italy), Professor Birkeland (Norway), Professor Lorentz (Holland), Professor Ferreira da Silva (Portugal), Professor Hurmuzescu (Roumania), Professor Lebedew (Russia), Professor Arrhenius (Sweden), and Professor Guye (Switzer-Communications regarding the Congress may be addressed to Professor Rutherford or Dr. W. Makower at the University of Manchester, but anyone wishing to become a member of the Congress should communicate his intention directly to the general secretary, Dr. J. Daniel, 1, Rue de la Prévôte, Brussels. Communications relating to the Biological and Medical Section should be addressed to Mr. W. Deane Butcher, Holyrood, Ealing, London, W,

ILLUSTRATIONS IN A NEWSPAPER.

In another column will be found an account of an interesting case of fracture of both patelles by direct violence in a patient under the care of Mr. William Sheen. The first illustration to this article is of a more frivolous nature than generally characterises our pictures, but we have admitted it for the very good reason that it gives at a glance the exact method, a rather complicated one, in which the injury was brought about. The original sketch was not, of course, intended for reproduction in the columns of a scientific journal. In providing illustrations for articles for the scientific press it must be remembered that the object of the author should be not, in the first case, to produce an artistic result so much as to give a picture which will show exactly what the writer means to express. It is quite possible to combine extreme technical accuracy with perfect artistic feeling-a good example of this is Turner's drawing of a windmill given in Vol. IV. of "Modern Painters," in contrast with another drawing of the same subject by Stanfield -but for artists of a meaner kind it is generally necessary to subordinate artistic finish to accuracy of detail or even to make the illustration semi-diagrammatic, especially in pictures dealing with anatomical or surgical subjects. We have been led to make these remarks both on account of the clever sketch accompanying Mr. Sheen's paper and also because of a series of articles now running in our contemporary the Author, written by Mr. W. B. Plummer, on "The Art of Illustrating." Many of our contributors from time to time have thought us captious with regard to the photographs, drawings, charts, and diagrams with which they have supplied us for the purpose of illustrating their articles, because they have not been familiar with the processes of reproduction. Everybody cannot know everything, and the technicalities of illustration for the press may not concern medical men very closely. But the tendency of medical men being more and more towards illustrating their articles, we recommend to those who are interested the study of Mr. Plummer's instructions. In these the mysteries of the line block, the advantages and disadvantages of the wash drawing, and the necessity of using certain materials are all explained in a very clear manner. We may briefly refer to two little matters which have frequently prevented us from reproducing a drawing or a chart exactly in the form in which it has reached as. A. chart may be drawn so that the curve will reduce to a third. or even less of the original size without losing clearness, but only if the figures or the letters written upon at have been posses, both for diagnosis and therapeutics. In order to drawn on a scale to allow of the reduction. As a rule, the lettering of charts is so small that on reduction the details become illegible. The other matter is a question of colour. Many charts are sent to us drawn on squared paper printed in blue. As the blue does not photograph at all the curve is practically useless, as it appears on a perfectly blank background. Again, in a chart dealing with say, pulse, respiration, and temperature, some contributors send them in drawn in black, red, and blue. A chart drawn thus, if photographed, shows only two black curves corresponding to the red and the black, while the original blue curve does not show at all. Therefore, unless it is intended to have the chart printed in colours, the difference in the curves should be indicated by dotted or broken lines. These few explanations will show the reason why certain drawings cannot be published, and will also, we hope, enable those who wish for the publication of drawings or charts to avoid technical errors which cause both trouble and delay.

THE HEALTH OF THE NAVY IN 1908: AN INVESTIGATION INTO THE CAUSES OF HEAT-STROKE.

FROM the report on the health of the navy in 1908 it is satisfactory to find that there is a continuous improvement, the figures for 1908 showing lower ratios of sickness, invaliding, and mortality than in the preceding five years. It is regrettable, however, to find that venereal affections show no diminution, in contrast with the considerable decrease that has occurred in this class of disease in the army during the last few years. On the other hand, the saving of inefficiency and suffering in the reduction of Malta fever in the Mediterranean command has been most satisfactory: the admission-rate was 0.61 per 1000, whereas in the preceding five years it had been 14.67 per 1000; the disease has been practically extinguished in the navy as well as the army in Malta. The appendix contains an interesting report by Staff-Surgeon Oswald Rees, "Body Temperature and the Causation of Heat Stroke," with detailed observations of physiological conditions as found in the stokehold and engine-room of a cruiser in the Red Sea during September. We regret that this should be the only contribution of original research, and, indeed, the only matter in the whole volume that is not purely statistical. The report itself, as distinct from the tabular material, is hardly anything but a résumé of the figures; it cannot be described as their essence, but rather as an extractum exsicoatissimum, devoid of any savour or aroma of interest. As we remarked on the occasion of the similar report for 1907, it seems to us a pity that so much labour should be expended in the compiling of returns and official reports without any practical lesson being deduced from them by the experts best qualified to judge of their significance. In Staff-Surgeon Rees's report reference is first made to Dr. J. S. Haldane's researches on "critical" temperatures, and an account is given of the author's experiences during the passage of H.M.S. Fox through the Red Sea on her way to the East Indies station in the month of September. Staff-Surgeon Roes and Surgeon G. A. S. Hamilton for a certain period spent the first dog-watch of each day (i.e., 4 P.M. to 6 P.M.) either in the stokehold or engine-room. It was found to be impossible to carry out observations on the stokers, therefore the medical officers experimented on themselves. They imitated the actual work of the stokers-which is very severe while it lasts, but intermittent, and carried on in a brisk current of air (150 to 600 linear feet per minute), but exposed to intense heat and glare—by climbing up and down a ladder in front of the furnaces. Under the conditions of the experiment it appeared that 83° to 84° F. was the "critical" wet bulb temperature for both observers, when

working in the stokehold of this vessel, steaming at about 10 knots. This critical temperature must vary in each ship under varying local conditions, such as rate of steaming, position and kind of furnace, use of forced draught, &c.; and probably also varies with the individual, the seasoned stoker's critical temperature being higher than that of the unseasoned man. No stoker needed treatment for heat-stroke until the wetbulb temperature averaged 87° F. On Sept. 8th this was found to be the temperature of the stokeholds in use, whilst in the engine-room it varied from 87° to 96°, so that in both departments the conditions were critical and cases of heatstroke were to be expected. Even on deck the wet bulb reached 85° from 4 P.M. to midnight, the dry bulb registering 91°. 13 cases of heatstroke occurred, with 1 death. Of the three most severe cases, one (a ward-room servant) had fallen asleep with his head exposed to the full blaze of the sun; the second was a cook who had been exposed to the heat of a galley fire; the third was an engineroom artificer, exposed to the engine-room temperature, complicated by a heavy meal of "butter beans" which he had bolted. "Of the other cases the determining cause seems to have been 'fright' pure and simple, as there was a perfect panic among the young stokers." The following practical conclusions are drawn: the necessity for (1) careful observations on wet and dry bulb temperatures in engine-room and stokehold in the tropics; (2) the provision of ventilating fans in engine-room; (3) the taking of external wet and dry bulb observations so that when the former reaches 80° F. all the crew may sleep on the upper deck or in a free-air current; (4) instruction as to causation of heat-stroke so that over-eating, and so on, may be avoided; and (5) energetic treatment of heat-stroke itself by iced bath combined with cold lavation of the bowel. Staff-Surgeon Rees thinks that possibly the amount of meat in the sailor's dietary may be reduced and carbohydrates substituted as soon as the wet-bulb temperature reaches 80° F.

THE REQUIREMENTS AND THE REGULATION OF SIGNALLING BY COLOUR.

An article with the above heading appears in the American Journal of Ophthalmology for October, 1909, from the pen of Dr. Charles Oliver of Philadelphia, who has devoted much attention to the subject. In this the author dwells on the importance of normal perception of colour in situations where accurate colour vision is one of the main requisites, or is the sole determining factor for the safety of lives and for the protection of property. The author points out that rules for the selection of colour material, for the construction of test objects, and for the choice of standards of necessary colour sense should all be placed under the "supervision of a controlling body, from whom all requisite laws must proceed." It is surprising that, considering the magnitude of the interests involved and the importance of safety in travelling to a very large section of the population, some State supervision has not been established, but that it has been left to private enterprise to carry out, in many cases imperfectly or at least inadequately, the testing of the normal sense of colour perception in those who are entrusted with the lives of others, though it is known that defects in this very direction are not infrequent. It is to be remembered that the movements even of the mighty vessels that constitute the strength of the navy are guided at night by the same appreciation of the colour of lights displayed as the most unimportant coasting steamer. In addition, specific lights are employed in army signalling and, Dr. Oliver informs us, in geodetic survey work. For ready recognition of colour perception many plans have been suggested. First, direct comparison of pigment colours popularised by Holmgren's wool

test. Secondly, direct comparison of spectral colours, a plan that is satisfactory, but which requires a somewhat complicated apparatus. Lastly, the study of subjective simultaneous colour and after-colour (complementary colour), which Dr. Oliver regards as practically useless. ordinary clinical purposes he considers the selection of wools is the best and readiest method of testing the colour sense, though it cannot be regarded as quite reliable. For signalling on railways and at sea another plan should be adopted, and the testing should be done under the actual conditions which exist whilst the candidate's colour sense is officially protecting life and property. The apparatus he himself employs for the testing of sight among railway employees consists in a fixed framework which can be placed anywhere upon a company's property. Wooden frames containing properly and proportionately sized matchand confusion-colours of bunting for daylight work, or illuminated plates and lanterns of similarly tinted transmitted colour for bad weather or for night time are arranged in a row in any order. A series of five test colours form an upper row, and the comparison colours are disposed in a lower tier. One eye is tested at a time. The examinee then successively designates the nearest numerical match to each of the upper test colours by the actual position of the corresponding colour in the lower tier. The examiner, after obtaining the true colour names of the numbers chosen from an assistant, places the selections on suitable blanks for expert decision and permanent registry. Dr. Oliver thinks the colour signals should be standardised, certified as correct, issued under proper authority, and accompanied by plain and simple instructions for their use. Many points have to be attended to in properly testing for colour vision; thus, for example, to give a green signal light a similar degree of brightness, and therefore the same relative distinctness as red, it must be either five times more powerfully illuminated than the red or be given five times more exposed superficial area. It is marvellous, considering the number of trains that ply daily, not that accidents traceable to defective colour vision occasionally happen, but that they are not of daily occur-Consider that the distance signal is perhaps, in rounding a curve, only visible for a few seconds, that the information it gives has to be acted on instantaneously, and that the particular signal has to be discriminated, as in the neighbourhood of all large centres where many lines meet, from perhaps 50 others; whilst to the look-out man at sea there is the additional source of doubt and hesitation in the fallacious aspect of even the most saturated colours caught through fog or haze, or intermittently seen on the crest of waves.

THE WET OCTOBER.

THE month of October is on the average the wettest of the 12 over the greater part of these islands, but it is very seldom that its rain-yielding capacity equals that of last month in the south and south-east of England. In nearly all parts of the country the number of days on which rain fell exceeded the normal, and it is extremely rare that even wet October affords so many instances of the gauges yielding an inch or more as the result of one day's rain. Early in the month the heavy downpours were mostly confined to Ireland, Scotland, Wales, and the west and north-west of England; these were, however, subsequently eclipsed by the deluge in the southern and south-eastern counties. It is very noteworthy that these excessive rains occurred over a relatively small patch of country, the districts suffering the most being Hampshire, Sussex, and Kent. There were also some heavy falls in Essex and Suffolk, but the north and north east of England had very little or no rain during | but when attempts are made to induce, or even to compel,

the time and the Midlands very little. At Scarborough and Harrogate the month's rainfall was less than usual. The actual amount of flooding naturally varied much in the different localities. Inundations do not. of course, depend entirely on the amount of water falling during a given time, but they depend to a very considerable extent on the topography of the district, the nature of the soil and subsoil, and the capacity of the drains. They also depend to some extent on the quantity of rain that has fallen during the two or three weeks immediately preceding the culminating fall. A relatively dry soil can easily absorb an inch or two of rain that will cause devastating floods if the soil has been soaked almost daily with more than can flow off or percolate to the lower strata. This was exactly the condition in the south and south-east of England last month. The chief feature with the sunshine was its uniform distribution. London had 7 hours more than the average, but its figure of 76 hours was the least, and no less than 43 hours lower than the total at Torquay. During the first three weeks the temperature was above the average, especially at night, but when the wind shifted to the east and north towards the end of the period the thermometer indicated readings many degrees below the normal figure.

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	Number of days with rain.	Total fall.	Difference from average.	Number of hours of sunshine.	Difference from average.	
	†	inches.	inches.	hours.	hours.	
Scarborough	17	1.78	-1.40	95	- 1	
Great Yarmouth	19	3.48	+0.57	100	_	
	23	7:35	+4.60	85	-21	
Margate	22	7.80	+400	99	-21	
Ramsgate		1	_			
Broadstairs	21	7.99		78		
Dover	23	6.28		102		
Folkestone	20	6.10	+2.80	91	•	
Dungeness	21	6.17	+2.75	96	- 18	
Hastings	23	5.47	+1.75	100	-19	
Brighton	25	8.03	+4.20	87	-33	
Bournemouth	27	8.03	*	105		
Southampton	26	9-40	+5.77	90	-22	
Torquay	28	6.64	+2.63	119	+ 5	
Jersey	26	7.20	+2·12	94	-32	
Llandudno	23	4.77	+0.84	101	+13	
Blackpool	22	4.83	+0.81	93	+ 1	
Manchester	19	5.78	*	78	*	
Nottingham	22	2:56	-0.04	99	+10	
Harrogate	23	2.46	- 0*86	99	0	
Buxton	24	5.41	+0.02	109	*	
Bath	26	4.66	+1.61	112	+16	
Tunbridge Wells	22	7.10	+3.40	100	- 9	
-	24	4-07	+1.34	76	+ 7	
London (Westminster)	-	1 701	71.54	"	Ι Τ '	

^{*} No trustworthy average.

THE ASSOCIATION OF HEAD MISTRESSES AND MEDICAL CARE IN SECONDARY SCHOOLS.

WE have received from the secretary of the Association of Head Mistresses a copy of some resolutions carried at the annual meeting held in June last. The first resolution expresses disapproval of external examinations for girls under the age of 16 years. We gather that the idea underlying this resolution is that the excessive preparatory study for the examinations of extraneous bodies is likely to do harm to the younger girls, and there are certainly grounds for this contention. In the internal work of schools, both primary and secondary, care can be taken to adjust the time and subjects of study to the individual capacities of the children,

[†] A day with at least 0 01 inch.

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children to enter for outside examinations the courses of study must be arranged directly for this purpose, and if any child is entered for such an examination individual peculiarities and needs must be neglected in order to fit the child to the Procrustean bed of examination. The second resolution is even of more importance, for it expresses the opinion that there is need for the medical inspection of all children entering public secondary schools, and that provision should be made for re-inspection from time to time. We endorse cordially this expression of opinion. No small proportion of the children who enter for the higher studies, if we may dignify secondary education by this phrase, are unfitted physically and sometimes even mentally for them. The hours in the secondary schools are necessarily longer than in the primary, the work is harder, and though the children are in a sense picked the strain is greater, and therefore it is essential that care should be taken to see that the back is fit for the burden, even though it appears to be considered unnecessary to fit the burden to the back. With the present general idea that book-learning and examinations are the beall and end-all of a child's education, a precaution such as that suggested by the resolution is very necessary. The failures which occur in the lives, both mental and physical, of the children in secondary schools are more numerous than might be expected, though the percentage is certainly small, but most of the failures, be they few or many, could have been avoided by careful medical examination made at the commencement of study and repeated from time to time in the course of school life. Adequate precautions are not taken at present. It is insisted, no doubt, that a child should have no obvious ringworm or other infectious condition with which the child might infect others, but little care is taken that the child shall not receive damage from the study that is intended to benefit, and we are glad to see that the conference of head mistresses recognises this point of view.

OSTEITIS DEFORMANS AND ITS PATHOGENY.

It was in the Transactions of the Royal Medical and Chirurgical Society for 1877 that Sir James Paget first described that "form of chronic inflammation of bones" which bears his name, and since then perhaps a hundred cases or so have been recorded. While the disease therefore is relatively uncommon, and yet easily recognisable, it is somewhat curious that our ignorance of its causation is as great to-day as when the famous English surgeon first drew attention to it. Its occurrence on the Continent certainly appears to be more frequent than in Great Britain, if we are to judge by the literature, but in spite of many carefully examined cases, with pathological reports and, most recent of all, investigation by the X rays, opinion is still much divided on the exact nature of the condition. The old view which regarded it as a late manifestation of congenital syphilis, a form of syphilis hereditaria tarda, is now discredited, a result, in part at least, achieved by radiography, and the same may be said of that other view, according to which Paget's disease is nothing else than chronic rheumatism. Another theory has for a time held sway and still finds adherents-viz., that which attributes the changes to trophic disturbances under the influence of the nervous system. We know that in poliomyelitis, infantile cerebral hemiplegia, tabes, and syringomyeliato mention but one or two-bony changes, often advanced, may be met with, and in a number of instances of Paget's disease diffuse alterations have been found in the spinal cord. But they have never been sufficiently definite or frequent to bring a causal connexion between them and the bony changes within the realm of

probability. During the year two fresh cases have been reported in the pages of the Nouvelle Iconegraphie de la Salpêtrière, one by M. Klippel and M. Pierre Weil, and the other by M. Pascarolo and M. Bertolotti. The first of these concerned a woman, aged 56 years, in whom the disease had made its appearance 11 years previously and had slowly pregressed, without pain. In her the characteristic features of marked overgrowth and thickening of the bones, which curving of the long bones (and scoliosis of the vertebral column) were almost entirely confined to the right side of the body. The curious symptom of an increased surface temperature on the affected side, the difference between the two sides being no less than 5°C., was noted in her case: this symptom has been described by one or two previous observers. There was no discolouration of the skin or evidence of local infiammation. The second case was that of a man, aged 53 years, with a history of 15 years' duration. Here the condition was more or less symmetrical and much more widespread, involving as is usual the bones of the cranium, thorax, and pelvis, and, of course, the long bones. The interesting feature of these two new observations is that the patients were suffering from obvious circulatory disturbances; the man was an arterio-sclerotic, and the woman had mitral insufficiency and was slightly arteriosclerotic. In a large proportion of cases of Paget's disease arterio-sclerosis has been observed, and the view that the condition is somehow a result of vascular changes in the nutrient arteries of the bones has much to recommend it. There must, however, be another element in the causation of the disease which has hitherto escaped the eye of research: arterio-sclerosis is very common; Paget's disease is a rarity.

PUBLICATIONS ISSUED BY THE HUNGARIAN GOVERNMENT FOR THE MEMBERS OF THE RECENT INTERNATIONAL MEDICAL CONGRESS.

THE Hungarian Ministry of Public Worship and Public Instruction has sent us various publications, written in French, that were issued for the special benefit of the members of the Sixteenth International Congress of Medicine which met at Budapest last August. The most remarkable of these is an elaborately illustrated history of the Faculties of Medicine of the Royal Universities of Budapest and of Kolossvár. During the last few years many alterations and improvements have been effected at these universities. The number of chairs, clinics, and professors has been considerably increased. The history of these faculties is traced back to the fourteenth century, and brief allusion is made to the wars and invasions that interrupted the university teaching. Since the recognition of Hungarian autonomy in 1867 there has been, it is claimed, no further interruption to the forward march. The large volume before us, consisting of close upon 400 pages, with plans and photographic reproductions, shows that a great deal has been accomplished. Reproduced from photographs, very graphic illustrations enable us to see the exterior and interior of the various faculties, the institutes of anatomy, physiology, and bacteriology, the theatres, the operating room, the hospital clinics and offices, and the school laboratories-Emulating the example of his colleague of the Ministry of Public Instruction, the Minister of the Interior published two volumes. The first contains a brief description of all the charitable institutions of Hungary. In the opening passages complaint is made that but little has been contributed by private charity, so that what is done is for the most part done by the State. Nevertheless, at the end of the volume we are told that within the last 15 years the number of beds available for charitable purposes in the hospitals has augmented three-fold. In 1898 a law was

promulgated establishing the right to gratuitous medical aid. This necessitated a great increase in the number of hospitals, and the subventions to the hospitals paid by the Ministry of the Interior, which amounted to 2,179,024 crowns in 1898, rose to 5,551,213 in 1908. But, apart from this and in view of the new law, there was created in 1899 a National Fund for the relief of the sick. This fund was constituted by the levying of a direct tax that might be compared to our poor-rates. This tax yielded the first year 2,389,035 crowns and this has increased yearly, so that in 1908 no less than 7,330,400 crowns were raised by direct taxation for the relief of the sick. Added to the subvention from the Ministry of the Interior, this makes a total outlay of 12,881,614 crowns, or £536,725. other volume published by the Ministry of the Interior is devoted to public hygiene in Hungary. First an account is given of the authorities dealing with public health questions and how they are centralised, the chief being, of course, the Minister of the Interior, who has to report annually to both Houses of Parliament on the hygienic condition of the kingdom. The Minister is advised not only by the heads of the various departments but also by a superior council of public hygiene, and we are given a description as to how this council is constituted. Then the authorities for the 63 comitate or counties and the 25 boroughs of Hungary are described. More than 300 pages are devoted to the various details and functions of sanitary administration. These involve the entire legislation of Hungary on sanitary questions. To deal with this would need, not merely an extensive analysis of these laws and a comparison with those of other countries, but also investigations on the spot, so as to see how far they are effectively applied. Laws by themselves are scarcely worth more than the paper on which they are written; the whole point is the effect they have had on the community. But we have here the basis of investigations on public health questions. Whatever the subject of inquiry, the books issued by the Ministry of the Interior explain what is the law on the subject and what particular class of functionaries have charge of such matters. Thus has the Hungarian Government shown its readiness to afford information, and it is very unfortunate that comparatively little use has been made of the facilities thus given. Many, indeed almost all, of the members of the recent Congress hurried away as soon as the sittings terminated. On the other hand, while the Congress lasted there was not a moment but was fully occupied, and it is doubtful whether the books so freely distributed were read before the members reached their homes. But in any case these books should serve as a sort of invitation to revisit Hungary, and at the present juncture of our own Poor-law affairs an energetic statesman might do worse than go there now.

HONOURS IN CONNEXION WITH THE RECENT INTERNATIONAL CONGRESS OF MEDICINE.

THE last number of the Official Government Gazette published at Vienna contained the following announcement:

"Acting on the proposal of my Hungarian Minister a latere I, appreciating the great merits and work done for the Sixteenth International Medical Congress, confer on Dr. Coloman Müller, Member of the House of Lords, Director of Budapest City Hospitals, President of the Board of Health, the title of a Hungarian Baron, descending on his legal heirs; on Dr. Emil de Grósz, Professor in the University at Budapest and Director of the First Ophthalmological Chinic, the title of Hungarian Councillor to the Court; on Dr. Louis Vermes, chief physician, the title of Royal Councillor; on the Doctors Ignatius Bassa, sanitary inspector; Charles Jassniger, chief physician of the County

Workmen's Ambulatory; and Leo Liebermann, jun., first assistant in the Bacteriological Institute of the University, the Chevalier Cross of my Francis-Joseph Order.—FRANCIS JOSEPH."

THE council of the metropolitan counties branch of the British Medical Association has made arrangements to hold a meeting at which the three Direct Representatives of the profession for England and Wales on the General Medical Council, Dr. H. W. Langley Browne, Dr. H. A. Latimer, and Dr. L. S. McManus, will address their constituents who are resident in the metropolis and its neighbourhood. The meeting will be held on Monday, Nov. 22nd, at 4.30 P.M., at the St. James's Vestry Hall, Piccadilly, W. (close to Piccadillycirous). All members of the profession are invited to attend whether members of the Association or not.

THE death has been announced of Dr. John Waggett at Bournemouth. Dr. Waggett was in his ninety-first year, and has lived in retirement for over 20 years. He spent his professional life in practice in Kensington, and was an M.D. of the University of Edinburgh, as well as a Fellow of the Royal College of Surgeons of England. In 1855 he wrote a report on the cholera epidemic for the British Government.

A TELEGRAM from the Governor of Mauritius to the Secretary of State for the Colonies stated that 20 cases of plague with 15 deaths were reported during the week ending Nov. 4th.

Mr. C. O'Neill, M.D., M.Ch., M.A.O. R.U.I., has just been elected a Member of Parliament for the South Division of Armagh, Ireland.

WE deeply regret to announce the death of Mr. H. H. Clutton, senior surgeon to St. Thomas's Hospital, which occurred on Tuesday last.

Looking Back.

FROM

THE LANCET, SATURDAY, Nov. 12th, 1831.

Medical men, I have said, do not enjoy much of the patronage of these countries; and if the government did them bare justice, they would probably not be disposed to complain on this head. Other professions have not acquired much credit from their intercourse with the state and it is not likely that physicians or surgeons would be more fortunate. Of all individuals, indeed, the medical man should eschew politics. The Whig and the Tory, the radical and the ultra, stand in equal need of his assistance. (Excerpt from Introductory Lecture to a Course of Anatomy, by Arthur Jacob, M.D., Professor of Anatomy in the Royal College of Surgeons in Ireland. Delivered in the Hall of the College, Oct. 31st, 1831)

PRESENTATION TO A MEDICAL MAN.—At St. Stephens-in-Brannel, Cornwall, Mr. Donald Moore Barry, L.F.P.S., L.M. Glasg., L.S.A. Lond., was recently presented with a case of pipes from the members of the local branch of the St. John Ambulance Association as a mark of respect and esteem for his services as honorary lecturer.

THE ILLUMINATING ENGINEERING SOCIETY.—The opening meeting of this society will take place on Nov. 18th at 8 P.M. at the premises of the Royal Society of Arts (18, John-street, Adelphi, London, W.C.), when a brief report of the progress of the society will be presented by the honorary secretary and the inaugural address will be delivered by Professor Silvanus P. Thompson, D.Sc., F.R.S., the first President of the society.

THE STANDARDISATION OF DISINFECTANTS.

WITH SPECIAL REFERENCE TO THE DISINFECTANT PREPARATIONS COMMONLY SOLD TO THE PUBLIC.

A CHEMICAL AND BACTERIOLOGICAL INQUIRY.

In presenting our readers this week with the first instalment of a report on the standardisation of disinfectants we are fulfilling a promise given to them in THE LANCET of Feb. 6th, 1909, that the whole question of the standardisation of disinfectants should receive from us independent investigation.

The matter appealed strongly to us as one which in the interests of public health called for immediate consideration by scientific inquirers who had no connexion, direct or indirect, with the commercial side of disinfectants. Accordingly, no time was lost in appointing a commission and in drafting wide but simple terms of reference, with the result that actual practical work was commenced in the early spring.

This work has involved a very considerable amount of experimental inquiry in both the chemical and bacteriological laboratory. The results have been collected and are set in order in the following report, which we believe to be a contribution to the subject of the first interest and importance. For although no claim to finality in regard to the methods of standardisation outlined is made, yet the results, we venture to think, add considerably to our knowledge of the forces governing disinfection, while there have been brought to light in the course of the inquiry certain facts which should be of the greatest value in connexion with the practice of disinfection.

The bacteriological part of the inquiry has been entrusted chiefly to G. Sims Woodhead, M.A., M.D., Professor of Pathology in the University of Cambridge, who was assisted by Constant W. Ponder, M.A., M.D., M.R.C.S., L.R.C.P., John Lucas Walker Student at Cambridge. The chemical part of the inquiry fell chiefly to S. A. Vasey, F.I.C., F.C.S., Director of The Lancet Laboratory, who was assisted in the analytical work by J. E. Purvis, M.A., F.I.C., F.O.S., Lecturer on Chemistry and Physics in Relation to Public Health in the Chemical Laboratories, Cambridge.

THE NEED FOR STANDARDISATION.

The sale of disinfectants is in an unsatisfactory position in this country, and no official attempt has been seriously made to protect the public from employing an article which on examination may prove to be a disinfectant only by name. Yet the word "disinfectant" in the light of the germ theory of disease should now have an unmistakable meaning. The word "disinfectant" should mean simply and shortly a substance capable of destroying disease germs—a germicide, and anything which does not prove to be a destroyer of the activity of disease germs is not entitled to the name of disinfectant. It would be an advantage, we think, if the word "germicide" could be substituted for the word "disinfectant," and there would then be no confusion of terms. amongst which the words "deodorant" and "antiseptic" play their part, neither of which words connotes actual germ-killing power or real disinfecting property.

The fact that so far the State has not attempted to bring disinfectants within a system of control by which their germicidal efficiency could be guaranteed to the public may be attributed, we think, to the numerous difficulties which have attended both the chemical and bacteriological analyses of the complex substances

commonly sold as disinfectants. There are not wanting those who deny in the present state of our knowledge the value of either chemistry or bacteriology applied to the question of determining the practical value of a disinfectant. The chemical analysis of a disinfectant has certainly been freely discredited, if not ridiculed, as being a quite impossible criterion of the practical value of a germicide, and although it is natural to maintain that, after all, the determination of the actual germ-killing power of the disinfectant must be the only logical way of estimating its value, yet even bacteriological methods have been subjected to adverse criticism on the ground that laboratory results do not present a true picture of the practical state of affairs. The culture tube of the bacteriologist, it is argued, is a very different thing from the infected bed-pan, and the revelations of the test-tube of the chemist can have little relation to the events in a fever ward. Here, then, must be the starting point of inquiry.

Is it true that neither bacteriology nor chemistry can help us? Is it not possible to devise a method, whether chemical or bacteriological, which will enable us fairly to bring disinfectants under a legalised system of standardisation by which not merely the worthless may be distinguished from the valuable, but the weaker also from the strong? When such a method has been proved to give consistent results and to be relatively simple of execution, then the time has arrived to discuss the kind of legislative machinery which might be set in motion to ensure to the public the supply of disinfectants which disinfect.

It is obvious that if the domestic use of disinfectants is any good at all in preventing the spread of disease, there should be some security offered to the public that what they are buying is in reality a disease-germ destroyer. It is equally obvious that the employment of an inactive preparation may make the momentous difference as to whether disease is checked or spread. It will be admitted that the false sense of security which the use of a worthless disinfectant is calculated to give is a menace to public health and a direct incentive to the spread of disease.

It is the purpose of the present report to review the endeavours that have already been made to place the standardisation of disinfectants on a satisfactory footing. We give an examination of existing methods and point out probable errors which have arisen in the past, and the probable lines along which correct work may in the future be done with results possibly of practical value. It follows that the work embodied in the present inquiry has been taken up where previous investigators have left it.

Having regard to the foregoing considerations, it is obvious that our task of inquiry would resolve itself into two sections: I., the Chemical Analysis of Disinfectants; and II., the Bacteriological Examination of Disinfectants. We deal this week with the first section.

I.—THE CHEMICAL ANALYSIS OF DISINFECTANTS. DISINFECTION A CHEMICAL REACTION.

Reference has already been made to the fact that in many quarters no value is attached to the chemical analysis of a certain class of disinfectants on the ground that the results obtained throw no light whatever on the germicidal value of the compound. In other words, it seems to have been accepted that no relationship appears to exist between the chemical composition of a mixture and its germ-destroying power. This attitude on the face of it invites criticism, in view of the fact that definite chemical substances are known to exert a definite constant germicidal action. It is known, for example, that certain strength solutions of mercuric chloride or pure carbolic acid have a definite and constant germicidal power, and if that be the case then the germ-killing power is clearly a function of the mercuric chloride or carbolic acid It is simple enough to determine by chemical present. analysis the quantity of mercuric chloride or carbolic acid in the solution, and therefore to indicate in the results the germicidal value of the solution.

As a matter of fact, investigation has shown that a very complete analogy exists between a chemical reaction and the process of disinfection, one reagent being represented by the disinfectant and the second by the protoplasm of the bacterium. Further, Dr. Harriet Chick states that

¹ An Investigation of the Laws of Disinfection, by Harriet Chick, D.Sc.Lond., Journal of Hygiene, vol. viii., No. 1, January, 1908.

"the reaction velocity of disinfection increases with rise of temperature in a manner similar to that of a chemical reaction" and "it follows that there is a very great advantage in the use of warm solutions for practical disinfection." It is common knowledge that temperatare favours chemical reaction. Every practitioner knows that when testing urine for sugar, for example, the copper solution is not reduced in the cold and the red sub-oxide does not appear until the mixture is heated. If, then, disinfection is in the nature of a chemical reaction, it is interesting to inquire why the chemistry of certain disinfectants appears to throw no light upon their germicidal power. One explanation obviously may be that the present methods of chemical analysis are at fault, inasmuch as they fail to bring to light the exact chemical nature of the substance present, and may even fail to estimate its precise quantity. With complex mixtures containing the coal-tar acids we may be left in doubt as to whether analysis has been so perfected as to give a satis-factory qualitative, besides quantitative, account of the active agents present. On the other hand, the peculiar physical condition of some fluids, as, for example, the soapy and resinous emulsions of phenols, may accentuate the killing or chemical power of the disinfectant over the organisms. Dr. Harriet Chick and Dr. C. J. Martin have observed, for example,2 that the particles of an emulsion prepared by adding water to a soapy preparation of coal-tar acids exhibit active Brownian movement. The bacteria which were considerably larger than the mean diameter of the emulsified particles were seen to be bombarded by the latter. The bacteria were thus frequently brought into intimate contact with particles of tar acids, the disinfectant was appropriated by the organisms, and the death of the latter was inevitable. From these results it is concluded that the appropriation of an emulsion of tar acids by bacteria is in the first instance a process of adsorption and not a chemical combination, and that disinfectants of this class possess superior efficiency, because owing to this adsorption the bacteria rapidly become surrounded by the disinfectant in much greater concentration than exists throughout the liquid. It is important to add, however, that the same property of adsorbing the particles of the emulsion is possessed by most organic particles, in consequence of which the germicidal value of this class of disinfectant is greatly deteriorated by the presence of particulate matter other than the organisms which it is desired to destroy. It has been stated, in fact, that in the presence of organic matter the value of phenol was barely impaired, while emulsified disinfectants were reduced to two-thirds and one-half of their original value. It is perfectly clear, how-ever, that a particular physical condition of a fluid axails nothing in the cause of disinfection unless there is present a chemical substance which is an active germicide. The case is analogous to the more effectual bleaching effect of peroxide of hydrogen when exhibited in an oil emulsion instead of in a plain solution.

It will appear already from the foregoing observations that possibly we may demand of a standard disinfectant that (a) it should contain a certain proportion of a well-known germicidal substance, and that (b) the fluid in dilution with water should exhibit active Brownian movement of the particles distributed in the mixture. These requirements, however, can only apply to a certain class of disinfectants—viz., the soapy, resinous, or emulsified mixtures of phenols or other germicidal agents, preparations, in fact, which form a milky fluid with water. It happens that these are just the kind of disinfectant preparations which are mostly used for disinfectant purposes.

THE EVOLUTION OF THE COAL-TAR DISINFECTANT.

By far the majority of disinfectants sold to the public are mixtures of varying quantities of phenolic bodies with inert tar oils, in many cases with soap and resins or other emulsifying agents such as gelatin or dextrin, &c. It is interesting to inquire into the reasons which have led to the adoption of this class of compound for general disinfectant purposes. Before doing so it is well to point out that they are not necessarily ideal fluids in the work of sanitation because they possess a smell disagreeable to many persons, and, though effective disinfectants, have absolutely no deodorising qualities. There is little doubt that the public attach considerable importance to a compound that has a strong smell, but, of course, this may be a false criterion and give rise to a

serious delusion. The modern practice of disinfection, however, demands chiefly germicidal power. The forerunner of the present series of emulsified phenol bodies which are now The forerunner of largely used for disinfection was, of course, carbolic acid. The use of carbolic acid as an antiseptic and disinfectant grew rapidly out of the researches of Pasteur and Lister, who drew attention to its marked germicidal power. Time was when crude carbolic acid could be bought very cheaply by the bucketful, and sanitary authorities distributed large quantities of the acid for general disinfecting purposes. So abundantly, in fact, was carbolic acid supplied and so easily could it be obtained that a considerable number of cases of poisoning arose by inadvertence as well as by intention. Carbolic acid figured very largely in the list of suicides, and it was this fact which led ultimately to the acid and its homologues being placed in Part II. of the schedules of poisons. Privy Council Order of July 27th, 1900, permits the sale without control of liquids containing less than 3 per cent. of carbolic acid or its homologues in disinfectants on the ground that such fluid is not a poison within the meaning of the Act. In a subsequent Order of 1902 it was required that liquid disinfectants containing scheduled poisons should be sent out in bottles rendered distinguishable by touch from ordinary medicine bottles, with a label giving notice that the contents of the bottle are not to be taken internally.

Attention was in the meantime turned to the higher phenols, of which cresol or cresylic acid is the best known example. The advantages which their application to disinfection suggested were that they were less poisonous than phenol and of greater antiseptic power, but they were also less soluble than carbolic acid. Creolin was, perhaps, the first successful attempt to present cresol in a form suitable for disinfection. It was dissolved in soap or alkaline resin, with neutral tar oils, the clear, syrupy fluid producing an emulsion when mixed with water. Later, similar preparations were made, of which it was stated that they were free from phenol and its homologues, and the so-called phenoloids or oils obtained chiefly from the condensations during the process of carbonising coke in close ovens were introduced. bodies resemble the phenols in certain respects. but they appear to be more of the nature of oxidised hydrocarbons, containing a larger proportion of hydrogen to carbon than the members of the phenol series and a less proportion than the members of the cresol series.

The introduction of these and related oils, generally classed as phenoloids, rendered possible the preparation of a series of products emulsified with soap, resin, or gelatin, or other bodies which were stated to give a maximum germicidal effect and a minimum toxicity. These preparations must still be sold in accordance with the order of the Privy Council just referred to, although, compared with carbolic acid, they are relatively speaking non-poisonous. We shall refer to the point again on account of its importance, but for the present we may simply remark that the comparatively non-poisonous character of these preparations is not connected with the fact that they form emulsions. An emulsion of carbolic acid might possibly be a more rapid poison than its solution. Many of them do not contain carbolic acid or even its homologues.

The question of chemical analysis only becomes complicated and difficult when such complex mixtures of tar oils, acids, soaps, and resins, or other emulsifiers have to be dealt with. It is simple enough to determine the quantity of mercury present in a solution of its salts, the active chlorine value of chloride of lime, and so forth, but the separation of resins, soaps, or neutral hydrocarbons in a fluid which forms an emulsion with water is a difficult and uncertain matter. Further, it is desirable to discover the nature of the germicidal substance present, as, for example, whether it is carbolic acid, cresylic acid, or one of the phenoloid bodies already described. If this could be done with some degree of accuracy there can be no doubt that the results would be sure to throw some light on the probable germicidal power of the preparation.

CHEMICAL METHODS OF ANALYSIS APPLIED TO PHENOLIC EMULSIONS.

So far as we have examined the literature on the subject, there does not appear to be any method of separating the constituents of the modern emulsified disinfectant which can be regarded as at the same time trustworthy and convenient in operation. We believe that this unsatisfactory position is largely responsible for the view that the chemical

² Journal of Hygiene, vol. viii., No. 5, 1908.

analysis of coal-tar disinfectants has apparently afforded no interpretation of the question of their actual germicidal value. If, however, we admit that the method of analysis is at fault and that the results cannot be trusted, it is obvious that no data have so far been presented which can be used. Nothing is more certain than that we can estimate the exact amount of chlorine in bleaching powder or of mercury in a solution of corrosive sublimate, and since disinfection has been shown to be analogous to a chemical reaction between reagent and organism the power of these substances to destroy the organism must have some relation to the amount and kind of reagent present.

In regard to this matter an appeal might reasonably and profitably be made to those who have had large experience in the manufacture of disinfectant fluids. It is perfectly plain that makers know exactly what they use in compounding these more or less complex fluids. They must know their exact composition; they are the agents of the synthesis. They must know in particular what germicidal substance is present, whether it is carbolic acid, cresylic acid, phenoloid, or other body. They also know the proportion of this substance, and the amount and kind of emulsifying agent present, together with any oily vehicles in the form of hydrocarbons that may have been used. In a word, the manufacturer knows, or can know, if he chooses, the chemistry of his disinfectant goods. He takes care, also, to have its germicidal strength measured. He is thus in possession of the data required to co-relate, if that is possible, chemical composition with germicidal efficiency. We make no doubt that how to comply with any required bacteriological strength by chemical adjustment is no secret. We therefore maintain that a chemical method of examination, if it can be shown to give reliable results, should be of the utmost importance, if, indeed, it is not found to give ultimately a decided clue to germicidal power.

Several months' constant work in THE LANCET Laboratory convinced us of the unsatisfactory state of the existing methods of analysis. If they were not entirely untrustworthy they were exceedingly inconvenient, tedious, and troublesome. It was determined, therefore, after a careful reference to the literature on the subject, to work out a method for ourselves with the results about to be described.

Methods of analysis which depend upon the distillation of relatively large quantities of disinfectant are only suitable for the technical laboratory. The operations entailed are certainly not convenient in a public health laboratory. Methods which depend directly upon separation by solvents, like light petroleum, ether, acetone, and so on, offer many objections and their accuracy may be doubted. The separation of the solvent is not always a precise occurrence, and when that chances to be the case there is doubt as to the unalloyed state of the substance contained in the solvent. In addition, no attempt is made to differentiate the kind of phenol body present, which is very important. The method which follows is due to the investigations of Mr. Vasey and seems to us free from obvious drawbacks.

THE LANCET ACETONE-BARYTA (L.A.B.) METHOD OF ANALYSIS.

(a) Fluids containing Scaps and Resins as Emulsifiers.

The conclusion which we have come to in regard to the analysis of phenol disinfectants compounded of emulsifying agents, containing soaps and resins, is that these latter bodies must be decomposed or rendered insoluble before complete separation of the phenoloid bodies in a pure state can be effected. This may be done by converting the soluble soaps or resins, which consist commonly of potash or soda, into insoluble combinations. For this purpose a strong solution of baryta answers most satisfactorily. Fortunately, also, phenol, cresol, and the phenolic bodies generally are soluble in the resulting alkaline solution. Doubtless lime could be used, but it is considerably less soluble in water than baryta. If a few grammes of the disinfectant, which is made by amalgamating phenol bodies with soaps or resin (the constitution of most disinfectants in the market), be first hydrolysed by stirring with water and then an excess of

baryta water added, the actual germicidal body is completely dissolved in the baryta, and there is a rapid separation of the resins or soaps in the form of insoluble baryta compounds. This method is available at once for the complete separation of the phenolic bodies from the soaps, resin, and neutral oils with which they have been compounded.

Filtration is easy, the filtrate containing the phenol bodies whilst the residue consists of the fatty acids, resins, and neutral oils. For the purpose of assaying a disinfectant for its phenolic contents or strength it is only necessary to examine the baryta solution. If it is desired to ascertain the quantities of fatty acids and resins present the employment of acetone enables a separation to be made of those bodies from neutral oils. The residue from the baryta when shaken with acetone yields up its neutral oils, but leaves the soap and resin in the form of a powdery barium compound; filtration completes the separation. The acetone can be examined for the neutral bodies contained in it, while the residue on treatment with hydrochloric acid gives free fatty acids and resin which may be taken up with ether, the ether evaporated, and the residue weighed.

This is the principle of the L.A.B. method which we have found to work well and which has furnished the results given in Table I. In practice the following lines were adopted: 10 grammes of the disinfecting fluid (presumably composed of phenol bodies, soaps or resins, and neutral oils) were shaken well with 100 cubic centimetres of distilled water. After adding 15 grammes of barium hydrate crystals the mixture was placed in a capacious conical flask attached to a reflux condenser, and kept for half an hour at 100°C. by immersion in a vessel of boiling water. The flask was shaken at frequent intervals. The mixture was next allowed to cool, the separated oils, soaps, and resins being well spread out with a glass rod. In most cases it was found that the baryta solution could be decanted almost clean without filtering, but it is better to pour it upon a moistened asbestos plug in a glass funnel, the funnel being attached to the exhaust tap of a water-pump. The residue in the flask was next washed with warm baryta solution and the whole passed through the filter. The filtrate was made to a definite volume (generally about 300 cubic centimetres). 50 cubic centimetres or more of this was treated in a separating funnel with hydrochloric acid, calcium chloride was added, and the liberated phenols were extracted and washed with ether. The ether was then evaporated in a tall flask beaker resting on the top of a metal plate kept at 100° F. A glass tube connected with the water-pump was suspended in the middle of the flask, so that ether vapour was replaced by a current of air and the whole evaporated without any separation or condensation of water. The residue, the phenol bodies, was weighed (col. 1, Table I.). It was then dissolved in caustic soda and an excess of a solution of bromine in soda added, the amount of bromine present in the solution being ascertained in a previous experiment (Koppeschaar process for estimating carbolic acid). The bromine was liberated by adding hydrochloric acid. The bromine absorbed by the phenol was thus found, and care was always taken to secure an excess of bromine in the liquid, the excess being measured by replacing it with iodine (adding a few crystals of potassium iodide) and determining the iodine by means of a deci-normal solution of sodium thio-sulphate. The amount of bromine which had combined with the phenol body was thus determined and calculated into its equivalent of carbolic acid (col. 2, Table I.) It is obvious that if the phenol body present is carbolic acid the percentage figure obtained in the bromine experiment will approximate to the percentage weight of carbolic acid found by drying the ether extractions of the acidified baryta solutions. is no agreement between these figures carbolic acid as such is not the germicidal agent present but one or other of its homologues or a phenoloid, the bromine absorption of these bodies being lower. When, in fact, the difference is wide, the conclusion may be justified that carbolic acid is absent. There were not many cases in which the bromine figure for carbolic acid agreed with the actual weight of the phenol body found, according to our examinations of the phenolic disinfectant fluids now extensively advertised to the public; and the conclusion is that real carbolic acid is not, as a rule, the basis of these preparations. But the most remarkable feature of all is that an ultimate consideration of the results of both chemical and bacteriological analyses showed that the wider the difference is between the actual weight of the phenol body found

The following, amongst others, have been consulted: Commercial Organic Analyses by Alfred H. Allen, F.I.C., F.C.S. (J. and A. Churchill, 1900), Vol. ii., Part II., in which are references to analytical methods by the following authors: Chas. Lowe, Koppe char. L. de Koningh, Messinger and Nortmann, C. E. Smith, S. B. Schryver, Riegler, Ditz and Clauser, Fresenius and Makin, W. Spateholtz; Disinfection, by Samuel Rideal, D.Sc. (London: The Sanitary Publishing Co., Limited, 1903); a paper by M. Wynter Blyth, B.A., B.Sc., F.I.C., read before the Chemical Congress, London, 1909, and published in the Medical Officer, June 19th, 1909.

and its carbolic-acid value based on its bromine absorption, the greater is its germicidal efficiency.

The residues after treatment with baryta, which are enerally of a treacly description when soap is present but hard and firm when resins are present, contain the neutral hydrocarbon oils, the fatty acids, and resins. To this about 200 cubic centimetres of acetone were added; separation gradually ensues, and the neutral hydrocarbon oils dissolve in the acetone, the soaps and resins being left After thoroughly rubbing down the insoluble matters with acetone, the acetone solution was filtered and the fatty acids or resins, as the case may be, washed with acetone and collected. They were next treated with hydrochloric acid and shaken out with ether, the ether evaporated, and the weight of fatty acids or resins was obtained (col. 3, Table I). It was found necessary to examine the acetone solution further in case some fatty acids or resins had passed into solution, but the neutral hydrocarbon oils were never directly determined by weight as oftentimes they proved volatile, and on the whole it was considered more satisfactory to record them as a difference after the other constituents had been accounted for. To the acetone solution was put a 10 per cent. solution of caustic soda and the mixture was thoroughly shaken, when about 20 cubic centimetres of petroleum (white spirit) were added to facilitate the removal of oils, and finally about 500 cubic centimetres of water. After shaking and standing, the aqueous fluid was drawn off and filtered through a wetted filter paper, and the filtrate was made acid

(5) and (6) alkalies (cols. 5 and 6); (7) emulsifiers other than soap or resins (col. 7); and (8) neutral hydrocarbon oils, &c., by difference (col. 8). In this category Nos. 1 and 2 are the most important factors, Nos. 3, 4, 5, 6, 7, 8 may be regarded as negative quantities so far as regards germicidal efficiency. It is useful, however, to determine their quantities as being so much bacteriologically inert matter, which may usefully serve as a vehicle.

The foregoing process was tested on a fluid made in THE LANCET Laboratory from materials representing those employed in commercial disinfectants. The left hand column below shows the actual composition (or synthesis) of the fluid, while the right hand column shows the results obtained by the acetone-baryta method (analysis):—

	Fluid made up lows:	as Composition Found Method.	Composition Found by Above Method.					
•	Per cent	. 1	Per cent.					
Carbolic ac id	30.90	Carbolie acid	31.50					
Reem		30.88 Fatty seids and resins Sods	29-60 (70-55					
Soap	20.58	Soda	1.05					
Water		Water	16-00					
Hydrocarbona	21.75	Hydrocerbons	21.85					

The bromine process gave 31 00 per cent. of carbolic acid.

It should be added also that in the case of one of the commercial preparations examined the kind and amount of the components used in its manufacture were known, and it was found that the results obtained by the L.A.B. method

TABLE I.—Chemical Analysis of Various Disinfectants on the Market.

	1	2	3	4	5	6	7	8	9	10	u	12	13
Disinfectant	Phenols or phenolodds.	Carbolic acid equivalent by bromine.	Resins; fatty acids.	Water.	Sods.	Potash.	Non-soapy or non-resinous emulsifiers.	Inert bodies; hydro-carbon oils, &c., by difference.	Total neutral exclpients.	Contents of bottle.	Advertised price of bottle.	Cost per fluid oz.	Coet per 100 units of phenolic body.
COFECTANT	66-27	38.30	24.66	6.40		2.67	_		33.73	8 fl. oz.	104d.	1.31d.	6-6d.
McDougall's	47.13	22:71	33.54	5.60	-	2.10	-	11:63	52.87	4 fl. oz.	4d.	1.00d.	7-0d.
Kerol	40.56	17.23	19-14	2.40	1.41	_	-	36.76	49.44	7 fl. os.	12d	1.71d.	14·1d.
OKOL	48-50	27:44	_	38 50	0.20		5 90p	6.90	51.50	10 fl. oz.	124.	1.20d.	8 -2d.
CRUDE CARBOLIC	82 65	61.65	-	2.80	_	_	-	14.55	17:36▲	10 fl. oz.	6d.	0.60d.	2.5d.
Вастох	39.70	19:30	16.70	6.00	-	1.88	-	35.72	60:30	11 fl. oz.	12d.	1.09d.	9-0d.
CYLLIN (Medical)	32.08	12.79	35-11	6.40	-	1.48	-	24-93	67 -92	4 fl. oz.	12d.	3.00q	31·0d.
CALVERT'S No. 5 CARBOLIC	93· 2 6	74:09	_	6-00	- 1	_		0.74	6·74A	8 fd. os.	12d.	1 50d.	5-3d.
CYLLIN (bulk sample)	40-41	24.16	31.23	10-40	2.24	_	-	15· 72	59 -59	d gallon.	48.	0 60d.	5 -9 d.
IZAL	41:35	25.48	_	47:14	0.10	_	11.41G	Traces.	58.65	4 fl. oz.	6d.	1 50d.	12.0d.
LYSOL	50-96	40.45	28.12	18:40	_	2-52		_	49-04	8 fl. oz.	12d.	1 50d.	10.0d.
Lawes'	28-20	18.08	25.73	13.60	2.60		-	29.87	71.80	6 fl. oz.	, 6d.	1.00d.	12 Oct.
Prarson's	20.70	12.73	17:35	8.00	3.87	_		50 08	79-30	8 ft. oz.	12d.	1 50d.	24-0d.
JEYRS' (Chemists')	17:80	11.50	20.19	6.40	1.60	_	-	54.01	82-20	10 fl. oz.	12d.	1.20d.	22.0d.
KRYSYL	14·16	9.87	15.22	12:00	2.20	-	- 1	56.42	85.84	20 fl. oz.	10∤d.	0-52d.	12·3d.
ZOTAL	10.09	6.70	35-42	21.60	2.49	_	- 1	30.49	90.00	32 fl. oz.	12d.	0-37d.	12.5d.
JEYES' No. 2 (Grocers')	5-13	1.87	23-21	22:40	1.38		-	47.88	94.87	10 fl. oz.	12d.	1.20d.	77-0d.

A = Neutral oils and water only.

n = Dextrin.

 $\alpha = Gelatin.$

with hydrochloric acid, and exhausted with ether. On evaporation, the ether yields the resins or fatty acids which failed to be retained in the barium residue. The amount usually is small. The weight is added to the weight of fatty acids or resins previously found in the barium residue.

The water, if present, was estimated by taking 25 grammes of the disinfectant fluid and adding exactly 10 cubic centimetres of a 10 per cent. solution of sulphuric acid and then 25 cubic centimetres of petroleum (white spirit). The mixture was then thoroughly shaken and left to rest. When separation was complete the clear liquid below was drawn off into a narrow and accurately graduated glass cylinder and its volume read, the excess over the 10 cubic centimetres of aqueous sulphuric acid added being regarded as the water present in 25 grammes of the sample. The alkalies were determined by getting an ash and titrating with standard acid.

The following data were thus obtained by the foregoing procedure: (1) phenol bodies directly by weight (Table I., col. 1); (2) carbolic acid value of 1 by bromine absorption (col. 2); (3) fatty acids or resins (col. 3); (4) water (col. 4);

of analysis were for all practical purposes in agreement with facts.

(b) Fluids containing neither Scap nor Resens as Emulsifiers.

There are, however, disinfectant preparations on the market (as will appear in Table I.) which, the use containing phenols, or bodies resembling phenol, as a permicidal basis, are not made up with soap or resin. They are simpler preparations containing the germicidal agent brought into uniform suspension by means of gelatin or gum (see Izal (gelatin) and Okol (dextrin) in Table I.). In such cases the treatment with baryta is not necessary, there being neither soap nor resin to separate. It was found that these substances could best be examined by treating 10 grammes of the fluid with an excess of absolute alcohol or acetone which dissolves the phenoloid, but precipitates the gelatin or dextrin. The insoluble mass was thoroughly exhausted by rubbing down with successive washing of acetone and finally dissolved in water; then the solution was evaporated to dryness and the residue of gelatin or gum so obtained dried and weighed. The acetone or alc shol solution containing the phenoloids (and neutral oils if present) was next

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shaken up with a 10 per cent. solution of caustic soda and diluted freely with water. Any neutral oils present were thus set free, the separation being promoted by adding 20 cubic centimetres of petroleum (white spirit). The alkaline solution was then drawn off and filtered and the filtrate made up to a known volume. Part of this was acidified and CaCl₂ added, the separated phenoloids were exhausted with ether, the ether was evaporated, and the phenoloid weighed as described previously. The phenoloid after weighing was dissolved in caustic soda and examined in regard to its bromine combination value, as set forth in the analysis of soapy and resinous fluids. The water in these preparations was determined in the same way described in the analysis of disinfectants containing soaps and resins, but a longer time was required for the complete separation of the water from the phenoloids and oils owing to the difficulty of breaking up the emulsions.

The application of the foregoing analytical methods to the chief disinfectant preparations found on the market is given in Table I. The examples there appearing represent the preparations widely advertised to the public, and in every case the samples examined were purchased in the open market. The following were examined:-

Izal.—Newton, Chambers, and Co., Limited, Thorncliffe, near Sheffield. The contents of the bottle measured 4 ounces, and the price fixed by the makers was 6d. Estimated cost per ounce. 150d. Okol.—The Sanitas Co., Limited, Locksley-street, Limehouse. The contents of the bottle measured 10 ounces, and the price fixed by the

contents of the bottle measured 10 ounces, and the price fixed by the makers was 1s. Cost per ounce, 120d.

Bactoz.—The Sanitas Co., Limited. The contents of the bottle measured 11 ounces, and the price fixed by the makers was 1s.

Estimated cost per ounce, 120g.t.

Estimated cost per ounce, 1'00:1.

Cofectant.—Edward Cook and Co., Limited, Bow, London, E. The contents of the bottle measured 8 ounces, and the price fixed by the makers was 10/d. Cost per ounce, 1'31d.

McDougalls M.O.II. Fluid.—McDougall Bros., 66-68, Port-street, Manchester. The contents of the bottle measured 4 ounces, and the price fixed by the makers was 4d. Cost per ounce, 1'00d.

Kerol.—Quibell Bros., Limited, Newark. The contents of the bottle measured 7 ounces, and the price fixed by the makers was 1s. Cost per ounce, 1'21d.

Lawes Fluid.—Lawes Chemical Co., Limited, Mark-lane, London, E. The contents of the bottle measured 6 ounces, and the price fixed by the makers was 6d. Cost per ounce, 1 00d.

Pearson's Antiseptic.—Pearson's Antiseptic Co., Limited, 15, Elmstreet, London, W.C. The contents of the bottle measured 8 ounces and the price fixed by the makers was 1s. Cost per ounce, 150d.

Zotal.—Burgoyne, Burbidges, and Co.. Coleman-street, London, E.C.—The contents of the bottle measured 32 ounces and the price fixed by the makers was 1s. Cost per ounce, 0.37d.

the makers was 1s. Cost per ounce, 0.37d.

Krysyl.—Baiss Bros. and Stevenson, 4. Jewry-street, B.C. The contents of the bottle measured 20 fluid ounces and the price fixed by the makers was 10½d. Cost per ounce, 0.52d.

Lysol.—Charles Zimmerman and Co., 9 and 10, St. Mary-at-Hill, London, E.C. The contents of the bottle measured 8 ounces and the price fixed by the maker was 1s. Cost per ounce, 1.50d.

Carbolic acid (crude).—Purchased at a chemist's shop in Cambridge, 25, Sidney-street. The contents of the bottle measured 10 fluid ounces and the price charged was 6d. Cost per ounce, 0.60d.

Carbolic Acid No 5.—Calvert's, Manchester. The contents of the bottle measured 8 ounces, and the price fixed by the makers was 1s. Cost per ounce, 1.50d.

Cost per ounce. 1-50d.

Jeyes fluid districtant (black label; purchased at a chemist's shop).—
The Jeyes' Sanitary Compounds Co., Limited, 64, Cannon-street,
London, E.C. The contents of the bottle measured 10 ounces, and the
price fixed by the makers was 1s. Cost per ounce, 1-20d.

Jeyes Fluid Districtant No. 2 (brown label; purchased at a grocer's
shop).—The Jeyes' Sanitary Compounds Co., Limited. The contents of
the bottle measured 10 ounces, and the price fixed by the makers was 1s.
Cost per curse, 1-20d.

Cost per ounce, 1-20d

Oyllin (crade) supplied in bulk half-gallon drum by the Jeyes Sanitary Cyllin (crade) supplied in bulk half-gallon drum by the Jeyes saniary Compounds Co., Limited. The price was 4s. Cost per ounce, 0.60d., based, however. on a bulk sample. A sample of "Jeyes Special Fluid Cyllin Disinfectant" was obtained which gave chemical results identical with those given by the bulk sample. The bottle contained 9 fluid ounces and the price charged was 1s. The cost per ounce of this retail sample, therefore, was 1.33d. and the cost of 100 units of phenolic bodies 11d.

Cyllin (meileat).—The Jeyes' Sanitary Compounds Co., Limited. The contents of the bottle measured 4 ounces, and the price fixed by the makers was Is. Estimated cost per ounce, 3d.

THE SIGNIFICANCE OF CHEMICAL RESULTS.

We believe that our results give a very fair statement of the chemical composition of the disinfectants enumerated. Assuming that to be so, is this chemical information of any We believe that if the results are carefully considered they will be found to possess a value which has not before been recognised. To begin with, the analyses, of course, show-what previous methods may have done-the proportion of active materials as compared with inactive materials present. Thus the phenolic constituents in the proprietary preparations will be seen to have as wide a range as from 5.13 to 66.27 per cent., while what may be

called the inert excipients (col. 9) (soap, resin, neutral oils, alkalies, water) range from 39.73 per cent. to as much as 94 87 per cent. These wide differences clearly affect the question of intrinsic value, for the phenol compounds may be taken to be the chief costly constituent present as compared with mere soap, resin, water, and hydrocarbon oils. If it should happen, to take a simple case, that 6d. is charged for 8 ounces of a disinfectant fluid which is found to contain 30 per cent. of phenol bodies, and the same price is charged for the same quantity of another fluid which only contains 10 per cent. of phenol bodies, the purchaser is getting much better value in the former case, assuming that the germicide is presented in both cases in its active form. The fact, however, of combining the phenols in such a way that their highest efficiency is obtained cannot add much to the cost of production of the disinfectant. Cols. 10, 11, and 12 in Table I. are of interest in showing the amount of disinfectant fluid sold for a given sum of money, while col. 13 shows the cost of a hundred units of phenolic. bodies, the figures being based on the percentage proportion of those present. It will be seen that there are great variations in the numbers. In the case of crude carbolic acid itself the cost of 100 units is $2\frac{1}{2}d$. The cost of 100 units of phenolic bodies in the case of proprietary disinfectants varies from 5d. to over 6s. There is clearly some anomaly here, unless it can be shown that germicidal action has no relation whatever to the proportion of phenolic bodies present, or unless it can be proved, in spite of any assistance which emulsifying agents may give, that the germicidal action of a fluid containing, say, 5 per cent. of phenol bodies, can be equal to that of a fluid containing five or ten times that amount.

Beyond the mere analytical results there are indications, we believe, that a successfully conducted chemical analysis will throw light upon the actual germicidal value of a preparation. Such ought to be the case, it might be thought, if we accept that disinfection is analogous to a chemical reaction in which the disinfectant and the germ are parties in the equation. We cannot pretend that the exact interpretation is at this stage apparent, but when we come to compare the chemical behaviour of the various phenolic constituents of disinfectants with the bacteriological findings we shall see that under certain conditions the carbolic coefficients calculated upon the results of bacteriological experiment appear to be indicated by certain chemical

We must, however, leave the full discussion of this most interesting and important question until next week, when the report will be completed by the presentation of the bacteriological section of the inquiry.

(To be concluded.)

GLASGOW UNIVERSITY CLUB, LONDON.—The members and friends of the Glasgow University Club, London, dined together on Nov. 5th with Lord Rosebery, as chairman, at the Gaiety Restaurant, Strand, London. Amongst those present were Colonel W. Babtie, R.A.M.C., V.C., C.M.G., Dr. S. H. Belfrage, Dr. M. G. Biggs, Dr. G. H. R. Dabbs, Surgeon-General W. L. Gubbins, Mr. W. G. H. R. Dabbs, Surgeon-General W. L. Gubbins, Mr. W. Sampson Handley, Dr. G. A. Heron, Dr. L. F. Knuthsen, Sir Shirley F. Murphy, Dr. G. Rankin, Mr. Charles Ryall, Dr. T. Dixon Savill, Mr. G. Templeton, and Dr. Leonard Williams. The toast of the evening; "The University and the Club," was proposed by Lord Rosebery, who referred to the "sprouting up" of new universities all over the country and hoped the result would influence the national destinies. He was doubtful as to the spacess of grafting on destinies. He was doubtful as to the success of grafting on to the universities of Oxford and Cambridge the newer technical schools, for in these developments they could not compete with the newer universities. The University of Glasgow was ancient but was also new from its union with the city of Glasgow. The University of London might attract from all the scattered portions of the Empire the students who would naturally come to the metropolis, but it could never be so closely identified with London as was Glasgow with its University. The University of Glasgow was sending out men all over the Empire, and there was not a place where there could not be found a graduate of Glasgow forming a centre of learning and civilisation and exercising an influence for public good. Other speakers were Professor W. P. Ker, for public good. Other speakers were Profe Canon Hensley Henson, and Mr. W. Lorimer.

SOME CONSIDERATIONS OF MEDICAL EDUCATION.

III.1

The Requirements of the General Medical Council as to Preliminary Scientific Education.—The Place of Biology in the Curriculum.—Instruction without Examination. English Conjoint Board and the Preliminary Scientific Subjects.

THE General Medical Council has been for many years aware that the curriculum of the medical student bade fair to be overloaded, and some ten years ago official notice was taken of the fact by the institution of a Committee on Preliminary Scientific Education, which committee, forming a Joint Committee with the Committee on Examination, reported to the Council in 1904 in very important terms. The committee obtained information from a very large number of licensing bodies and medical and scientific institutions, and as a result of summarising all the knowledge which it acquired it was able to state that no very great difference of opinion existed among any of the bodies concerned. As so frequently happens, the position of the London medical schools was not quite on all fours with that of the other institutions because the London schools, as forming parts of the University of London, intimated that they would reply through the University. The University, however, does not appear to have consulted all the schools, although there is no reason to suppose that had this been done the result of the inquiry would have been less uniform. The eight recommendations of the Joint Committee were-

1. That an examination in chemistry in order to be sufficient should comprise a written paper, a practical examination, and an oral examination.

2. That in respect of chemistry a synopsis of subjects should be issued by each licensing body and that the scope of the examination in chemistry should not fall below that which has been indicated in the enemistry snould not fall below that which has been indicated in the report of the visitors and has been generally approved by the licensing bodies.

odiles.

3. That the examination in practical chemistry should not be limited to simple qualitative analysis but should include easy preparations and simple experiments illustrating important principles.

4. That an examination in physics in order to be sufficient should comprise a written paper and an oral examination, the latter to include practical questions on the use of physical instruments and

5. That in respect of physics a synopsis or syllabus of subjects should be issued by each licensing body and should include the elementary mechanics of solids and fluids and the rudiments of heat, light, and electricity

electricity.

6. That elementary biology should be retained in the curriculum.

7. That an examination in elementary biology in order to be sufficient should comprise a written paper and an oral examination, the latter to include practical questions on specimens and dissections and on methods of microscopical investigation.

8. That, in respect of elementary blology, a synopsis of subjects should be issued by each licensing body.

Until the sixth recommendation was reached the views of the committee were adopted by the Council with unimportant verbal alterations, and indeed one or two of the recommendations were reaffirmations of resolutions which the Council had already decided by vote at previous debates. But around the sixth recommendation "that elementary biology should be retained in the curriculum" an interesting debate arose. This debate was started by a proposal of an absolutely novel character made by Dr. John Yule Mackay, who proposed for the consideration of the Council an amendment in the following words :-

That the Council is of opinion that while the subject of biology should That the Council is or opinion that while the subject of bloogy should be retained in the curriculum it will not regard it as necessary that a prefessional examination in the subject should be demanded, provided the student has attended and duly performed the work of a satisfactory course of instruction in the subject as part of his curriculum at a university or duly recognised school of medicine.

Dr. Mackay, speaking in support of his amendment, placed biology in a different position from that of chemistry or physics. He pointed out in an interesting speech that the amount of work which the student was now compelled to do

in biology and in State medicine was heavy and growing heavier, while more attention also had perforce to be paid to the details of many branches of medical studies—he instanced mental diseases and ophthalmology-wherefore he considered that, if it was granted that the curriculum must be lightened, it followed that it was in the preliminary scientific subjects that the change must come. He thought that the principle of having subjects in the syllabus upon which it was possible that the students would not be examined might relieve the overcharged curriculum and the principle suggested in the first instance for biology might be extended in other directions.

The amendment was seconded by Sir John Batty Tuke on the ground that it brought to the notice of the Council a principle "which would tend to reduce the amount of weary grind that went on and resulted in no intellectual activity and the acquisition of the minimum of knowledge," and as far as his remarks were levelled against the abuse of the examination system, he was undoubtedly expressing the opinion of most of the medical profession and very many teachers and examiners. The Council, however, was divided as to the advisability, or even the possibility, of laying down that a subject should be a subject of teaching and not of examination, and it is difficult not to anticipate that if a subject were explicitly excluded from examination by the Council it would very soon be excluded from study—at any rate, the classes in it would come to be attended only on compulsion and in a perfunctory manner. Sir William Thomson made this point in his contribution to the debate. While admitting that year by year the work of the medical student had piled up until it was becoming more and more evident that five years were quite insufficient to enable him to master the details of his training, he held that if biology was only to be an instructional course there would be difficulty in saving it from becoming a farce. The whole of the Council considered that elementary biology in some form or another must be retained in the curriculum, although there were divergences of opinion as to the precise meaning of "elementary biology," a situation which induced some members to urge that the Council should lay down a minimum syllabus of biology, and which equally justified other members of the Council in declining to attempt what they considered an impossible task. Eventually Clauses 6, 7, and 8 were approved of by the Council, while Dr. Mackay's proposal reached this position that the Council instructed the Education Committee to collect information and report on the subject of the feasibility of retaining certain subjects in the curriculum without requiring examination upon them. We shall see later what became of this instruction.

The debate showed clearly that the Council, upon information derived from representative educational and examining bodies, was not prepared to recommend any lightening of the curriculum as far as the preliminary scientific subjects were concerned. There must be written and oral examinations in physics, and every student must be prepared to be examined in biology. While there was a tacit agreement that the curriculum was overloaded, the lightening of the load by throwing biology overboard or by making the instruction in chemistry and physics less important was not found in keeping with modern or progressive ideas of medical education. And at this juncture, at the same meeting of the Council, there occurred a second interesting debate, started in a totally different manner but covering much of the same ground and dealing with many of the same questions, inasmuch as the adoption of the recommendations of the Joint Committee by the Council may be regarded as an acknowledgment by the Council that the admittedly overcrowded condition of the medical curriculum could not be met by any modification of the preliminary scientific courses.

 $^{^1}$ Nos. I. and II. were published in Ter Lancet of Oct. 23rd (p. 1232) and 30th (p. 1301), 1909, respectively.

The other obvious alternative was to reconsider the length of the curriculum or the possibility of arranging the subjects within the curriculum in some more flexible manner. The practical action of certain institutions, notably the Conjoint Examination Board of the Royal College of Physicians of London and the Royal College of Surgeons of England, had this possible reform in view. The situation which was revealed at this debate more than four years ago remains unchanged, and may be considered as the middle stage of a dispute which had its origin in 1890 when the medical curriculum was lengthened to five years; and that the points at issue remain unsettled may be realised by a leading article which appeared in THE LANCET,2 having special reference to the views expressed by the science masters of public schools assembled in conclave to protest against the non-recognition by the General Medical Council of their teaching.

When the five years' course was instituted in 1890 it was not contemplated that the preliminary sciences should be studied elsewhere than at recognised schools of medicine or science. But the Conjoint Examining Board in England from a very early period exercised its discretion under the charters of the Colleges and granted recognition of the science courses given at many schools, and the Board continues to do this despite the regulations of the General Medical Council which are held by the Colleges not to override their privileges. Whether if the wording of the regulations had been different, so that the authority of the General Medical Council had been expressly set out, the Colleges would at the time have resisted it is not easy to guess, but the vagueness of the language employed in the earliest regulations affecting the five years' course undoubtedly conduced to the awkward situation which has arisen. Probably the Council at the time had not even contemplated the possibility of the medical curriculum proper being commenced at any secondary school, or anywhere save at certain universities, medical schools, and scientific institutions. As soon as the flaw was seen an amending resolution was passed containing a new regulation, to come into effect on Jan. 1st, 1900, to the effect that no medical student should be registered until he had commenced his studies at a school of medicine or at a scientific institution recognised by one of the licensing bodies and approved by the Council. The Conjoint Board in England refused to be bound by this regulation, and continued to recognise the instruction given in various schools in the preliminary scientific subjects as sufficient to admit students to the preliminary scientific examinations of the Board. That is to say, that schoolboys were able to count part of their schooltime, when they were presumably engaged upon their general education, as part of the statutory five years of the medical curriculum. The Council then asked for a return from all the teaching institutions recognised. with the object of finding out whether they were sufficiently equipped for teaching and whether the instruction given was adequate in amount. The return, which has been printed in the Council's minutes, showed that the teaching given was, in the opinion of the Council, of an unsatisfactory nature. Biology was taught in very few schools. As to chemistry and physics,

The course of instruction followed in most of the schools is less than 15 hours a week; in many it is very much less. And it is evident from the statistics presented that in some of the cases it is actually possible for six months of medical study to be constituted by a course of instruction in chemistry and physics, limited, so far as these subjects are concerned, to four or five hours a week, taken out at an ordinary grammar school during school hours, or at a technical institute, it may be in its evening classes.

The Council then decided to inspect the first professional examination of the Conjoint Board in England and that of

other bodies which had followed the example of this Board in recognising school work as part of the medical curriculum. Following on the inspection of the examination the two subjoined resolutions were passed by the Council on July 15th, 1903:—

(1) That the examination in chemistry, physics, and biology of the Examining Board in England is in the opinion of the General Medical Council insufficient. (2) That the courses of study in chemistry, physics and biology in many of the teaching institutions which have been recognised by the Examining Board in England, but not approved by the Council, are in the opinion of the General Medical Council insufficient.

Similarly the examinations of the other bodies recognising school work were found to be insufficient.

The Council then proceeded to define its requirements with respect to chemistry, physics, and biology, instructing each body to draw up a syllabus showing the course of study demanded and the subjects of the examination in each of the sciences. The English Conjoint Board drew up a new and greatly extended syllabus demanding from its students:—

This was the position at the meeting of the Council on May 28th, 1904, when Dr. Norman Moore moved that the communications between the General Medical Council and the Executive Committee from the English Royal Colleges in regard to the curriculum and examination in scientific subjects should be received and entered on the minutes. The course of instruction and details of the first professional examination which it was intended to incorporate in the regulations of the Cojoint Board for the future made it quite clear to the Council that, although the Royal Colleges did not admit in any way that legitimate fault could be found with their curriculum, they were prepared to demand. from their students a minimum course in chemistry, physics, and biology which ought to be sufficient for the acquisition of the elements of those sciences, that they were prepared to examine the students by paper and by viva voce and to demand a fair standard of marks from the candidates. The Colleges, however, proposed that the courses need not run concurrently, need not be completed within one year, could be attended before the preliminary examination in general education was passed, and could be undertaken at any properly equipped school, while counting for not more than six months of the curriculum. That is to say, the Colleges, relying on (1) the prestige of their charters, (2) the admittedly admirable nature of their test examinations, and (3) the absence of any definite right on the part of the Council to demand registration of every medical student as a proof of the commencement of medical education having taken place at an institution approved by the Council, intended to sanction the education of their students in the preliminary sciences at any place which seemed good to them. Regarded in one way, this was to resist the Council; regarded in another, it could be considered as a definite effort to lighten the burden of the student, for it enabled him to enter a medical school practically ready to attack anatomy and physiology at once.

(To be continued.)

MEDICAL MAYORS AND MUNICIPAL HONOURS.—Up to the time of going to press we have been notified that the following members of the medical profession have bee, elected mayors of their respective boroughs: Aldeburgh Mrs E Garrett Anderson, M.D. Paris, L.S.A. (re-elected); Lymington, Mr. Edward F. Chinery, F.R.C.S. Edin, L.R.C.P. Edin, M.R.C.S. Eng.; Newark, Mr. F. H. Appleby, M.R.C.S. Eng., L.S.A.; Oswestry, Mr. R. de la Poer Beresford, M.D. Glasg., L.R.C.P., L.R.C.S. Edin., L.R.C.P. Lond.; St. Albans, Mr. E. H. Lipscomb, M.B., B.C. Cantab., M.R.C.S. Eng., L.R.C.P. Lond.; Wolverhampton, Mr. J. Grout, L.R.C.P. & S. Edin., L.F.P.S. Glasg.

² THE LANCET, Jan. 30th, 1909, p. 332.

THE MOTOR EXHIBITION AT OLYMPIA.

BY C. T. W. HIRSCH, M.R.C.S. ENG., L.R.C.P. LOND.

THE only International Exhibition of Motors to be held this year opens to-day (Friday) at Olympia, and as London is distinctly becoming the motor mart of the world the importance of the exhibition can scarcely be exaggerated. Since last year the large annexe at Olympia has been thrown into the main hall, and the building now forms one vast space in which some 600 motor-cars are displayed. Some people, the minority probably, say, "What is the use of visiting the show? It is true we think of buying a car, but when we have found out the names of some of the best cars we will go to the manufactories and see them there." This, of course, is possible, though some of the factories are a good way off; but it seems to me that a dozen long journeys to distant and near makers can never give the general ideas to be obtained by the three miles' walk which a visit to each stall at Olympia entails. Here are all makes of cars, engines, and accessories, and the would-be owner of a car can easily see what sort of car he can obtain for the cheque he has decided to write. The impression that most visitors will get at Olympia is that nearly all manufacturers are now catering for the man of moderate means, which I think includes the majority of the medical profession. The chief thing we all require is some form of carriage which, when the occasion demands, can be depended upon to start at once and to transport the owner from patient to patient, and to do this quickly and also economically, without vibration or noise.

A preliminary inspection of Olympia early this week confirmed my view that this, the eighth show held by the Society of Motor Manufacturers and Traders with the cooperation of the Royal Automobile Club, is much like its predecessors, only larger, with more temptations to the motorist to dispose of his present car and to indulge in one of the many and inviting new ones. Of course, the question on everyone's lips is, "Which is the best car," and naturally medical men ask, "Which is the best one for us?" The tastes of medical men vary from the lordly six-cylinder beautifully upholstered limousine to the very modest twoseated 6 h.p. single cylinder, with a Cape cart hood and a front glass or mica shield. A practitioner's income has, of course, much to do with his choice of a car, and the character of work expected of the car must also be taken into account.

The space at my disposal does not allow of an exhaustive treatment of the exhibition, but I have selected for notice this week some cars and other exhibits which appeared likely to interest a medical man, and next week other cars as well as the general features of the exhibition will be considered.

The Adams Manufacturing Co., Limited, show on Stand 145 their 10 h.p. single-cylinder car, with their planetary evermeshing gears and interlocked pedal control. Their new model has a four-cylinder engine, and can be supplied either with a standard gate-change four-speed forward and reverse gearbox, or with the ever-meshing gears as on the single cylinder.

Messis. Argylls, Limited, have an interesting range of cars on Stand 65. Some particulars of the productions of this firm were given in THE LANCET of May 30th, 1908, and August 21st, 1909. The cars which they are exhibiting are in every way up to date and worthy of the name of this oldestablished firm.

Messrs. Sir W. G. Armstrong, Whitworth, and Co., Limited, show on Stand 42 two 12-14 h.p. cars which are well worthy the attention of those seeking a small four-cylinder. The cylinders are of 80 mm. bore by 120 mm. stroke, cast en bloc with ample water jackets, the valves being all on one side and of large dimension. A good feature is that the crank shaft is supported in the upper half of the crank case, so that the lower half, which is detachable, acts only as a cover. The inlet and exhaust pipes are arranged on the opposite sides of the cylinders, and a special point which is claimed is that the inlet gases pass through the inlet valves through passages cast in the cylinders, and are thus warmed before reaching the combustion chamber. Unlike most monobloc engines, the exhaust pipe is cast separately and four-cylinder being well worthy of inspection, as it has has four outlets, one for each cylinder. Lubrication is by a been improved since it was brought out last year. The wheel

gear-driven pump in the crank case, and through ducts in the crank shaft to the main bearings. Cooling is on the thermosyphon principle, and vanes in the fly-wheel act as a fan, and suck air through the honeycomb radiator. The clutch is of the multiple disc pattern, self-contained in an oil-tight casing, and a universal joint is interposed between the engine and gearbox. Four speeds forward and a reverse are provided, and, as is now the custom, the casing of the back axle takes the weight of the car, and the inner or live axles merely take the drive. The throttle is worked by a lever on the right hand of the steering wheel or by a foot accelerator pedal. The car can be had with a wheel base of 9 feet 2 inches or with one a foot smaller.

On Stand 69 the Austin Motor Company, Limited, show two cars which are bound to interest medical men. 7 h.p. two-seater is an entirely new single-cylinder model. The bore is 4s inches and the stroke 5 inches, and both valves are on one side. Lubrication is by a pump in the crank case. A commendable feature is that two separate ignitions are fitted, and cooling is by thermo-syphon. Change speed is of the gate type, and the top speed is direct to the live axle. The propeller shaft has a universal joint at each end. As this car is built by one who was manager of the firm that built the successful little 6 h.p. Wolseley, it certainly is worthy of inspection by all in search of a small car. 15-h.p., which is shown as a landaulette, should be popular with town practitioners. The engine is under the driver's seat, thus permitting a roomy carriage with a wheel base of only 7 feet 9 inches, so it is easy to manœuvre in traffic. A 40 h.p. caravan is also shown, with a saloon to dine six people and a kitchen attached, in which a full-course meal for that number can be prepared. For patients desiring open-air treatment I cannot imagine a better vehicle, for every accommodation is provided for sleeping and lavatory purposes.

Belsize Motors, Limited, have on Stand 83 a variety of their 14-16 h.p. cars, of which the special features are four-cylinder engine, pump lubrication, thermo-syphon cooling, Bosch magneto ignition, metal-to-metal clutch, three speeds forward and reverse, with a gate change. With a standard touring body the price is £290, and with a landaulette £390.

Messrs. E. H. Bentall specialise in one chassis, of which they have four specimens on Stand 26. The special points are single unit gearbox, propeller shaft and back axle, a fibre-to metal clutch running in oil, and all the four brakes act on the road wheels direct. The valve mechanism is very simple, and is situated on top of the engine.

Messrs. Brown Brothers, Limited. on Stand 133, show their 20 h.p. four-cylinder landaulette, which has separately cast cylinders, magneto and accumulator ignition, pump lubrication, internal coned clutch, four speeds, with the gate system of change levers, and certainly is wonderful value for the price asked, £395. The "Albruna" 10-12 h.p. four-cylinder has its cylinders cast all in one piece, an automatic carburettor, magneto ignition, and foot accelerator, with auxiliary hand adjustment on the dashboard, and is priced at £240 as a two-seater and at £270 with a side-

entrance body.

On Stand 39 the Clement Motor Company have three specimens of their 14-18 h.p. car, the specification of which provides a frame of pressed steel, three-quarter elliptic outhung rear springs, four-cylinder engine, 85 mm. 120 mm., Bosch high-tension magneto ignition, lubrication by gear-driven pump, White and Poppe carburettor, leatherfaced cone clutch, tension spring easily accessible for adjustment, gate sytem of gear-changing, and transmission through cardan joint with metal-encased universal joints.

The Connaught Motor and Carriage Company, Limited, show a fine 14-20 h.p. Renault, with a cabriolet body, also a Siddeley with a double Victoria body, and another Siddeley as well as a 15 h.p. Talbot, with their three-quarter landaulette. These are on Stand 107. This firm is sole concessionaire for Messrs. Léon Bollée, who have brought out a new light four-cylinder 14 h.p., with engines cast in pairs, thermo syphon cooling, mechanical sump lubrication, and a gate-change speed. Three of these are on Stand 32, and one with a Connaught torpedo body struck me as exceptionally comfortable. They also stage on Stand No. 31 specimens of the Nene Automobil Gesellschaft, the 14 h p.

base is now longer, the clutch is improved, the front brake is of larger diameter, and the speeds are now worked by the popular gate-change.

The Daimler Co., on Stand 36, introduce for the first time their 15 h.p. valveless engine car, their larger model having given not a little satisfaction since its appearance at the last exhibition. The distinction lies in the fact that the engine has no valves in the ordinary acceptation of the term—that is, no mushroom valves operated by a cam shaft. Instead, the piston is enveloped by two open-ended shells, surrounded by the cylinder casting, these shells being worked up and down by a kind of miniature crank shaft. Running parallel to the crank shaft and revolving off it by a silent chain in the shells are ports, which are covered or uncovered by the sliding of the shells over one another and in the cylinder, and thus the cylinders are filled and scavenged, compression being maintained by a "junk ring"—a wide ring at the bottom of the head from inside the piston. These cars are bound to attract attention, and if visitors are unable to get near the Daimler exhibit a section of the Knight's patent engine can be seen on the stand (44) of the Minerva Motor Company, who turn out a 16 h.p. car fitted with a silent Knight engine, and show a chassis, a side-entrance car, and a landaulette.

Messrs. Darracq and Co. show on Stand 62 various types of bodies of their new 14-16 h.p. four-cylinder car, which was described in THE LANCET of Oct. 30th, p. 1303. With a standard double phaeton body the price is £225, and a doctor's coupé, in which the owner-driver can manipulate completely protected from the weather, is turned out at

275 guineas.

Five different models form the exhibit on Stand 60 of Messrs. De Dion Bouton. This firm were one of the first to popularise motor-cars among the profession, and their productions are probably as great favourites to-day as when they were introduced. The 8 h.p. one-cylinder is the up-to-date representation of their original 6 h.p., but, of course, it differs. The bore is 100 mm. and the stroke 120 mm., the inlet valve is mechanically operated, ignition is by high-tension magneto, the drive is direct on the top speed, it has a live back axle, and ball-bearings to all the wheels. The one shown has a two-seated phaeton body of convex shape, with high side doors, hood, and wind shield, and, like its early predecessor, it is sure to attract many purchasers. The 14 h.p. four-cylinder is similar to the 12-14 h.p. of last season, but the stroke has been increased by 20 mm. It is fitted with a new combination landaulette, comprising a double Victoria touring body with a sort of Cape-cart hood which, with glass windows, forms a perfect landaulette, and should interest all who desire an open car which the owner can drive, combined with a closed carriage. A 14 h.p. chassis, with sections cut out to show the construction and working of all the inner parts, should be seen. It is quite an education in motor anatomy. The most important departures from previous practice with this firm is the fitting of live axles to the two lightest models and the suspension of the differential on a tubular stav isolated from the frame by eight rubber buffers. On their highest-power car an eight-cylinder V type engine is fitted. Except on the 8 h.p. lubrication is forced by a pump. The clutch is of the non-lubricated three parallel disc plate type and sliding gears are now used. These are, of course, now the fashion, but beginners may regret the "fool-proof" expanding clutch-ever-in-mesh variety.

Messrs. S. F. Edge stage on their stand four noiseless Napier cars, which are sold with a three years' guarantee. Full details of these cars were given in THE LANCET of Oct. 9th, p. 1092. They are undoubtedly worthy of serious consideration by those in search of a reliable, well-built

carriage.

Germain cars are shown on Stand 28—two 18 h.p. and one 20 h.p. The important features of the 1910 models are positive pump lubrication, gate-change speed, metal-tometal clutch, steel cylinders, and brass water jackets.

Most of these exhibits have torpedo bodies, which have been introduced by Captain Theo Masui, the agent-general for the Germain cars.

Messrs. H. M. Hobson, Limited, have on Stand No. 25 three Delahaye cars and one Hobson car. Of the former, the 12-16 h.p. and the 9-11 h.p. are both well suited for medical men. On their accessory stand, No. 212, they show the new type Hobson-Pognon magneto plug. The Claudel-Hobson carburettor, which was described in THE LANCET

of July 4th, 1908, p. 44, is on view, both as a complete model and in sections. A novelty here is the Hobson tyre clamp. This clamp entirely obviates the use of security bolts, and the necessity of nipping the inner tube when it is being fitted; and, of course, saves considerable time and labour when tyre troubles occur. In fact, it makes the removal and fitting of the tube an operation which can be performed within a few minutes. This clamp can be employed with any existing cover, and no special inner tube is necessary. Another useful little article is the Bougie switch for locating engine morbidities without the necessity of removing the plug, or using a screw driver or other unsatisfactory instrument for testing, thus obviating the chance of

damaging either the magneto, coil, or accumulator.

Messrs. Charles Jarrott and Letts, Limited, have on Stand 45 two 12-14 h.p. Crossley cars, the productions of Crossley Bros., Limited, of Manchester. The special features of these are monobloc engine, all valves and tappets enclosed, and high-tension dual ignition. The engine flywheel and gearbox form one self-contained unit, so arranged and designed, however, that the engine or the flywheel and gearbox portion can be removed from the chassis independently. The clutch is of the metal-to-metal expanding shoe-type running without lubrication. The gearbox gives four speeds forward and reverse through a pivoted gate, and the propeller shaft to the back axle is encased in a steel tube. terminating at the gearbox in a spherical ball forming an oil bath for the universal joint. This tube constitutes both a radius and a torque rod, so the back springs are shackled at both ends. Front wheel brakes operated by a foot pedal, and back wheel brakes controlled by a hand lever, are fitted, thus avoiding braking strains on the transmission. The exhibit also comprises three of the 12 h.p. voiturettes manufactured by Messrs. Sizaire and Naudin. This is the car described in The Lancet of March 27th of this year, but the engine has been increased in size and power, the bore and stroke now being 120 by 140 mm. instead of 120 by 130 mm. as in the 1909 models. Some of the working parts are now more accessible, and there is an improved method of adjusting the brakes.

Messrs. Morgan and Co., who are the sole agents for the Adler cars, have on Stand 58 some six specimens of these well-known German automobiles. The 12 h.p. has a four-cylinder engine, with a bore of 75 mm. and a stroke of 100 mm. Lubrication is mechanical and dual ignition is fitted. The clutch is of the metal-to-metal cone type, and the gearbox is close up against the clutch, thus dispensing with any need for a universal joint in the clutch shaft. The back axle is of the usual bevel drive variety. One of these cars is shown with a landaulette body, extension front, and Cromwell patent folding wind-screen, and another with a very neat two-seated body. Probably the chassis that will appeal most to doctors is the new 8 h.p., which has a slightly more powerful engine than the 7 h.p. of last year: otherwise the car is built on similar lines, and with a twoseated body should make an ideal car for the man who drives himself.

The London Motor Garage Co., Limited, on Stand 82 show various models of Charron cars, and especially recommend for doctors their 15 h.p. two-seated runabout fitted with an extra folding seat, and their 15 h.p. landaulette. This firm are prepared to sell these cars on the hire-purchase system or to enter into a contract for maintenance and all running expenses of a car.

Messrs. Lorraine, Dietrich, and Co. show their British-built car, a 20-30 h.p., on Stand 68, and on Stand 71 the exhibits hail from the original establishment at Lunéville. The 12 h.p. four-cylinder live-axle car, fitted with a threequarter landaulette body by Salmons, has a special lock, and is thus well suited for town use.

Messrs. Osborn and Co., Limited, have on Stand 29 9 h.p. two-cylinder and four 14-16 h.p. four-cylinder Gregoire cars. These models are practically the same as those shown last year, except that now the gate change speed is fitted in lieu of the quadrant type. There is a rumour that Automobiles Gregoire of Poisay are building a single-cylinder chassis which will be put on the market early next year, and probably at a price not far off £100. On this stand are some specimens of the Lynton resilient wheel.

Stand 59 will undoubtedly be frequented by many medical men, as the Rover Company have always been well patronised by the profession. Their little 6 h.p., which was described in THE LANCET of August 22nd, 1908, has been further improved, and is now fitted with two independent ignitions, high-tension magneto and coil and accumulator, and high entrance doors are provided. Their 15 h.p. landaulette, with metal-to-metal clutch, change speed quadrant through cardan shaft, 820 by 120 tyres, is handsomely upholstered and finished in every detail, and is in every way an ideal carriage. This car is also exhibited with a touring four-seater body. Specimens are also shown of their 12 h.p. and 8 h.p. cars.

The Star Engineering Co., who have for several years past specially catered for the motoring doctor, show on Stand 63 specimens of their 10 h.p., 12 h.p., 15 h.p., and 18 h.p. cars. A description of these vehicles and how they are built was given in THE LANCET of Feb. 20th, 1909.

The Standard Motor Co., Limited, have on Stand 53, in the centre of the show, an entirely new 12 h.p. model, with four cylinders 25 by 4½, wheelbase 8 feet, high-tension magneto ignition, thermo-syphon cooling, and horizontal cardan shaft, with worm drive. A 16 h.p. four-cylinder and two 20 h.p. six-cylinder cars are also shown.

A car that should not be missed is the Straker-Squire on Stand 46. This firm are specialising on one model, a 15 h.p. four cylinder, which is suitable for a two-seater, four-seater, or landaulette body, and specimens with these varieties are shown by them. In another issue I hope to give some details as well as the result of a trial run on this car.

The Swift Motor Co., Limited, are represented on Stand 66 by a couple of their two-cylinder cars—a two-seated body and a side-entrance body. They also have a four-cylinder 15-18 h.p. and one of 18-24 h.p. But the car on their stand which will, I think, appeal to the profession is their new single-cylinder model, a 7 h.p. two-seater, with pressed steel frame, thermo-syphon cooling, magneto and accumulator ignitions, leather-faced clutch, gate change, live axle, and completely enclosed brakes.

live axle, and completely enclosed brakes.

On Stand 38 John I. Thornycroft, Limited, show their 18 h.p. as well as their higher powered models. The 18 h.p. has four cylinders cast en bioc, forced lubrication to all engine bearings, thermo-syphon cooling, high-tension magneto ignition, metal-to-metal clutch, three-speed gearbox, direct drive on top speed, and the usual live axle. The petrol is fed to the engine by means of pressure taken from the exhaust. On one chassis is mounted a Victoria phaeton, with high front doors, hood, and glass wind-screen.

Messrs. Warwick Wright, Limited, have on Stand 74 various types of 12 and 18 h.p. Metallurgique models. The cylinders are not placed directly over the centre of the crank shaft, but are set to one side, which enhances the power of the motor. The clutch is of the metal-to-metal type, on the principle of the internal expanding brake. Gatechange is fitted, and the writer was so impressed with these productions that he hopes shortly to give a detailed description, together with his experiences of a run on their 12 h.p. Doctor's Car. The one shown is fitted with most luxurious body-work by Messrs. Vanden Plas of Brussels.

The Wolseley Tool and Motor Car Co., Limited, have on Stand 43 various cars. One especially suited for a doctor's requirements was fully described in The Lancet of Sept. 11th, 1909, only now a considerable number of improvements have been effected. On the new 12-16 h.p. a disc clutch is used, with double universal joints between it and the gearbox, and the drive is by a worm instead of a bevel gear. Another refinement is that the front hubs have Timken roller bearings, which are tapered, and consequently adjustable for wear. The 16-20 is an endeavour to further improve the 14 h.p. mentioned in The Lancet of Sept. 11th. The engine has a longer stroke and all the improvements common to the new 12-16 model. Any kind of body can be fitted to this model, including a town carriage.

The Show is rather like a pudding—a rich one, too, nearly all plums and but little suet. So that, provided the would-be purchaser knows the limit of his purse and what he wants of his mechanical mount, he should find it easy to pick a decent plum from amongst the collection. The great thirg for the medical man, I hold, is not to be too ambitious, not to be too anxious to have a more powerful automobile than is necessary. For the man who drives himself a light two-seater, such as a 6 h.p. Rover, 7-9 Darracq, single-cylinder Austin, small De Dion, little Star, two-cylinder Renault, Adler, or Swift, is hard to beat, while those who are prepared to spend more for initial outlay as well as for upkeep will find ample choice amongst the Armstrong Whitworth,

Bentall, Clement, Darracq, Brown, Napier, Enfield, Germain, Hobson, Sizaire and Naudin, Charron, Martini, Panhard, Star, Wolseley, and Vauxhall cars to suit their needs and purses.

Some considerable time occupied in examining carriage work must be reduced to a very few lines. Messrs. Maythorn show a very light and compact miniature limousine, also a coupé landaulette which encloses the driving seat and carries two people inside, besides the driver, and by means of a sliding driving seat the driver has plenty of room to get out on the "off" side behind the levers. Messrs. H. J. Mulliner have an entirely new design of two-seated body, with hood, screen, and high side doors. Landaulettes and limousine bodies are also shown by this firm and by Messrs. W. and F. Thorn, Messrs. Morgan, Messrs. Lawson, and Messrs. Thrupp and Maberly. Certainly in this Show there is a fine display of body-work, but I think a little more attention might with advantage be devoted to the angle of the seats. The cushions are soft enough and foot-rests and warmers are now provided, but those who have to sit in a car as doctors have would, I am positive, feel more comfortable if the backs of their seats were some two inches lower than the fronts. It may be laziness to sit in a tilted-up chair, but I know this: it is more restful than the one parallel to the floor.

Perhaps the most important accessory in connexion with a car is the ignition apparatus. In the gallery practically every type can be seen, and, what is more, many working models are exhibited, so the principles can be easily grasped. The Simms Manufacturing Co. on Stand 257 have their switch starters, which enable the engine to be started from the seat without the trouble of getting down and turning the starting handle. The Bosch Magneto Co. at Stand 192 have a novelty in a magneto capable of giving sparks at the rate Thomson Bennett, Limited, display of 12,000 a minute. on Stand 271 a magneto which has a small epicyclic gear between the drive and the machine, thus the armature can be moved for retard and advance, keeping the maximum position at all points. It is adapted for starting on the switch, without an accumulator. Messrs. J. C. Fuller and Son have working models of their dual ignition with switch starter. The Electric Ignition Co. exhibit improvements in coils, contact breakers, switches, and distributors, and the New Hall E.I.C. dual ignition system. The invention of Sir Oliver Lodge, a patent igniter known by his name, is on Stand 234. The High Tension Co., in addition to magnetos, have an electric horn, the sound of which is said to carry at least half a mile. On Stand 162 the United Motor Industries, among many electric appliances, show "La Magicienne," a dynamo for lighting motor-cars. From magnetos the attention is easily turned to ignition cables, and those thinking of re-wiring their cars will find on Stand 205 all sizes and kinds of rubber-covered and braided insulated wires, which are made by Messrs. E. Kalker and Co.

On Stand 178 Messrs. Longstreth's, Limited, show the Lithanode system of car lighting, by means of which the whole of the interior and exterior illumination of an automobile is supplied from a 4-volt accumulator. This entails a particular form of lamp, as the usual 4-volt lamp is insufficient for head- and side-lights. In the one employed, by means of an adjusting screen, the beam of light proceeding from the lamp is made either parallel or divergent, and the more the rays are contracted the greater the illumination. A complete combination accumulator is also exhibited, which is suitable for both cautery and lighting purposes.

On Stand 164 Messrs. André A. Godin and Co. show a comprehensive selection of lubricators, horns (including the Godin electric horn), piston pumps for oil circulation, jacks, tool outfits, and lamps.

Tyres are an expensive and certainly anxious matter to all who motor, and especially so to medical men, as a burst or puncture may be of serious import when on a professional round. Consequently each year the writer searches through the gallery for something new and cheap. Alas! this year there may be many improvements, but there is no improvement in the matter of price. The Palmer Tyre, Limited, manufacture their corded tyres by a most ingenious machine, which is shown in operation. They exhibit a new light type which is said to be so flexible that it can be fitted even without tyre levers. These are made with a three-ribbed tread, which is deeper than previously, so that they should run an increased mileage. This company also show on Stand 296 a

reliable device which loudly indicates loss of pressure in a tyre before it has become quite deflated. Still, if a sealomatic tube, such as is shown by Messrs. Liversidge, or one of the "Challenge" reinforced inner tubes be used, such an apparatus is not likely to be needed, as with the former, if a puncture occurs, a viscous substance on the inside of the tube fills up the puncture, while with the latter the tube is so protected that it is not likely to burst.

The Continental Tyre and Rubber Co., Limited, the Avon India Rubber Co., Limited, Gaulois Tyres, Limited, the Shrewsbury and Challiner Tyre Co., Limited, the B. F. Goodrich Co., Limited, Messrs. David Moseley and Sons, Limited, the Samson Leather Treads and Tyre Company, Messrs. Dunlop, Messrs. Michelin, and Messrs. Liversidge are all represented, and any of their goods should give satisfaction, provided the tyres chosen are of sufficient size in relation to the weight of the car, and are kept properly inflated and have all cuts filled in directly they occur. In this connexion the Harvey-Frost vulcanizer merits attention, as it is both a prevention and a cure for punctures, and by its means damaged covers and tubes can be quickly and thoroughly treated and rendered fit again for their respective duties. There is no doubt that the increased price of rubber and the corresponding higher cost of tyres are unfortunate for the motorist, but the reverse for the tyre repairing specialists. With tyres at their present price tyre economy is essential, and the appliances of Messrs. Harvey, Flost, and Co., Limited (Stand 207), are a help in obtaining the longest life out of a tyre. This firm have unqualified confidence in their apparatus, for they offer to loan one to any motorist for 10 days free of charge, and they also have special terms for the profession, which can be had on application at 27, Charing Cross-road. The Allen-Liversidge brake, which was fully described in THE LANCET of Nov. 14th, 1908, p. 1463, is shown. It is undoubtedly to a certain extent a preventive of side slip; and, what is also important, it obviates wear on the transmission gear and

On Stand 295 in the gallery the Midland Rubber Co., Limited, show the Ajax non-skid tyre, which is a combination of rubber studs and rubber ribs, with a row of metal studs running down the centre. It is certainly an insurance against skidding. They also exhibit a detachable rim, which can be exchanged quickly, the only tools needed for manipulation being the fingers.

The Kempshall Tyre Co., Limited, have on Stand 294 their ribbed non-skid tyre and their light anti-skid tyre. The latter has a round tread with rubber studs on the sides. Both are successful in obviating skids, and they have one advantage over the more certain metal-studded non-skids—they wear better and last longer. The Kempshall emergency patch is a useful accessory. It is sprung into a damaged cover, the tube is inflated, and then, to use their own descriptive phrase, it "always grips, never slips."

(To be continued.)

MEDICINE AND THE LAW.

The Relations, Past and Future, of the Medical and Legal Professions.

Sir John Tweedy, in his opening address delivered at the first meeting of the current session of the Medico-Legal Society, of which he is President, gives a very interesting sketch of the early history and development of medicine and law, as well as of medical and legal education (see p. 1435). It will be seen that he traces the course of these two learned professions, following paths not always parallel nor always of equal smoothness, from the classic periods of Athenian and Roman learning through the Middle Ages to the present day, which finds the Medico-Legal Society well established and doing useful work in the ventilation and discussion of questions interesting to both professions and of importance to the public. The Medico-Legal Society is to be congratulated upon the position which it has already attained, and if it ever succeeds in accelerating the change in judicial procedure suggested by Sir John Tweedy at the close of his address it will have good reason to be proud.

We refer to the possible employment of medical assessors to assist judges, and on fitting occasions to displace juries in cases in which medical evidence is laid before courts of law. The weighing of conflicting medical opinions is conducted under conditions neither satisfactory to the medical profession nor advantageous to the community. The jury is not to be lightly dispensed with, particularly in cases where the personal safety or the liberty of the subject is involved, but at the same time the jury never has been, and never will be, asked to decide all the matters at issue in a trial whether civil or criminal. Our meaning is that questions of law are argued before and decided by the presiding judge, and we submit that this is done not because law is a mystery revealed to a select few or a science beyond the grasp of ordinarily intelligent minds, but simply because such minds need to be trained in the science and practice of law before the points which arise in argument with regard to it can be properly weighed and distinguished. In like manner those trained in medical science may often put forward divergent opinions when called into the witness box, and the subject may be such that an eminent man of science after listening to both sides would find it difficult to arrive at a correct conclusion. He might be wrong in his view, just as a judge is found to have been whose decision is reversed on appeal. Nevertheless, scientific issues are left to be decided by a jury, under the direction of a judge, as "questions of fact," or they are adjudicated upon by a judge, a process which might be compared to that of leaving questions of law to be argued before a jury under the presidency of an eminent physician or surgeon, or at times before him alone. We have spoken above of the accelerating of a change, as if we believed that it were likely to be accomplished in process of time without the assistance of the Medico-Legal Society, and we would justify the expression by pointing to the appointment of medical referees and to their duties under the legislation which in recent years has caused the raising of so many questions relating to the extent and duration of physical incapacity in connexion with the compensation of workmen. A new principle seems here to have been introduced in the trial of scientific questions in cases which are of frequent occurrence, but which, considered in relation to the issue at stake, may be of minor significance. The correct appraisement of the incapacity of a workman earning 25s. a week is important, but so are the reality and extent of the injuries sustained in a railway accident by a wealthier man who claims thousands of pounds. And still more urgent are the calls for justice in the case of the alleged insanity of a testator who has sought to dispose of millions by will, or in that of a man whose life hangs upon the question whether or not he wilfully murdered his fellow man. Surely there is greater need in these last instances of some form of medical assessors.

The English and Scottish Courts and the Plea of Insanity.

The highly interesting and, indeed, exhaustive article of Professor John Glaister which we publish this week sets out the practice of the courts of Scotland with regard to the raising of the plea of insanity at the trial of charges of nurder or of other crimes, and compares it with the pro-cedure prevailing in England. In particular he calls atten-tion to recent cases in Scotland, where the events described might be possible as a matter of law in England, though they would be contrary to established practice. The raising of the question of the sanity of the prisoner as affecting his capacity to plead is usually reserved in England for those cases where the state of the prisoner's mind is believed to be such that there is a doubt whether his trial might not be regarded as an act of cruel injustice. Professor Glaister's Case 3 (p. 1430), fully set out by the writer, should be of considerable interest to barristers practising in English criminal courts, and not already acquainted with it; as should Case 4, not only with regard to the relative attitudes of prosecution and defence towards the question of insanity, but also in respect of the period in the proceedings at which the decision of the court with relation to the prisoner's capacity to plead was allowed to be still under discussion. English lawvers will probably be of opinion that there is a difference between the courts of Scotland and of England in the judicial attitude towards the defence of insanity. The course pursued by Lord Young in Case 1 was no doubt astonishing to

those engaged in it, but the general effect produced is that of a fuller appreciation on the part of Scotch judges of the possibility of a man who commits a crime with ingenuity, with cool calculation, and with premeditation being in such a mental condition as not to be legally responsible for it. This is a possibility, and in Scotland a position is more readily adopted consistent with this view by prosecuting counsel. In England a person whose insanity is not of a marked and apparent character is usually tried, the possible verdicts being guilty, not guilty, or guilty but insane at the time of the commission of the offence; sanity is presumed until the contrary is proved by those responsible for his defence, and criminal trials will be recalled which have been tried out even when the power of the prisoner to follow the proceedings with any effect and to instruct his counsel rationally must have seemed very doubtful to all concerned. The complete trial of Richard Arthur Prince for the murder of Terriss, the famous actor, may be cited as an instance where a verdict of insanity was a foregone conclusion. It may be added that the raising of the issue of fitness to plead in the well-known case (No. 3) cited by Professor Glaister, where the actual committing by the accused of the acts alleged was open to serious question, and in spite of resistance upon the part of defending counsel, is difficult to understand or to justify, and only less strange than the allowing this issue to be decided after trying out the case without a conclusion being arrived at as to whether he killed the deceased or not. From a medical point of view the jury may be said to have had left to it the scientific question which it was least competent to answer, and to have been allowed to return no verdict as to the one matter on which it was best qualified to deliver one, although it had before it all the evidence obtainable on the subject.

Sale of Medicines.

The case of the Pharmaceutical Society v. Mercer, before Mr. Justice Darling and Mr. Justice Bucknill on Oct 28th, was an appeal by the defendant from a decision of the county court judge at St. Helens. The plaintiffs sued the defendant to recover a penalty under Section 12 of the Pharmacy Act, 1852, which makes it unlawful for a person who is not registered to use the title of pharmaceutical chemist or pharmaceutist or to assume, use, or exhibit any name, title, or sign implying that he is registered under the Act or that he is a member of the Pharmaceutical Society. The defendant, who was not registered under the Act, sold medicines at a shop on which, and on the medicines sold by him, was the defendant's name, followed by the words "The Pharmacy." The county court The county court judge found that the defendant had contravened Section 12 by the use of the words "The Pharmacy" in the circumstances stated, and he accordingly imposed a penalty. defendant appealed. The court allowed the appeal, being of opinion that the words "The Pharmacy" were descriptive of the place where the defendant carried on business, and were not descriptive of the defendant himself, and that they did not imply that the defendant was registered under the Act or was a member of the Pharmaceutical Society.

" Dr." Bodie.

After a prolonged trial "Dr." Bodie has been adjudged by a jury to have been guilty of fraudulent misrepresentation, and has been ordered to repay the sum of £1000 which he obtained from a young man who desired to be initiated into the mystery of his outrageous performances. We congratulate the plaintiff, Mr. Irving, on his success and on its resulting in an exposure of Bodie and Bodie's methods.

ROYAL SOCIETY OF ARTS.—The meetings of the Royal Society of Arts will recommence on Wednesday, Nov. 17th. at 8 P.M., when Sir William White, Vice-President and Chairman of the Council, will deliver an address entitled "An Imperial Navy." The subject of the subsequent Wednesday evening discourses before Christmas will be: "Photo-telegraphy." "Resilient Wheels for Vehicles," "Destruction of Plumage Birds," and "Diamond Fields of Brazil." Four Cantor lectures on "Aeronautics" will be delivered at 8 P.M. on Nov. 29th and Dec. 6th, 13th, and 20th. A meeting of the Colonial Section will be held on Nov. 30th, and of the Indian Section on Dec. 9th.

Public Bealth.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On an Outbreak of Enterio Fever in the Urban District of North Ormesby, by Dr. R. W. JOHNSTONE. 1-This report deals with the incidence and causation of enteric fever in North Ormesby in 1908. This district, with a population of about 15,000, is practically a continuation of the town of Middlesbrough. For many years past there has been an undue prevalence of enteric fever in North Ormesby, and last year 63 cases were notified. Of these, 17 were under the age of 10 years; 31 were males and 32 were females. The disease was prevalent through August, September, October, and the early part of November, after which there was a rapid drop in the occurrence of cases. The invaded houses. 49 in number, were, with three exceptions, situated in the north-eastern half of the town, and the majority were found in a particular group of streets. The sewers of this half of North Ormesby form a system distinct from that of the south-western half. In the district generally the sewers have insufficient gradients and are badly laid, while house-drains are often faulty and become choked. The opportunities of sewer air escaping in or about dwellings were increased by the circumstance that in 1908 the sewers were unventilated. A suggestion was made that sewer gas which developed in certain tanks at the outfall works had been able to pass back through the sewers to the north-eastern part of the town, but had been shut off from the rest of the district by a trap accidentally formed by the faulty construction of the main sewer which serves the southwestern portion. The tanks in question, however, were not air tight, and Dr. Johnstone considers that the back pressure which would be necessary could hardly have taken place. The district is served by midden privies and pail closets in about equal numbers Most of the invaded houses had midden privies. The grouping of the invaded houses could to some extent be accounted for on the probable assumption that middens in the area specially affected became infected early in the outbreak, and that infection was caused by these middens through the agency of flies or in other ways. Stable manure is well known to be a favouritebreeding place for flies, and Dr. Johnstone notes that there was a stable in the centre of the region specially affected. Flies were reported to be exceptionally abundant in North Ormesby during the autumn of last year. Dr. Johnstone also reviews, mainly with negative conclusions, the influence of water and milk-supplies, and also of certain foods, shell-fish, fried fish, ice-cream, and uncooked vegetables. In regard to the latter foods he adopted the useful plan of comparing the results of the inquiries which had been made as to the diet of the persons attacked with the facts obtained in course of a census taken in two or three typical streets. For this census inquiries were made at 174 houses and of 827 persons, so as to obtain a rough idea of the normal frequency with which the several articles in question are consumed by the population. No very marked discrepancy appeared between the information obtained as to the persons attacked and that which was provided by the census, except in the case of shell-fish. Only 60 out of the 827 persons said that they had +aten shell fish of one sort or another during the summer of 1908, whereas out of 62 cases of enteric fever in which inquiry was made 16 were reported to have eaten shell-fish within a period of from 5 to 21 days before the onset of the enteric tever Mussels and periwinkles which are hawked in North Ormesby are usually obtained from the Tees below Middlesbrough, where the river is badly contaminated by sewage.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

City of Glasgow.—There is very material disparity between the population of Glasgow as estimated (859,715) by the Registrar-General on the one hand and by the medical officer of health (801,250) on the other, and Dr. A. K. Chalmers makes use of the circumstance to emphasise the necessity for a quinquennial census, since under existing conditions the Registrar-General credits Glasgow with an

¹ Public Health Reports, New Series, No. 17. London: Wyman and Sons, Fetter-lane; Edinburgh: Oliver and Boyd; Dublin: E. Ponsonby. Price 4d.

increase and the medical officer of health with a decrease of population, and, as a result, all the rates for the year under notice must be accepted as provisional only. The infantile death-rate of this city for 1908 was 136 per 1000 births, a rate which was materially exceeded by Dundee, Manchester, and Birmingham. During the years 1907-08 an inquiry into the physical condition of Glasgow children was conducted by Dr. A. S. M. MacGregor among the patients admitted into the Belvidere Fever Hospital, the object of the investigation being to obtain a record of the height and weight of children under school age, and to ascertain the child's capacity for immediate improvement under better conditions than those to which it had been accustomed. The inquiry further aimed at obtaining information as to the physique of the rachitic child and its relation to housing conditions and as to the physique of infants in relation to their susceptibility to infectious disease. Some of the results of this inquiry have already appeared in our columns, but we may briefly deal here with the rachitic conditions found. Of 1357 children between the ages of 2 and 10 years rickets were discovered in 31 per cent. of the males and 26.7 per cent. of the females, while of 329 children aged from 6 months to 2 years the incidence upon the combined sexes was 42.5 per cent. In the matter of the possible influences of parentage in production of rickets, an instructive table is furnished in Dr. Chalmers's report, showing that in cases where the parents and child were Glasgow born the incidence (44.4 per cent.) of rickets was greater than in cases where the Glasgow native was less and less concerned. For example, where the parents and children were born out of Glasgow the percentage incidence of rickets was only 25.4 per cent. Of the cases of enteric fever occurring in Glasgow during 1908 87.7 per cent. were treated in hospital and the fatality-rate was 12.1 per cent. The death-rate from this disease in Glasgow has steadily decreased since 1881-90, when it was 0.230 per 1000. There was a "return" case of enteric fever during 1908 in connexion with a patient who had been recently discharged from hospital and in whose urine the pathogenic bacteria were discovered, and as recently as July, 1909, the organisms were still recoverable from the urine. Of typhus fevers there were 13 cases with 1 death. There is a capital chart in the report showing the monthly variations of scarlet fever in each year from 1898 to 1908. In 1898 the disease was ascending and reached its maximum in 1899, there being after that a gradual descent until 1905, when a rise again commenced. The death-rate from pulmonary tuberculosis has undergone steady diminution since the quinquennium 1860-64, when it amounted to 4094 per 1,000,000, the rate having reached in 1908 the low figure of 1417 per 1,000,000. Upon the subject of pulmonary tuberculosis Dr. Chalmers contributes a special memorandum in which he deals with such interesting subjects as the segregation of early or advanced cases, and he comes to the conclusion that perhaps the greatest good would accrue from a training for one month in a sanatorium of relatively early cases of the malady, the object of such training being to teach the patients how to regulate their lives with best prospects to their own health and least risks to those with whom they are brought into contact. Dr. Chalmers points out that if the patient learns to control both his sputum and the droplets coughed up "he will accomplish so far as direct prevention of infection is concerned all that isolation in hospital may accomplish. He may, in effect, and by his own action, isolate himself in a way quite unknown in connexion with the other infectious Dr. Chalmers has advised, and the corporation has accepted, a system of compulsory notification of cases of pulmonary tuberculosis and it has also accepted his further recommendations to provide five additional tuberculosis dispensaries in addition to the one which already exists.² There is to be a nurse in connexion with each of these institutions and their visits to the homes of the patients are to be supervised by a medical officer specially appointed for the purpose. In this way Dr. Chalmers hopes to improve the circumstances under which the patients and the people in the invaded houses live and thus to raise the condition of the contacts above what has been termed the pre-tuberculous stage. He lays great stress upon the importance of resistance as a factor in the prevention of phthisis, and as regards the part which may be played in causation of tuberculosis by the human or bovine sources he observes: "Whatever subsequent inquiry

may establish regarding the part played by either in distributing infection or regarding the precise channels by which it reaches the child, there does not seem much ground for anticipating that it will substantially alter the view which is so widely held at present, that receptivity or susceptibility to infection is probably, even more than the presence of the bacillus, the dominating factor in determining the development of the disease." He estimates the cost of a sanatorium with 100 beds, which would train 1200 patients annually in sputum control and the like, at £8000, apart from interest on the capital sum expended and the repayment of such capital; and he observes that in view of the many insanitary portions of Glasgow which still require to be dealt with it may be suggested that the expenditure of £8000 annually in removing foci of disease could not fail eventually to be productive of permanent advantages, not only with regard to consumption, but to disease generally.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 8350 births and 4180 deaths were registered during the week ending Nov. 6th. The annual rate of mortality in these towns, which had been equal to 12.0 per 1000 in each of the two preceding weeks, rose to 13.3 in the week under notice, and was higher than in any week since the middle of May. During the first five weeks of the current quarter the annual death-rate in these towns averaged 12.5 per 1000, and in London during the same period the rate did not exceed 12.2 per 1000. The lowest annual rates of mortality recorded in the 76 towns last week were 5.2 in Leyton, 5.8 in Barrow-in-Furness, 6.8 in Willesden, and 7.3 in Kast Ham; the rates in the other towns ranged upwards, however, to 18.6 in Grimsby, 19.4 in Bury, 20.8 in Middlesbrough, and 22 · 7 in Hanley. In London the recorded death-rate last week increased to 13.4 per 1000. The 4180 deaths registered in the 76 towns last week exceeded by 394 the low number in the previous week, and included 283 which were referred to the principal epidemic diseases, against numbers declining steadily in the ten preceding weeks from 849 to 293; of these 283 deaths, 111 resulted from diarrhœa, 43 from measles, 42 from diphtheria, 36 from scarlet fever, 31 from whooping-cough, 19 from "fever" (principally enteric), and one from small-pox. The 283 deaths from these epidemic diseases last week were equal to an annual rate of 0.9 per 1000, corresponding with the low rate from these diseases in the previous week. No death from any of these epidemic diseases was registered last week in Croydon, East Ham, Walthamstow, Leyton, or in 11 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 2·3 in Hull, 2·6 in Walsall, 2·9 in Wallasey, and 9·1 in Hanley. The deaths attributed to diarrhoea in 9.1 in Hanley. The deaths attributed to diarrncea in the 76 towns, which had declined in the 10 preceding weeks from 675 to 110, were 111 last week; the highest death-rates from this cause in the 76 towns last week were 1.3 in Preston, 1.5 in Wallasey, 2.1 in Walsall, and 3.0 in Hanley. The fatal cases of measles showed a further increase to 43 last week, and exceeded the number in any week since the middle of August; they caused annual rates equal to 1.4 in Ipswich, 1.6 in Hornsey, and 4.5 in Hanley. The deaths from diphtheria, which had been 46 and 57 in the two previous weeks, declined to 42 last week, and included 15 in London and its suburban districts, 4 in Manchester and Salford, 4 in Hull, 3 in Portsmouth, 3 in Birmingham and King's Norton, and 2 each in Sunderland and South Shields. The 36 fatal cases of scarlet fever showed an increase of 6 upon the number in the previous week; 6 occurred in Manchester, 4 in Birmingham, and 3 in Liverpool. The 31 deaths from whooping-cough were fewer by 11 than the number in the previous week, but included 16 in London and its suburban districts. The 19 deaths referred to "fever" showed a slight increase, and included 2 each in Portsmouth, Hanley, and Bolton. The fatal case of small-pox was registered in Swansea. The number of scarlet fever patients under treatment in the Metropolitan Asylums and London Fever Hospitals, which had been 2810, 2799, and 2743 on the three preceding Saturdays, had further declined to 2696 on Saturday last; 336 new cases of this disease were admitted to these hospitals during last week, against 371,

THE LANCET, August 14th, 1909, p. 500.
 See also THE LANCET, Nov. 6th, 1909, p. 1364.

345, and 284 in the three preceding weeks. The Metropolitan Asylums Hospitals contained 3 small-pox patients on Saturday last. Of the 1246 deaths registered in London last week, 230 were referred to pneumonia and other diseases of the respiratory system, against 167, 174, and 193 in the three preceding weeks; these 230 deaths were, however, 43 below the corrected average number in the corresponding week of the five years 1904-08. The causes of 26, or 0.6 per cent., of the deaths registered last week in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death registered last week were duly certified in London, Manchester, Sheffield, Bristol, West Ham, Bradford, Newcastle-on-Tyne, and in 55 smaller towns; the 26 uncertified causes of death in the 76 towns last week included 9 in Liverpool, and 2 each in Leeds, South Shields, Gateshead, and Burton-on-Trent.

HRALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 790 births and 547 deaths were registered during the week ending Nov. 6th. The annual rate of mortality in these towns, which had been equal to 13.1 and 12.9 per 1000 in the two preceding weeks, rose to 15.3 in the week under notice. During the first five weeks of the current quarter the annual death-rate in these Scotch towns averaged 13.2 per 1000, and exceeded by 0.7 the mean rate during the same period in the 76 large English towns. The annual death-rates last week in these Scotch towns ranged from 8.5 and 11.6 in Perth and Leith, to 15.9 in Greenock and 18.2 in Glasgow. The 547 deaths from all causes in the eight towns last week showed an increase of 85 upon the number in the previous week, and included 67 which were referred to the principal epidemic diseases, against 54 and 34 in the two preceding weeks. These 67 deaths were equal to an annual rate of 1.9 per 1000; the mean rate from the same diseases last week in the 76 largest English towns did not exceed 0.9 per 1000. The 67 deaths from these diseases in the Scotch towns last week included 24 from measles, 13 from diphtheria, 13 from diarrhosa, 11 from whooping-cough, 4 from scarlet fever, and 2 from "fever," but not one from small-pox. The 24 fatal cases of measles showed a marked increase upon recent weekly numbers, and included 18 in Glasgow and 5 in Edinburgh. The 13 deaths from diphtheria also showed a considerable increase; 9 were returned in Glasgow and 2 in Leith. The 13 deaths attributed to diarrhosa exceeded the number in the previous week by 3, and included 7 in Glasgow, 4 in Dundee, and 2 in Paisley. The 11 fatal cases of whooping-cough also showed an increase; 6 occurred in Glasgow, and 3 in Greenock. Three of the 4 deaths from scarlet fever were recorded in Glasgow; and of the 2 referred to "fever" one each occurred in Glasgow and Edinburgh. The deaths referred to diseases of the respiratory system in the eight towns, which had been 84 and 68 in the two preceding weeks, rose last week to 108, but were 8 below the number in the corresponding week of last year. The causes of 12, or 2 · 2 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0.6 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,142,308 persons, 608 births and 381 deaths were registered during the week ending Nov. 6th. The mean annual rate of mortality in these towns, which had been equal to 14.8 and 16.4 per 1000 in the two preceding weeks, further rose to 17.4 in the week under notice. During the first five weeks of the current quarter the annual death-rate in these Irish towns averaged 15.8 per 1000, whereas the mean death-rate during the same period did not exceed 12.5 in the 76 largest English towns, and 13.2 in the eight principal Scotch towns. The annual death-rate last week was equal to 18.6 in Dublin, 15.6 in Belfast, 22.6 in Cork, 15.7 in Londonderry, and 13.7 in Limerick; the mean rate in the 16 smallest Irish town districts last week was equal to 19.5 per 1000. The 381 deaths from all causes in the 22 town districts last week showed a further increase of 22 upon the numbers in the two previous weeks, and included 21 which were referred to the principal epidemic diseases, against 22 and Price, from the 1st Forfarshire Royal Garrison Artillery

26 in the two preceding weeks; these 21 deaths were equal to an annual rate of $1\cdot 0$ per 1000; in the 76 largest English towns the rate last week from the same diseases did not exceed 0.9 per 1000. The 21 deaths from these epidemic diseases in the Irish towns last week included 12 from diarrhea, 5 from whooping-cough, and 4 from enteric fever, but not one from measles, scarlet fever, diphtheria, or small-pox. The 12 deaths attributed to diarrhœa corresponded with the number in each of the two preceding weeks, and included 4 in Belfast, 3 in Sligo, and 2 both in Dublin and in Cork. Four of the 5 fatal cases of whooping-cough occurred in Belfast; and of the 4 deaths referred to enteric fever, 2 were returned in Cork and 1 both in Dublin and in Drogheda. The deaths resulting in the 22 towns from pneumonia and other diseases of the respiratory system, which had been 50 and 60 in the two preceding weeks, further rose to 86 in the week under notice. The causes of 13, or 3.4 per cent., of the deaths in these Irish towns last week were not certified by a registered medical practitioner or by a coroner; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0.6 per cent, and in the eight Scotch towns the proportion was 2.2 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified: -Surgeons: A. R. Schofield to Hong-Kong Hospital; J. E. Johnston to the Ringdove; C. A. G. Phipps to the Pembroke for R. N. Barracks: T. W. Myles to the Hyacinth; W. F. Archibald to Chatham Hospital; and A. McCloy to the Pembroke for R.N. Barracks.

ROYAL ARMY MEDICAL CORPS SCHOOL OF INSTRUCTION.

Lieutenant-Colonel George D. Hunter, D.S.O., R.A.M.C., to be Commandant, vice Lieutenant-Colonel C. E. Nichol, D.S.O. (dated Nov. 1st, 1909).

ROYAL ARMY MEDICAL CORPS.

The undermentioned Captains to be Majors (dated Oct. 28th, 1909) :- Brian Watts, Henry G. Martin, Frederick F. Carroll, John D. G. Macpherson, William P. Gwynn, Standish de C. O'Grady, Augustus H. O. Young, Ernest A. Bourke, Montagu M. Lowsley, Gerald B. Carter, and Norman H. Ross.
Captain Arthur C. H. Gray, from the Seconded List, is

restored to the establishment (dated Oct. 25th, 1909).
Surgeon-General W. W. Kenny, at present serving as
Principal Medical Officer in South Africa, has been appointed Principal Medical Officer of the Northern Command. Colonel O. E. P. Lloyd, V.C., Principal Medical Officer, 7th (Meerut) Division, India, has been appointed Principal Medical Officer, South Africa. Lieutenant-Colonel F. J. Jencken has been appointed to charge of the Royal Victoria Hospital, Netley, and Lieutenant-Colonel A. Kennedy to the charge of D Block of the same institution. Lieutenant-Colonel R. J. C. Cottell has been appointed Physician and Surgeon to the Royal Hospital, Chelsea, and Major F. Kiddle Deputy-Surgeon.

Major T. W. Gibbard has been appointed Lecturer in
Syphilology at the Royal Army Medical College, Millbank, S.W., and to charge of the Military Hospital, Rochester-row.

INDIAN MEDICAL SERVICE.

The King has approved of the following promotions:—Captains to be Majors (dated July 28th, 1909): John Walter Forbes Rait, Eugene John O'Meara, Spencer Hunt, and Henry Albert John Gidney. Lieutenants to be Captains (dated Sept. 1st, 1909): John Taylor, Alexander Dron Stewart, Claude Harold Cross, Robert Alexander Chambers, John Morison, Samuel George Steele Haughton, Francis William Cragg, Andrew Smith Leslie, Herbert Bodley Scott, and George McGregor Millar.

Captain G. W. Maconachie has been appointed to the substantive medical charge of the 73rd Carnatic Infantry vice Captain W. C. Hamilton. The services of Captain Dulton have been temporarily placed at the disposal of the Bengal Government. Captain Powell, Officiating Super-intendent of Midapore Jails, is granted six months' leave. Major Smith is appointed a Civil Surgeon at Quetta.

TERRITORIAL FORCE.

(Volunteers), to be Surgeon-Lieutenant, with precedence as in the Volunteer Force (dated April 1st, 1908).

Royal Army Medical Corps.

F South Wales Mounted Brigade Field Ambulance: Captain John Griffiths, from the List of Officers attached to units other than Medical Units, to be Captain (dated August 10th, 1909).

3rd Highland Field Ambulance: Lieutenant Sidney W. Smith resigns his commission (dated June 15th, 1909). Henry James Gorrie to be Lieutenant (dated Sept. 10th, 1909)

2nd West Lancashire Field Ambulance: George Charles Edward Simpson to be Lieutenant (dated Oct. 4th, 1909).

2nd Lowland Field Ambulance: Lieutenant James A. H. Aitken to be Captain (dated Oct. 28th, 1909).

- 2nd North Midland Field Ambulance: Captain Montague S. W. Gunning resigns his commission (dated Sept. 1st, 1909).

2nd Welsh Field Ambulance: Owen Lewellin Rhys to be

Lieutenant (dated Sept. 25th, 1909).

1st Scottish General Hospital: Captain William A. I.
Fortescue resigns his commission (dated Oct. 9th, 1909).

Attached to Units other than Medical Units. - Lieutenant Harry Armitage Robinson to be Captain (dated Sept. 28th, 1909).

The transfer of Surgeon-Lieutenant Lloyd Turton Price from the 1st Forfarshire Royal Garrison Artillery (Volunteers), which was announced in the London Gazette of Nov. 6th, 1908, is cancelled.

Correspondence.

"Audi alteram partem."

THE LATE DR. JOHN HERBERT WELLS. To the Editor of THE LANCET.

SIR,—The death of Dr. John Herbert Wells last month at the early age of 30 years adds another name to the list of those who have lost their lives in the cause of scientific medical research.

After distinguishing himself in original research, Dr. Wells joined the department of therapeutic inoculation at St. Mary's Hospital, where this branch of treatment was advanced materially by his labours. In February, 1908, Dr. Wells undertook pioneer investigation of the treatment of glanders, and in the course of laboratory work which resulted in saving the life of the patient from this, till then, hopeless disease, contracted infection himself, and died after 18 months of suffering on Oct. 16th, 1909, leaving a widow and two small children almost totally unprovided for.

Throughout his long illness Dr. Wells's constant hope was to return to the work in the cause of which he had suffered so severely. He was held in high esteem by the members of his profession, and his thoroughness and personality won him many friends, as the obituary notice in THE LANGET of Oct. 23rd abundantly testified. His life was rich with promise and was laid down with manly fortitude as the penalty of his scientific zeal.

A committee has been formed, consisting of the Right Hon. A. J. Balfour, M.P., the Earl of Dalhousie, Lord Justice Fletcher Moulton, Sir Almroth Wright, M.D., F.R.S., Mr. H. A. Harben (late chairman of St. Mary's Hospital), Mr. Julian G. Lousada, Mr. Edmund Arthur Smith (of the Stock Exchange), and Dr. W. H. Willcox; and they now appeal to the public for donations to a fund to be held in trust for Dr. Wells's widow and children.

The committee (on whose behalf we write) feel strongly that in such a case as this, where a man has laid down his life in trying to relieve the sufferings of mankind, it is eminently fitting that some recognition should be made of his work, and they have full confidence that the public will make a ready response to their appeal.

All contributions sent to the Honorary Secretaries and Treasurers of the fund at 16. Old Broad-street, London, E.C., will be gratefully acknowledged.

Yours faithfully, DALHOUSIE. DALHOUSIE,

Julian G. Lousada.

Joint Honorary Secretaries and Treasurers. 16, Old Broad-street, London, E.C., Nov. 11th, 1909.

List of present subscriptions already promised or received :-

	\mathfrak{L} s. d.	1	£	8.	d.
	Sir Edward Tennant 100 0 0	THE LANCET Relief			
į	Lady Tennant 100 0 0	Fund	25	0	0
ı	Anonymous 100 0 0	Major Alexander H. Davis	21	0	Ō
	Right Hon. A. J. Balfour,	Mr. Morton Smale		Ó	Ō
ı	M.P 25 0 0	Mr. H. A. Harben	20	0	0
Į	The Earl of Dalhousie 25 0 0	Mr. Herbert G. Lousada	10	10	Ó
ı	Lord Justice Fletcher	Mr. P. C. Fawcett	10	10	Ō
	Moulton 25 0 0	Mr. Lewis H. Samuel	5	5	Õ
Ì	Hon. Rupert Guinness 25 0 0	Mr. Philip S. Walev	5	5	0
ı	Mr. Max J. Bonn 25 0 0	Mr. Edmund A. Smith	5	5 3	Ó
ı	Mr. E. J. Stephens 25 0 0	Miss Margaret Knowles	3	3	Ō
ı	Dr. W. H. Willcox 25 0 0	Miss Natalie Beard	3	3	Ō
١	Mr. and Mrs. Julian G.	1	-	-	
ı	Lousada 25 0 0	1			

* * We are able to announce that the colleagues of the late Dr. J. H. Wells on the staff of the department of therapeutic inoculation at St. Mary's Hospital are making an independent subscription which will be added to the fund later. We shall be happy to receive and acknowledge subscriptions to this fund. -ED. L.

THE STATUS LYMPHATICUS.

To the Editor of THE LANCET.

SIR,—The prominence which has been given in the press during the last three years to the subject of deaths under chloroform has produced in the public mind a feeling of considerable uneasiness, and it is surprising to remember in this connexion how small is the progress we are making towards understanding the lymphatic state. At the risk of an accusation of prematurity, but in the hope of stimulating discussion, or at least some publication of experiences, I venture to submit a few words on the subject, suggesting the line of thought which has been forced upon me by a study of the literature available and by a retrospective examination of my clinical records.

Definition.—Status lymphaticus is a name given to a combination of conditions found post mortem in the bodies of certain young persons who have died suddenly and "unaccountably," or from "inadequate" causes, of which the inhalation of chloroform vapour is here assumed to be the most important. Evidence has frequently been given that such patients presented during life no disease or peculiarity beyond the presence of "adenoids," for the cure of which they may have been undergoing operation at the moment of death.

The Vienna School recognised the importance of this condition as a factor in causing danger in anæsthesia many years before the rest of Europe, or America, began to pay attention to it (J. Ewing). The researches tend to show that status lymphaticus cannot be entirely rejected as a pathological entity, although it, as a picture or idea, is open to the criticisms which have demolished the old pathological "diatheses."

Post-mortem findings.—There have usually been some or all of the following in order of frequency: (1) enlargement of a few, or many, groups of lymphatic glands and of the lymph follicles of the intestinal mucosa; (2) enlargement of the spleen; (3) persistence of the thymus gland in a functional condition; (4) hyperplasia of the red bone marrow; (5) enlargement of the thyroid body; (6) in infants, signs of rickets; (7) in adolescents, hypoplasia of the heart and narrowing of the aorta.

Clinical realities. - Paltauf's theory, supported by Warthin, that the condition is a "lymphotoxemia," with com-pensatory enlargement of the thymus, receives support from a comparison of the three types of patient (now to be described), who may, and not infrequently do, exhibit untoward symptoms when under the influence of chloroform. It is noteworthy that the condition in all three types occurs in young or early mature persons.

1. Young persons, chiefly female, suffering from chronic anæmia and constipation—both points which may be easily overlooked or under-estimated by the anæsthetist in his preliminary examination. When the tissues of a patient are already saturated with one poison, the addition of a When the tissues of a patient very small dose of another may be fatal (and this applies not only to this type of case, but also to the two other types which follow). The danger of giving morphine to a nephritic patient is an example. In cases of pronounced copric anæmia the tissues are in a low state of vitality and are liable to outright destruction by a very small dose of chloroform. The heart's action is always weak, and often slow and irregular, so that pulse and respiration seem to fail simultaneously when danger appears under chloroform; the fact that artificial respiration applied without delay is usually successful in restoring the patient proves that in these cases the respiratory centre is more deeply poisoned than the heart muscle. Pure chloroform should never, when possibly avoidable, be given to such patients, and the greatest vigilance and care are necessary when administering mixtures.

2. Young persons, more often males, often largely and loosely built, who show on examination: (a) some enlargement of the thyroid and fulness of the episternal notch; (b) a palpable or percussible enlargement of the spleen: (c) an abnormally slow and inexcitable pulse, and this in spite of the fact that the patient may be in a miserably anxious and apprehensive state on account of the imminence of and apprenensive state on account or the imminence of the operation. With this there may be, but not constantly, dilatation of the heart. The face is anæmic and rather vacuous, and the pallor may be masked by some degree of cyanosis. These are the cases, in my opinion, to which the name "Status Lymphaticus" should be restricted. The behaviour of these patients under anæsthetics other than chlamfurm is interesting and angular gestive collateral. For instance, nitrous oxide is the most frequently used of all anæsthetics in this country, and the users of this gas can, with little trouble, supply a mass of clinical material of the greatest value. In my experience (15 cases under all anæsthetics) the patient who is only slightly "lymphatic," presenting no signs beyond some lividity of the hands and slight sluggishness of the pulse, requires much more than the normal volume (8 to 12 gallons) of N₂O to "get him over," though, once unconscious, the anaesthesia is sometimes profound and lasting. Such a patient may require as much as 20 gallons of $N_2\tilde{O}$, especially in warm damp weather. Again, a patient who presents all the signs of lymphatism in a well marked degree may be totally insusceptible to the narcotising properties of N₂O. He may inhale 30 or 40 gallons without admixture of air for even three minutes and show no result whatever beyond slight dizziness and profuse perspiration. These patients, I believe, always show some abnormality of reaction to nitrous oxide, they may show danger signs under chloroformether mixtures, and under pure chloroform they almost certainly nill give trouble. Their reaction to ether does not seem to differ greatly, if at all, from the normal, though Heusler reports a death after ether and much loss of blood.

3. Young parturient numen.—No clinical observation has ever been so mistaken as that which stated that pregnancy conferred immunity from the poisonous effects of chloroform. There are here more factors than one tending to produce too easily an overdose of chloroform vapour (the favourite anæsthetic under these circumstances).

There is the diminished "vital capacity" due to encroachment upon the diaphragmatic portion of the thorax, there is the increased carrying capacity of the red blood corpuscles, there is the physical exhaustion produced by prolonged pain and muscular activity, and, hand in hand with this, there is toxemia from over-metabolism plus foetal metabolism. It is thus not surprising that artificial respiration is fairly commonly called for, and nothing else is necessary, because the heart is stronger than normal, and it is respiration which undoubtedly fails first.

It is only because the subject is one of general interest at the present time that I do not reserve the matter for the collection of further material.

I am, Sir, yours faithfully,
DONALD J. MUNRO, B.S., M.B. Lond.,
Anæsthetist to the Metropolitan Ear, &c., Hospital. Welbeck-street, W., Nov. 6th, 1909.

LUNG PUNCTURE.

To the Editor of THE LANCET.

SIR, -In the interesting annotation on this subject in your last issue it is stated that "the only conditions which suggest themselves as disadvantages are the possibility of infection of the healthy pleura or of the needle track in septic cases, and the occurrence of hæmorrhage from wounding a vessel or an aneurysm of the pulmonary artery." There is yet another danger to which attention has been called by Dr. George Oliver, Dr. A. E. Russell, and myself, and to which

references will be found in a paper by me in Vol. V. of the Reports of the Society for the Study of Disease in Children, 1905, p. 118. In these cases the patient, who is often in a cachectic condition, immediately after exploratory puncture of the pleura becomes cyanotic and dies. Brouardel has recorded a case in which this occurred when an attempt was made to aspirate a hydatid cyst of the lung. The needle in this case only entered the lung and did not touch the cyst. In a case recorded by Dr. George Carpenter death was due to suffocation by hæmorrhage, but in the others no hæmorrhage was proved to have occurred, and Dr. Russell has suggested that the phenomenon is a reflex inhibition of the cardiac and respiratory centres due to irritation of the afferent fibres of the vagus.

Though rare, this occurrence constitutes a real danger which ought not to be overlooked, especially as the class of case in which exploratory puncture of the lung would be likely to be done is exactly that class in which the percentage of fatal accidents might be expected to be highest.

I am, Sir, yours faithfully, J. M. Fortescue-Brickdale, M.A., M.D. Oxon. Clifton, Bristol, Nov. 9th, 1909.

To the Editor of THE LANCET.

SIR,-I was much interested in reading Dr. Horder's paper on "Lung Puncture, a New Application of Clinical Pathology" in your issue of Nov. 6th. As he stated he could find no reference to such an application of clinical pathology, may I draw his attention to some remarks by Dr. C. J. Macalister on "The Treatment of Chronic Pneumonia by Puncture" and Dr. Blair Bell's comments thereon at a meeting of the Liverpool Medical Institution, reported in the British Medical Journal, Nov. 3rd, 1900? In a subsequent issue I wrote to the effect that I had used that treatment in 1887 and 1889, as reported in a paper entitled "A New Method of Bleeding in Some Cases of Pulmonary Congestion, which was published in THE LANCET in 1891.

Cambridge.

I am, Sir. yours faithfully,
J. Christian Simpson, M.D. Edin.

APPENDICITIS WITH HÆMATURIA.

To the Editor of THE LANCET.

SIR,—Recently I operated on a little boy, aged 31 years, for acute appendicitis, with a large abscess. Two weeks after the operation he passed large quantities of blood from the bladder. On analysis there was nothing to be seen but blood and oxalate of lime crystals. The hæmorrhage continued off and on for five weeks. The urine now is perfectly normal and has been so for three weeks. Is this possibly a similar case to that recorded by Mr. P. H. V. Hammersley. and reported in your annotation of Nov. 6th?

I am, Sir, yours faithfully,

WM. BURROUGH COSENS. Dorchester, Nov. 6th, 1909.

THE INFLUENCE OF DIET ON THE THYROID GLAND.

To the Editor of THE LANCET.

SIR,—With your permission I should like to comment on a statement in Dr. Chalmers Watson's interesting letter in THE LANCET of last week. He says, "There are conditionse.g., gout-in which the administration of a diet which contains little protein is of special value this favourable result is in an important degree attained through the influence of that diet on the thyroid gland."

While admitting without question that the form of diet mentioned may produce favourable results, I must confesswith the greatest respect to Dr. Chalmers Watson's admirable researches on the subject-to some scepticism as to the result being due to the influence of the diet on the thyroid gland. If this were so, then a diet consisting entirely, or almost entirely, of protein would, if I understand Dr. Watson rightly, have a converse effect upon the gland and so aggravate the condition, but this is not so. For instance, Dr. Luff has frequently drawn attention to the value of an exclusive meat diet in certain cases of gout, and my own experience has been that the majority of cases may be benefited by this regimen.

Probably Dr. Chalmers Watson may be able to explain the paradox. The only explanation I have to offer as to why a diet approximating to a purin-free diet, and a converse form of diet such as the exclusive meat diet, are each capable of producing good results in gout, is that both, if carefully regulated to the digestive capacity of the individual, tend to eliminate—as may be proved by periodical examination of the urine and fæces—the chief causative factor, viz., autotoxæmia.

I am, Sir, yours faithfully,

Wimpole-street, W., Nov. 8th, 1909.

ERNEST YOUNG.

ENTERICIN IN THE TREATMENT OF ENTERIC FEVER.

To the Editor of THE LANCET.

SIR,—A large number of clinicians will be interested in your annotation of last week describing the results obtained by Mr. John Maberly of Cape Colony with a drug prepared from Monsonia biflora in the treatment of enteric fever, and it is to be hoped that this preparation will be given a fair trial in this country. At the same time I think a protest is needed against the name "entericin" which has been given to its active principle. The analogy between that name and such words as "tuberoulin" and "mallein" is so obvious that to many the word "entericin" will connote a vaccine made from the typhoid bacillus, and not a vegetable compound. Surely "monsonin" would be a name in strict accordance with pharmacological precedent, and would obviate the confusion likely to arise from the present title. Uniformity in scientific nomenclature is always desirable.

I am, Sir, yours faithfully,

Nov. 9th, 1909.

VERBUM SAP.

MALARIAL FEVERS IN INDIA.

THE CONFERENCE APPOINTED BY THE GOVERNMENT OF INDIA.

(FROM A SPECIAL CORRESPONDENT.)

The Opening Address by H. E. The Viceroy.

THE conference appointed by the Government of India on the prevalence and prevention of malarial fevers in India held its first meeting at Viceregal Lodge, Simla, on Oct. 12th. There were present, besides the members and delegates representing the various presidencies already communicated to you, Sir Louis Dane (Lieutenant-Governor of the Punjab), Sir Herbert Risley (officiating home member of the Viceroy's Council), and Sir Harold Stuart (Home Secretary). The meeting was opened by His Excellency Lord Minto, Viceroy and Governor-General of India, who, after welcoming the delegates, gave a most interesting address in which he impressed on the conference the vast importance of the matter they had been called together to discuss. He referred to the fact that malarial fevers ordinarily claim 1,000,000 deaths in India annually, and in exceptional seasons they have risen to 2,000,000. There were also the cases of those who contract the disease but do not die, and the ratio of these has been placed at 133 cases of fever to 1 death. It was appalling to think of the suffering and economic loss that such conditions imply, not only direct and immediate loss by the death and sickness of adults, but potential loss in the case of children. The chief problem before the conference would be to discover by what means this widespread suffering could be preventible. His Excellency next passed in review the work of the French army surgeon Laveran in 1880, the brilliant suggestions of Sir Patrick Manson in 1894, and the discovery by Major Ronald Ross of the Indian Medical Service in 1897, all connected with the life-history of the malarial parasites. The question of the possibility to exterminate a particular kind of mosquito from malarious localities confronts us, he said, with another problem. The answer, Lord Minto ventured to think, rested rather with the administrator than with the doctor and man of science. He was afraid, however, that he had not the hardihood to enter into the controversial atmosphere which surrounded the question. He left it to the conference to decide to what extent the malarial mosquito had been practically vanquished in the past or can be utterly defeated in the future. Much must depend upon the development of sanitation, upon carefully considered organisation, and last, but not least, upon financial possibilities. But however that may be, while readily admitting the value of the great discoveries to which he had referred, we are mercifully in

our struggle with malarial fevers not merely confined to the direction of an anti-mosquito campaign. He referred the direction of an anti-mosquito campaign. to a prophylactic administered upon systematic and wellthought-out lines, and quoted Professor W. Osler's results in Canada, the marked successes on the Panama Canal, and the distribution of quinine in the shape of comfits and chocolates in the malarious districts of Italy. Colonel Braide's satisfactory results due to prophylactic treatment in the prisons of the Punjab were also enumerated. The conference had before it two important facts, Major Ross's discovery of the actual cause of malaria and the evidence which Lord Minto thought they may assume to be incontrovertible that where quinine can be systematically administered as a prophylactic a very general immunity from malaria will result. It would rest with the conference to decide by what means the knowledge of these two great facts may best be utilised. He only attempted to outline the general conditions of a problem of imperial magnitude inasmuch as it affected the health and happiness of a great country, the successful solution of which problem must depend upon the united efforts of the administrators and the varied interests which the members of the conference were assembled to represent. It was his earnest hope that the results of the deliberations of the conference may be the inauguration of a campaign against what we now know to be a preventible disease, and which campaign would confer a great boon upon the people of India, and although the campaign must of necessity be long and hard fought he opened the conference in the firm belief that it would eventually be crowned with success.
Lieutenant-Colonel J. T. W. Leslie, M.B., C.I.E., I.M.S.,

Lieutenant-Colonel J. T. W. Leslie, M.B., C.I.E., I.M.S., then delivered an introductory address, sketching the positions of the problems which would be placed before the conference.

(To be continued.)

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Hospital Sunday.

ON Oct. 31st collections were made at nearly all the churches and chapels in the city and neighbourhood in aid of medical charities. 17 charities participate in the proceeds. 283,000 cases were treated by them last year, as compared with 271,000 in the previous year. The increased expenditure necessitated by this larger number of cases, and the fear that the depression in trade and the numerous heavy calls that have been made during the year in support of the various philanthropic agencies might result in diminished collections, caused a special effort to be made by the organisers this year. The full returns have not yet been made, but it appears that last year's total of £5119 will be exceeded.

Health of Staffordshire.

Dr. G. Reid, the medical officer of Staffordshire, has just issued his twentieth annual report. A question of great importance to the inhabitants of the districts through which the River Tame flows is the condition of the watercourse. There has been a pronounced improvement in recent years through the efforts made by the Birmingham, Tame, and Rea drainage board in extending the area of the biological filters. Infantile mortality in the county still continues to decline, but there are five urban districts in which the mortality is more than 170 per 1000 births. Tunstall stands at the top of the list, with 209 deaths; Darlaston is second, with 200; Burslem and Longton have each 183; and Fenton has 179. Strong comments are made concerning the sanitation of Darlaston. It is one of the worst privy-midden towns, and in regard to the Notification of Births Act, Dr. Reid says that unless the district council determines to adopt the Act it will become a question whether the county council should not bring the Act into operation. Vaccination is very inefficiently performed in many districts of the county, and it is evident that the facility offered for obtaining exemption certificates has already had serious consequences as regards the number of children protected against small-pox.

The University.

The following appointments to the staff have been made: Mr. J. Sholto Cameron Douglas, M.A., M.B. Oxon., lecturer

¹ THE LANCET, May 29th, 1909, p. 1568.

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THE LANCET OFFICES 423 STRAND, LONDON, W.C.

Reduction in the Price of The Lancet

The Manager begs to announce that with the New Year the price of The Lancet will be reduced to 6d. The Annual Subscription will also be reduced—to One Guinea for the United Kingdom and for Medical Subordinates in India whose rate of pay, including allowances, is less than Rs. 50 per month*; and to 25s. for the Colonies and Abroad.

For some time past it has been felt that the price of The Lancet, which has remained at 7d. for the past fifty years, is not in accordance with the progress of modern newspaper development; but sentimental objections to any change on the part of the late esteemed Proprietor of The Lancet, who lived to an advanced age, stood in the way of making the reductions at an earlier date.

In all other respects The Lancet will remain exactly as before, save in those features where it can

Subordinates claiming this rate can obtain from their Commissioned Officer a Certificate stating their rate of pay and allowances, and can forward it to The Lancet Offices with a request to be placed on the Subscribers' List.

be improved. It will continue to be a perfectly independent Journal, representing no sort of clique or particular school of thought, and serving no private aims whatever; for the interests of The Lancet must ever be identified with and be inseparable from those of the great body of the practitioners of medicine throughout the World.

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in pathology and bacteriology; and Mr. Leonard Doncaster, M.A., special lecturer in heredity and variation.

Hospital Appointments.

At Queen's Hospital the post of honorary physician, rendered vacant by the tragic death of Dr. A. Foxwell, has been filled by the election of Mr. Joseph George Emanuel, M.D. Lond., M.R.C.P. Lond., physician to out-patients at the Queen's Hospital and Midland Free Hospital for Sick Children. Dr. Emanuel formerly held the posts of pathologist to the General Hospital and resident medical officer to the Hospital for Diseases of the Chest, Victoria-park, London. At the General Hospital Dr. J. Sholto Cameron Douglas has been elected to the post of visiting pathologist rendered vacant by the resignation of Dr. James Miller, who has been appointed extra-mural lecturer on pathology at Edinburgh. The increase in the number of operations at the General Hospital has necessitated the services of a third anæsthetist, and Mr. R. H. Rollinson-Whitaker, F.R.O.S. Eng., has been elected to the position.

Midland Medical Society.

The first meeting of the session was held on Oct. 28th. Sir Lauder Brunton delivered an address on Vascular Changes in Later Life. Mr. Frank Marsh, the President, occupied the chair, and there was a very large attendance of members. Nov. 8th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Edinburgh Medico-Chirurgical Society.

THE first meeting of the new session of this society was held on Nov. 3rd. Perhaps the most interesting part of the proceedings was the expression by the President of the society's appreciation of the faithful and successful manner in which Dr. William Craig had acted as editor of the society's Transactions for 28 years, a labour which he was now relinquishing and passing on into other hands. It is proposed to present Dr. Craig with a tangible mark of the society's gratitude for the way in which he has worked for the society. Dr. James Ritchie, who has occupied the Presidential chair for the last two sessions, took for the theme of his valedictory address the importance of the constitutional element in diseases caused by bacteria, and referred to various interesting illustrations taken from cases in his family practice. Dr. Byrom Bramwell was then called to the chair and was warmly welcomed by the members present

Lord Hugh Ceoil at the University of Edinburgh.

The Associated Societies of Edinburgh University had their session opened on Nov. 4th by an address delivered by Lord Hugh Cecil, the Honorary President of the societies. The address was delivered in the McEwan Hall, which was well filled, and the chair was occupied by Principal Sir William Turner, K.C.B., in the unavoidable absence of the Right Honourable A. J. Balfour, Chancellor of the University. Lord Hugh Cecil's theme was "Liberty and Authority." The address was listened to with great attention, and evidently appreciatively followed by the audience in spite of the closeness of the reasoning and of the fact that he spoke for an hour and a quarter with only notes to help him. The address was a plea for liberty and individualism, and were any criticism to be passed upon it here it would be that the converse could be presented perhaps with equal cogency. After the delivery of the address the lecturer was entertained to supper in the University Union.

The Administrative Treatment of Pulmonary Tuberculosis in Glasgon.

In reference to your annotation on this subject last week. I may point out that it has been decided to increase the number of tuberculosis dispensaries, and in connexion with this it is satisfactory to note that the parish council has intimated its willingness to assist the public health authorities in this direction by permitting the use of the parish dispensaries as district tuberculosis departments on certain days of the week. This, of course, is as it should be, and will make for economy.

Faculty of Physicians and Surgeons of Glasgow.

At a meeting of the Fellows of the Faculty held in the

the ensuing year. Dr. D. N. Knox is the new president, while Dr. James A. Adams has been elected visitor.

Sequel to the Colliery Dector Question in Fife.

Another conference between representatives of the Fife Coal Company and of the Fife and Kinross Miners' Association in regard to the dispute as to medical attendance was held last week. An agreement was drawn up which will at least temporarily remove the existing deadlock. It has been agreed that each man employed at the Fife Coal Company's collieries in the Kelty district shall nominate on the back of his pay-ticket, on a day to be afterwards named, the medical man whose services he desires for the next quarter, and a list of the names of the men will be sent to the practitioner who has been nominated by them. Quarterly each man will hereafter nominate on the back of his pay-ticket the medical man whose services he desires for the ensuing quarter. Pending a final agreement the 6d. per fortnight deducted for medicine and medical attendance from the date of expiry of the notices already lodged shall be retained by the company, to be divided later among the medical practitioners according to the nominations of the men. Although these terms have practically been accepted by both parties to the dispute it is believed that the question of the arrangement between the coal companies and the men in regard to the choice of a colliery doctor will now be raised all over the country.

Typhus Fever in Dundee.

There has been an outbreak of typhus fever in North George-street, Dundce, traced to a certain family, who are supposed to have contracted infection while attending the wake on a man who was said to have died from pneumonia. Everything is being done by the authorities that is possible to prevent further cases.

University College, Dundee.

The report of the Council of the College is satisfactory. this year showing the record in numbers, 128 men and 112 women. Of these 56 were medical students. The financial side is also satisfactory, total ordinary income being £12.902, expenditure £12,595, leaving an apparent surplus of £307. The system by which each professor participated in the emoluments from the class fees has now, with the help of the Carnegie Trust, been abolished. An appeal for assistance in further endowing several of the classes and for founding others is made by the committee.

An Infirmary Inquiry at Inverness.

At a general meeting of the managers of the Northern Infirmary at Inverness held last week the clerk read the report by the directors on the case of a well-known surgeon in Bristol, who had been a patient in the infirmary after a bicycle accident in which he had fractured his leg. A charge was made that the patient had been neglected by the medical man who sent him to the infirmary, who happened at the same time to be on the staff of the infirmary. A special subcommittee of the directors took evidence and made a full investigation into the circumstances. After considering the whole matter the directors submitted a lengthy report, in which they expressed regret that the case had been left to be treated by the house surgeon. So far as regards the initial treatment and the setting of the leg, and the fact that the medical man who sent the patient in did not go back to see him in the infirmary until after the case had been taken out of his hands, they considered that each case should have the continuous attention of the member of the staff under whose charge it was put until the patient was discharged. The house surgeon, they also considered, should have reported the state of matters to the surgeon in charge before calling in the assistance of another member of the staff. They added that the whole circumstances showed that the relations between certain members of the staff were strained, and that there was a want of harmony which should not occur in such an institution. The only satisfactory element in the case seemed to be that the patient did not suffer any bad effects in consequence of what took place.

Donations and Bequests.—The Secretary of the Bristol General Hospital has been advised that the sum of £1000 has been given to the hospital funds by an anonymous donor. This gift is peculiarly welcome at the present time when the ordinary funds of the hospital show a Faculty Hall last week the office-bearers were appointed for | deficit to which they are not accustomed.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Cleansing of Dublin Streets: Financial Difficulty.

A SERIOUS sanitary situation has just developed with regard to cleansing the streets of our metropolis—a city never quite proverbial for general tidiness or hygienic propriety. The fact is all the more deplorable inasmuch as every discriminating observer must admit that real strides forward have been made of recent years; while the general diffusion of hygienic education and the great amount of attention given to the housing of the poor had led some of the more sanguine to hope that in the course of another couple of decades our conspicuous mortality would be cut down to an average level. But the effect of a recent decision of the municipal council has been the production of a report by the cleansing committee in which an explanation is offered to the Lord Mayor, aldermen, and burgesses of the city of the consequent necessity for a reduction of The movement, which is a downward one, its staff. has been in progress for some months. In the three months ending June 30th of this year the committee had stated that a reduction of its estimates by a further £3000 had placed the department in a very serious position, but that they hoped to be able to effect a saving of £2050 by reducing the street staff by 20 men, by dispensing with some temporary hands, by taking off the £300 allowed for men's clothes, and by effecting small economies in other ways. These paragraphs were deleted by the council, and further correspondence with the estates and finance committee led to an expression of opinion of the latter body that after the rates had been struck on the basis of certain figures approved by the council, a subsequent resolution, which would have the effect of involving an expenditure not provided for at the time of consideration of the estimates, could not possibly be complied with. The law agent also wrote to the same effect. These communications caused the cleansing committee to hold a special meeting, the result being that further dis-oussion showed that the anticipated reduction of expenditure was greater than could be carried out. The council had resolved that the grant of clothes should be made to the men this year, and also that full pay should be given them during the first month of any illness; both items of proposed curtailment. But as no corresponding provision had been made when considering the estimates, the cleansing committee has definitely stated that it has no option but, having previously stopped all special work, to dismiss another batch of 57 men. In addition to the deplorable increase of unemployment which must result is the fact that the present reduced staff is not able properly to cope with the regular work of cleansing the streets—a fact which, unhappily, seems to be corroborated by the condition of every metropolitan thoroughfare at the present date. The committee has pointed out that the further reduction of its employees means that at the most important time of the year the work of cleansing the streets in the form of any general system must be abandoned, and it doubts whether it can even keep up the regular clearance of the dust-bins. It is very much indeed to be hoped that, in the interest of public health and of public taste, an early solution of this financial crux may be arrived at.

The Dublin Corporation and the Sale of Poisons.

At last week's meeting of the Dublin municipal council three members of the Pharmaceutical Society attended on behalf of that body to ask the council not to issue licences for the sale of poisons to seedsmen and other general tradesmen. The spokesman stated that there were 1500 persons on the register of the Pharmaceutical Society for Ireland who were legally qualified to keep open shop for the sale of poisons, and of that number 100 were carrying on business within the boundary of the city of Dublin, and that while a number of these were dispensing chemists pure and simple, a number of others carried on business as agricultural and horticultural druggists. It was submitted that the Pharmaceutical Acts had been passed solely in the interests of the public, because it was important that great care should be used in the handling of poisons, which should be carried out only by persons qualified for that purpose, as the pharmaceutical chemist

is, having been obliged to take out prescribed courses of lectures, to pass through a regulated course of study, and to undergo a searching examination. The municipal council, the Pharmaceutical Society argued, had been asked to grant licences to persons who had not shown that they were educated or qualified to handle those very dangerous substances in order that the public might obtain what they wanted in one "general" shop; but the society hoped and believed that the council would not permit such proceedings. The report of the public health committee on the subject was afterwards submitted to the meeting, and a motion was carried delegating the matter to the public health committee with instructions not to grant licences to other than pharmaceutical chemists.

Memorial to the late Professor Daniel John Cunningham.

On Nov. 3rd a meeting was held in the Medical School of Trinity College, Dublin, to take steps to establish a memorial to Professor Cunningham. The Provost occupied the chair, and among those who spoke were Professor James Little, the Dean of St. Patrick's, Sir Charles Ball, Dr. A. C. O'Sullivan, the Hon. Mr. Justice Boyd, and Mr. Edward J. Gwynn. It was decided that a memorial medal and prize in anatomy should be founded and that a portrait in bronze should be placed in the school. It was further resolved that the friends and former pupils of Professor Cunningham be invited to subscribe—subscriptions not to exceed £2 2s. The following were appointed an executive committee to carry out the wishes of the meeting: Professor James Little, Sir Charles Ball, the Hon. Mr. Justice Boyd, the Right Hon. Jonathan Hogg, Dr. A. C. O'Sullivan, Mr. E. J. Gwynn, Professor A. F. Dixon, Professor C. J. Patten, Dr. T. G. Moorhead, and Dr. R. A. Stoney. Friends and former pupils of Professor Cunningham who desire to join in the movement are requested to communicate with one of these.

Ulster Medical Society.

The opening meeting of the present winter session of the Ulster Medical Society was held in the Medical Institute, Belfast, on Nov. 4th, when the new President, Dr. J. J. Austin, delivered an interesting inaugural address on "Life Insurance," in which he discussed very fully and in a most valuable way such questions as the selection of an office, the special points to be attended to by medical men in the examination of those proposing to insure, the value or the reverse of personal history, and the comparative importance to be attached to signs of cardiac, renal, and pulmonary disease. Sir John Byers having spoken of the address as one of exceptional merit, a vote of thanks to the President was passed with enthusiasm by a large audience. The annual dinner of the Society will be held on Thursday next, Nov. 18th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Dried Blood Serum as a Hæmostatic.

THE therapeutic possibilities of the dried blood serum of the horse formed the subject of a communication made by M. Robert and M. Chody at a meeting of the Therapeutical Society held recently. They said that although normal blood serum was known to possess hæmostatic and cicatrising properties its use was limited by the difficulty of obtaining a prompt supply of it in a fresh and aseptic state. They had, however, found a means of facilitating its therapeutic application by using the serum of horse's blood collected with aseptic precautions and immediately dried in a vacuum at a pressure of about two millimetres of mercury and a temperature approaching 0° C. Their experience and that of other observers who have tried this dried serum showed that it retained all its properties both in the dry state and after having been redissolved in water. Externally, it was useful in various profuse hæmorrhages, in epistaxis, and in hæmorrhage due to such causes as extraction of teeth, operations on the tonsils, removal of adenoid vegetations or hæmorrhoidal protrusions, rupture of the hymen, &c. Internally, the dried serum might be given in doses of one or two grammes daily in cachets to patients suffering from severe anæmia, hæmophilia, and other dyscrasic conditions attended with hæmorrhage.

Obstetrical Society of France.

A meeting of the Obstetrical Society of France was held in Paris last month. The principal subjects of discussion were as follows: Difference in the Temperature of the Lower Limbs (by M. Delestre); Results of Cultivations from the Blood in a series of dangerous puerperal infections (by M. Guéniot, with remarks by M. Cathala); Cyst of the Ovary in a parturient woman (by M. Lapage, with remarks by M. Pinard); a case of Myomectomy during pregnancy (by M. Corvelaire); Treatment of Aseptic Wounds by the lactic acid bacillus (by M. Jeannin); Retention of the Placenta and criminal abortion (by M. Boissard); Hysterectomy for Peritonitis following criminal manipulations in a non-pregnant woman (by M. Brindeau and M. Chirié); Asphyxia by Coal Gas of a woman at term, with recovery of the mother but death of the fectus (by M. Tissier); and Spontaneous Expulsion of a small uterine fibroma immediately after delivery (by M. Lacasse). Malignant tumours of the placenta formed the subject of a report presented by M. Brindeau and M. Nattan-Larrier, and there was a discussion in which M. Keifer, M. Brouha, M. Durante, and M. Paquy took part.

International Congress of Physiotherapy.

The Third International Congress of Physiotherapy will be held in Paris from March 29th to April 2nd, 1910, under the presidency of Professor Landouzy, Dean of the Faculty of Medicine. The work of the congress will be conducted in the seven sections as follows: (1) Kinesitherapy; (2) Hydrotherapy and Thermotherapy; (3) Climatotherapy; (4) Electrotherapy; (5) Radiotherapy, Radiumtherapy, and Phototherapy; (6) Cryotherapy; and (7) Dietetics. Further information may be obtained from the Secretary, Dr. Vaquez, 27, Rue du Général Foy, Paris.

Comparative Frequency of Tuberoulosis in the Offspring of Tuberoulous and Non-tuberoulous Parents.

At a meeting of the Société Médicale des Hôpitaux, held on Oct. 22nd, M. Pissavy communicated some statistics showing, on the one hand, that among 1428 children born to 469 non-tuberculous married couples, 123—i.e., 8 per cent.—became tuberculous; and, on the other hand, that among 292 children born to 100 married couples, in each of whom at least one of the parents was tuberculous, 93—i.e., 31 per cent.—became tuberculous. He also said that it seemed to be proved that in respect of the frequency of the transmission of tuberculosis there was no difference between town and country children.

Effects of the Suboutaneous Injection of Concentrated Tuberoulin in Non-Tuberoulous Children.

Subcutaneous injections of tuberculin in a concentration of 1 in 100 have been given by M. Mantoux to children who did not react to the ordinary dilute solution of 1 in 5000. The greater number of the children showed redness and sometimes a suspicion of infiltration at the place of injection; these symptoms, however, attained their maximum at the end of 24 hours and disappeared at the end of 48 hours. This was followed by an intradermal reaction which always developed on the second day. The injection of concentrated tuberculin, therefore, produced in non-tuberculous persons an early irritative reaction which was sharply distinguished from the late intradermal reaction. In the former case the tuberculin behaved as an ordinary irritant, whereas in the latter case it had a specific action. M. Mantoux gave details of his observations on Oct. 23rd at a meeting of the Biological Society.

Nov. 9th.

GUARDIANS AND TUBERCULOSIS.—At a recent meeting of the East Westmorland board of guardians at Appleby it was decided to renew the subscription of £60 to the Westmorland Sanatorium for Consumptives in order that the board might have the right to one free bed. The motion to this effect was only carried after some discussion, as three years ago the board adopted a resolution that the subscription to the sanatorium which had hitherto been paid should be discontinued.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Enforcement of the Vaccination Law.

THE Ober Verwaltungs-Gericht (High Court for administrative actions) has lately decided that the authorities have the right to compel a father (by the use of force if necessary) to have his child vaccinated. A man having been asked by the local police to obtain a certificate showing that his daughter had been vaccinated, failed to comply with the request, and was therefore fined by the police magistrate. The police then told him that they would be obliged to take the girl to the medical officer of health for vaccination. The father thereupon brought an action against the police, pleading that the question was settled by the fact of him paying his fine, and it was further argued in his behalf that the vaccination law, while rendering a father liable to a fine in the event of contravention, did not entitle the police to vaccinate a child by force. The court, however, decided that the action of the police was in accordance with the law, admitting that children might be lawfully exempted from vaccination for reasons of health. but not because the father happened to be opposed to vaccination. It would be at variance with the spirit of the law to hold that by once paying a fine a man may be allowed to obtain exemption of his children from vaccination, and in that way eventually to create risks for their health and that of his fellow-citizens.

Treatment of Erysipelas and Frostbite.

Professor Binz of Bonn, writing to the Berliner Klinische Wochenschrift of Nov. 1st, reports that 15 cases of erysipelas have been successfully treated by an ointment containing 15 per cent. of chlorinated lime (CaOCl₂), the result being that the fever disappeared on an average after two or three days, as compared with nine days under the methods formerly employed—namely, compresses charged with carbolic acid, corrosive sublimate, or alcohol. No complica-tions happened and no death occurred. Professor Binz on a former occasion had recommended the substance in question for the treatment of frostbite. He states that his method has been applied in a great many cases, in only one of which were there any undesirable symptoms produced. In this case the ointment after having been applied for five days gave rise to a bullous exanthem which spread from the hands to the skin of the face and the femur. It is therefore advisable, in the first instance, to employ an ointment of only 5 per cent. strength and only over a small area without ulcerations. The irritated spots should then be washed with a solution of sodium thiosulphate of 1 per cent. strength.

Examination of Tuberculous Sputum.

The Hygienic Laboratory of the city of Berlin has for some time examined free of charge samples of sputum sent to it by Berlin medical men. The town council, however, recently decided that the laboratory should charge for every examination 2 marks 50 pfennig, of which 1 mark 25 pfennig were to be paid previously to the examination. In explanation of this change it was pointed out that well-to-do persons could have their sputum examined by private laboratories, whilst for club patients and those of the necessitous classes the examination was undertaken by the anti-tuberculous dispensaries. The laboratory was also ordered to destroy the sputum in the case of the fee not being paid within The decision of the council was based on three days. the alleged great expense of examination of sputum made indiscriminately in every instance. This new departure caused a unanimous protest both in the ordinary newspapers and in the medical press. It was said that the prevention of tuberculosis was a matter of public welfare just as the prevention of fire was, and that the council might with as much reason abolish the fire brigade to save the expenses. The State laboratories are much more liberal than the municipal laboratory because they have examined and continue to examine every sample of sputum sent to them by a medical practitioner. The Deutsohe Medizinische Woohenschrift reminds its readers that in 1895 the Mayor of Berlin declined to make arrangements for bacteriological examination in suspected cases of diphtheria because it was not yet proved that Löffler's bacillus was really the only cause of

diphtheria. Universal disapproval has fortunately induced the council to withdraw its decision on the pretext that it was only provisional, but the narrow behaviour of the council has confirmed the general opinion that the appointment of a competent and salaried chief medical officer to the city of Berlin is highly necessary. At the present time medical questions coming before the council are usually handed over to one member who happens to be the only medical man having a seat on it, and who has interested himself in this work for many years. This system, however, is not without disadvantages nowadays when hygienic problems are so numerous and important.

Repeated Prosecution and Acquittal of an Unqualified Practitioner.

The repression of quackery is rather difficult in Germany. Unqualified practice itself is not punishable when no recognised medical title is assumed, and actions against such practitioners can be brought only on the ground of imposture or neglect of patients. The medical societies and the police do as much as they can to restrain quackery, but unfortunately their endeavours are hindered by the law courts where verdicts of "not guilty" are often given in most flagrant cases. An instance of this kind happened lately at Crefeld in Rhenish Prussia, a large industrial town, famous for its silk factories. In the neighbourhood of that town there lived a clergyman who has for many years conducted an unqualified practice on an extremely large scale, the annual number of new patients being estimated at about 15,000, who came not only from Germany but also from the neighbouring countries of Holland and Belgium. He does not charge fees but leaves it to the patients to pay what they think fit to the beadle who acts as his assistant and secretary. One of his favourite prescriptions was to put the patient into a clay-pit in the neighbourhood of his residence so that the people gave him the nickname of "Lehm-Pastor"—i.e., clay-priest. His diagnosis was only made by an inspection of the eyes of the patient, his theory being that he was able to see from certain lines or spots in the iris which organ was affected. He has been prosecuted 13 times but has always been found not guilty. Recently he was again charged with having caused the death of a patient by neglect. He had ordered a child suffering from appendicitis to be put into the clay-pit, the result being that death ensued from peritonitis. Before the court the hospital physicians and surgeons of Crefeld gave evidence that the clergyman's theory was absolute nonsense; the court thereupon decided that the defendant should prove in 20 cases at the Crefeld Hospital whether he was able to make a diagnosis by inspection of a patient's iris. The experiment failed utterly, for in no instance was a correct diagnosis made, and in one case the clergyman even overlooked the fact that the patient was blind. A verdict of "guilty" was generally expected, but to the great astonishment of the audience he was found "not guilty." An enormous crowd waited outside the court, and when the defendant appeared he was greeted with general applause and brought in triumph to the railway station. Far from making an end of the clay-priest's medical practice, the prosecution will, on the contrary, increase his renown. It may be seen from the foregoing that there is not much prospect of unqualified practice becoming extinct in the present state of the law. Nov. 8th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

The New Surgical Clinic.

THE surgical clinic which was erected in 1875 and has been regarded by foreigners as one of the best equipped institutions of its kind on the continent, has of late years proved to be inadequate to present-day requirements. A new clinic has therefore been erected according to the plans of the architects, Mr. Korb and Mr. Giergl, acting on the instructions of Professor Dollinger. The building stands on the site of the old Botanical Gardens, and the surgical clinic took possession of its new quarters in October of the present year. The clinic consists of a basement, a raised ground floor, and two upper storeys, over which in the central part of the building there is a third storey, where the sleeping apartments of the nurses are located. For the distribution of

food from the central kitchen there is an underground tunnel having two special distributing rooms located at each end of the basement. From here the food is carried by lifts to the first- and second-floor dining rooms, while the bed-linen and dressing material are transported by two special lifts located in the right and left wings of the buildings. waste dressing material is transported in receptacles specially made for this purpose to the stoves, which are located in the basement, where there are also the following departments: (1) a store room for dressing material and plaster bandages; (2) sterilisers for dressing material; (3) a stove for burning cotton and other rubbish; (4) an orthopædic gymnasium; (5) an orthopædic workshop; (6) a dark room, which communicates by a spiral staircase with the photographic room situated just above it; (7) a room for the cages of small animals used for experimental purposes with staircase leading into the laboratory above; and (8) a mortuary, in which the bodies await removal to the pathological institute. The out-patient department is in the left wing on the ground floor, and here is also the room of the surgeon on data who affects for all also the room of the surgeon on data who affects are also the room of the surgeon on duty, who affords first aid in cases of emergency. Running along the whole length of the consulting-rooms there is a corridor, which is widened at each end, where there are chairs and benches for waiting patients. Into this corridor the consulting-rooms open, all of which are provided with dressing-rooms for males and for females. Out-patients attend in one or other of the following sections: (1) a section in which wounds, abscesses, and superficial inflammations are treated, the medical students being admitted in groups of 10 or 12, changing fortnightly; (2) a section for diseases of joints and bones and orthopædics, in which the students are admitted in groups of six; (3) a section for urological cases; and (4) a section for laryngeal and nasal cases. In these rooms minor surgical operations are performed, and after-treatment is given to patients discharged from the clinic but not entirely recovered. At one end of the corridor are the X ray laboratory and the photographic room, with the room for laryngeal and nasal cases between them. The separation of the X ray room from the photographic room is made purposely in order to prevent the sensitised plates from suffering under the action of the X rays. In the right wing of the ground floor there are: (1) the histological, chemical, bacteriological, and experimental laboratories; (2) the museum; and (3) the library and reading-room, together with the medical officers' dining-room and other apartments for their use. In the central part of the high ground floor, close to the main entrance on the left is the doorkeeper's lodge, and on the right a large lift in which there is room for one bed and three persons accompanying the patient. There is a wide staircase leading into the vestibule of the high ground floor. Into this vestibule the waiting-room, study, and dressing-room of the professor open. Into the left half of the vestibule a small lecture room opens for lectures delivered by privat-docenten and for certain courses of instruction. Opposite the main entrance of the large vestibule is the entrance to the large amphitheatre-like lecture hall, on both sides of which are waiting-rooms for male and female patients. Next to it there are the sterilising room and the room in which the patients are prepared for operation. The main lecture hall is lighted by a large window facing north. The space provided for the lecturer is so planned that operations can also be performed in it, and around this space there are 224 seats arranged in amphitheatre fashion. This lecture hall is connected with the right and left wings of the clinic by a covered glass corridor. The students come into the lecture hall from the first floor through a cloak-room, where there are lavatories for ladies and gentlemen. The male patients are accommodated in four large wards each containing 11 beds, four small wards each containing five beds, and four wards containing two beds. On the east side of the large wards there is a covered balcony, used as a recreation room, called the The left half of the floor is for septic and the right for aseptic patients, and in each wing there is a special room devoted to treatment and bandaging, and one dining-room, serving also as a recreation room for patients. The arrangement of the second storey corresponds with that of the first floor and contains the wards and rooms for female patients. In the northern part of the right wing is the aseptic operating theatre and on the left wing the operating theatre for septic cases. These theatres are arranged on the following plan:

(1) bathroom for patients; (2) preparatory room for patients; (3) instrumentarium; (4) sterilising room; (5) washing room for medical officers; and (6) operating theatre. All the floors are paved with glazed tiles and the walls are overlaid with white enamelled tiles. The sterilisers for instruments and dressing material are built in the wall between the operating theatre and sterilising room, and are accessible from both sides. On the flat roof there are terraces for the use of the patients; as a protection against the heat of the sun there are large roll-up awnings. These terraces can be utilised for light baths and sun baths. clinic still needs a building for the isolation of patients suffering from severe infectious diseases, and steps have already been taken towards supplying this deficiency. Nov. 7th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Institute of Tropical Diseases.

THE Registrar of the University of Sydney reports that an appointment has been made in connexion with the Australian Institute for Tropical Diseases. The headquarters of the institution will be at Townsville, Queensland, and the first director will be Dr. Anton Breinl. Dr. Breinl is a graduate of the University of Prague, where he occupied for some time a position as demonstrator of pathological anatomy. Latterly he has been connected with the Liverpool School of Tropical Medicine.

Tuberoulosis in New South Wales.

The Government statistician has issued a pamphlet analysing the mortality from tuberculous diseases in New South Wales. A comparison of death-rates for different types shows that pulmonary tubercle provides the great bulk of mortality. A table is given setting forth the salvage of life possible had the present-day rates prevailed through the last 33 years:-

			Actual deaths.	Salvage by present rates.		p	Salvage per cent. of actual.	
Males-Metropolis			11,504		5122	•••••	45	
Country			13,826	•••••	3159		23	
Females-Metropolis	•••		8909		3492		39	
Country			8593		1723		20	

Clinical Teaching at Sydney.

Medical students at the University of Sydney are in future to have the privilege of attending clinical teaching at the Sydney Hospital as well as at the Royal Prince Alfred Hospital. The latter institution is practically in the University grounds and while the number of students was small answered all requirements, but the school has shown such expansion that extra accommodation is needed. The following lecturers have been appointed at the Sydney Hospital: Olinical medicine, Dr. Sydney Jamieson; clinical surgery, Dr. H. L. Maitland; tutorial medicine, Dr. Hamilton Marshall; and surgery, Mr. B. J. Newmarch.

Telephone Mouth pieces.

An investigation was recently undertaken by Dr. F. Tidswell, director of the Bureau of Microbiology of New South Wales, into the question of the transmission of infection by telephone receivers. He examined 50 receivers and formed the conclusion that these mouthpieces are not a usual harbour for pathogenic germs. Diphtheria and tubercle bacilli were notably absent.

Asylum Pathologist.

The Victorian Government appoints an asylum pathologist under the present Lunacy Act, but the Faculty of Medicine has reported to the University Council that "the salary is not sufficient to induce a competent officer to surrender his whole time, and the duties include the making of post-mortem examinations in these asylums whenever the coroner so directs. In these circumstances a satisfactory result is impossible. Adequate research work is out of the question. The restoration of the duty of making post-mortem examinations to the medical staff of the hospital would greatly promote the scientific work, and full protection would be given patients if the coroner retained power in any particular case to instruct the neuro-pathologist or an outside medical practitioner to make a post-mortem." After consultation with the Inspector-General, the Faculty recomby the Government and the University Council, to devote his whole time to the work of research and teaching. salary named was £650 per annum, of which the department would provide £600, and £50 would be added by the University. The officer appointed would act as lecturer in the University.

Defective Teeth.

A partial examination of the teeth of State school-children in Melbourne reveals the fact that the proportion with defective teeth is very much the same as that in other countries. About 95 per cent. required more or less attention. Representations have been made by the Odontological Society as to the necessity of having one or more dental inspectors appointed to visit State schools.

The Keeping of Milk.

Mr. W. D. Pasey recently claimed in Western Australia to have discovered a new method of milk preservation by which milk could be kept fresh for practically an indefinite period. A bottle of milk stated to be five months old was some weeks ago handed to the Government analyst. It was kept a week further before being analysed, and the following report was submitted: "Total solids, 14.1 to 14.31 per cent.; fat, $4\cdot55$ per cent.; solids not fat, $9\cdot76$ per cent.; ash, $0\cdot73$ per cent.; specific gravity, $1\cdot34$. The milk has apparently been treated, but is free from any of the ordinary preservatives. It behaves in a peculiar manner in certain respects which cannot be explained without full particulars of the treatment it has undergone, but I see no reason to believe that it is in any way detrimental to health." Dr. F. Andrews, who was given a sample, said to be two months old, for bacteriological examination, kept it for four days before making his investigation. He reports that it gave almost the tests of normal milk. It formed almost normal junket, the clot being somewhat softer than that of ordinary milk, which might have great advantage from the standpoint of infant-feeding. 12 cultures remained sterile. He adds: "The most striking thing about the milk was the way it remained fresh after opening the bottle. Ordinary pasteurised milk keeps for only a limited time, and for a very short time once exposed to the air. I kept this milk exposed to the air for three days, and drank some of it then, and though I did not re-examine it bacteriologically, it was perfectly fresh milk so far as taste went."

Epidemics in Papua.

The Commonwealth Minister for External Affairs has received intelligence of severe outbreaks of disease among the native population of Papua. Dysentery and whoopingcough have been rife in the villages and many deaths have resulted. Medical aid was at once arranged for, and the principal medical officer proceeded in the schooner Merrie England to direct operations. It is estimated between 400 and 500 deaths have occurred, but the trouble appears to be now at an end. The Government has tendered special thanks to the Rev. Caleb Beharel of the London Missionary Society. Oct. 4th.

Medical Rebs.

FOREIGN UNIVERSITY INTELLIGENCE. Florence: Dr. Luigi Siciliano has been recognised as privatdocent of Medical Pathology, and Dr. Corsino Andrea Corsini as privat-ducent of Hygiene and State Medicine. - Freiburg: Dr. Wilhelm Trendelenburg, privat-docent of Physiology, and Dr. Franz Knoop, privat docent of Physiological Chemistry, have been granted the title of Extraordinary Professor.-Genoa: Dr. Arturo Morselli has been recognised as privatdocent of Psychiatry. - Göttingen: The late Professor Runge's chair of Midwifery and Gynæcology not having been filled up. Dr. Richard Birnbaum has been appointed to carry on the duties for the present. - Kiel: Professor Franz of Jena has accepted the offer of the late Professor Pfannenstiel's chair, but will not take up the duties until the summer session. They will in the meantime be carried on by Professor Hoehne. -Philadelphia (Jefferson Medical College): Dr. George E. Price has been appointed Assistant Professor of Neurology and Psychiatry. - Vienna: The charge of the Medical Department of the Polyclinic, vacant by the resignation of Professor von Stoffell, has been given temporarily to Dr. Rudolff mended that a neuro-pathologist should be appointed jointly | Kaufmann, and that of the Second University Gynzecological Clinic, vacated by the death of Professor von Rosthorn, has been similarly given to his assistant, Dr. Fritz Kermauner, for the current winter session.

Dr. Stanley B. Atkinson, J.P., was re-elected to the Stepney borough council last week.

Mr. R. Henslowe Wellington delivered a lecture upon Forensic Medicine and Coroner's Law on Wednesday last before the North-East London Post-Graduate College.

University of Sheffield.—The Council of the University of Sheffield has made the following appointments: Mr. George Wilkinson, B.A., M.B. Cantab., F.R.C.S. Eng., to the newly instituted lectureship in diseases of the ear, nose, and throat; Mr. George H. Pooley, B.A., F.R.C.S. Eng., F.R.C.S. Edin., to the lectureship in ophthalmology.

At a meeting of the Yeovil (Somerset) education committee held on Oct. 29th Alderman Sibly stated that after consultation with the chairman and the medical inspector of schools he had decided to defray the cost of providing a dental surgery for the treatment of school children, and he would also provide the maintenance funds for the first year. The committee awarded Alderman Sibly a hearty vote of thanks for his generosity.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—The next general or quarterly meeting of the above association will be held at 3 o'clock on Tuesday, Nov. 23rd, at 11, Chandos-street, Cavendish-square, London, W., under the presidency of Professor W. Bevan-Lewis. It will be preceded at 2 30 r.m. by the adjourned business portion of the last annual meeting. Members will dine together at the Café Monico at 7 P.M.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN. -The annual dinner of this school will be held at the Trocadero Restaurant, W., on Friday, Dec. 10th, at 6.45 for 7.15 p.m. Mr. H. Work Dodd will take the chair and there will be music after dinner. Applications for dinner tickets should be sent to Dr. A. G. Phear, 47, Weymouth-street, W., or to Mr. T. P. Legg, 141, Harley-street, W., not later than Dec. 1st.

THE MEDICAL TREATMENT OF LONDON SCHOOL CHILDREN.—The London County Council this week dealt with a part of the recommendations of the education committee for the medical treatment, through voluntary agencies, of London school children, referred to in THE LANCET last The main report advising the subvention of eight hospitals has not yet reached the Council, but on Nov. 9th it decided to accept the offer of the Hampstead Council of Social Welfare to provide gratuitously for one term medical treatment for children attending the Hampstead elementary schools. In this case it is proposed to establish two clinics, one in the out-patient department of the Hampstead General Hospital, and the other at some convenient centre in the western part of the borough. The treatment will be given by local medical men who are specialists in the ailments of children. We understand that the experiment is under the control of Mr. Hancock Nunn.

COMPLIMENTARY DINNER TO DR. W. A. DINGLE. -Dr. W. A. Dingle, the retiring Mayor of the borough of Finsbury, on Monday night last, to mark the close of his period of office, was entertained at dinner at the Holborn Restaurant. The chair was occupied by the Rev. Prebendary G. H. Perry, rector of St. Luke's, Old-street, himself an ex-Mayor of Finsbury, and among the others present were Alderman Enos Howes, J.P., L.C.C., Colonel Welby, L.C.C., the retiring Mayor of Holborn (Alderman Nolan Glave), Dr. W. Rawes, Dr. R. W. Gilmour, Mr. R. D. MacGregor, Dr. Gibbons, and Dr. A. E. Thomas, and a number of clergy. During the proceedings the chairman spoke of the very successful manner in which Dr. Dingle had performed the duties of Mayor, and asked his acceptance of a framed and handsomely illuminated address, the wording of which comprised a vote of thanks passed to him and the Mayoress by the borough council at its last meeting. Dr. Dingle was also presented with a silver epergne and Mrs. Dingle with a pair of bracelets.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Parliamentary Session.

THE House of Commons, having read the Finance Bill the third time, has adjourned for a fortnight. The second reading debate on the measure will in all probability commence in the House of Lords on Monday, Nov. 22nd. It is expected that the session will come to an end in the early days of December.

Asylum Officers' Superannuation Bill.

The Asylum Officers' Superannuation Bill has passed the report stage in the House of Lords. Further changes were made in the text of the measure. Lord Monkbretton has taken charge of the Bill in the Upper Chamber, and has been in close communication with Sir WILLIAM Collins in regard to all the suggested modifications in its terms.

The Oaths Bill.

The Oaths Bill, which is designed to facilitate the practice of taking the oath by uplifted hand in courts of law, has received a third reading in the House of Lords. It has also passed through the House of Commons.

The London Milk-supply.

If it were not a serious matter there would be something amusing in the way the responsibility for the purity of London's milk-supply is being bandied between Parliament and the London County Council. It reminds one of the ancient game of battledore and shuttlecock, and the manner of playing is as follows. The London County Council inserts in its annual General Powers Bill clauses to enable it to exclude "dirty" milk from the metropolis. When the Bill is before Parliament the President of the Local Government Board promises to introduce general legislation, and on this understanding the Council withdraws its clauses. Pressure of business prevents the Government from carrying out its promise, and next year the Council's attempt to obtain for London what the country as a whole cannot succeed in getting, is repeated, and is met with the same plea as before. And so the game goes on, and infant mortality with it. This week the County Council decided to have another try next session to get its clauses through, and at the same time adopted some of the Government's ideas towards the solution of the problem, namely, the clause in the Milk and Dairies' Bill, 1909, which empowers local authorities to prohibit the sale of milk derived from cows suffering from tuberculosis with emaciation as well as those suffering from tuterculosis of the udder; and another which enables a qualified veterinary surgeon, if provided with an authority from the medical officer of health, to exercise the powers of inspection and sampling which at present are only exercisable by the medical officer if accompanied by a veterinary surgeon.

HOUSE OF COMMONS.

WEDNESDAY, NOV. 3RD.

Medical Examination of Territorial Recruits.

Medical Examination of Territorial Recruits.

Mr. FLETCHER asked the Secretary of State for War whether he would explain why medical men who were Territorial officers received daily pay when in camp, but when deputed, as in March last, to examine recruits and men seeking promotion as non-commissioned officers, were told by their commanding officers that fees were contrary to regulations.—Mr. Haldane (by written answer) replied: No fee is prescribed; but a grant of 1s. is made to an association for each recruit passed. These grants form a fund from which fees for medical examination of recruits can be had if necessary. It is, however, anticipated that in most cases the medical examinations will be conducted by the Royal Army Medical Corps of the Territorial Force as part of their military duties, as was done in the case of the Volunteers. No officer of the Territorial Force is paid for duties outside camp or training.

THURSDAY, NOV. 4TH.

The Public Health Acts Amendment Act, 1907.

Mr. J. W. Wilson asked the President of the Local Government Board whether he would state the number of applications received from rural, urban district, and borough councils, respectively, for the adoption, in whole or part, of the Public Health Acts Amendment Act, 1907; and to what number of these the necessary authority had been already given by the Local Government Board.—Mr. Burns furnished the following written reply: The following statement gives the information asked for:—

receive	Number of applications received by the Local Government Board.			
Boroughs	130		103	
Urban districts (other than boroughs)	278	•••••	258	
Rural districts	5 5	••••••	45	
	463		400	

The Finance Bill and Asylum Grounds.

In answer to Mr. Nield, who asked the Chancellor of the Exchequer whether, under the terms of the Finance Bill, the undeveloped land of a county asylum used either for the purpose of the recreation of the patients or under cultivation for the supply of produce to the asylum would be chargeable either with increment tax or undeveloped land tax, Mr. LLOYD GEORGE replied: Clause 36 of the Finance Bill exempts

from both increment value duty and undeveloped land duty land held by a rating authority.

The Royal Army Medical Corps in Ireland.

Mr. ASHLEY asked the Secretary of State for War whether steps were being taken to ensure that officers of the Royal Army Medical Corps serving in Ireland should this year receive the full leave to which they were entitled by the regulations.—Mr. Haldane wrote in reply: Under normal conditions it will now be possible to give every Royal Army Medical Corps officer serving in Ireland throughout the year full leave. provided that he is willing to take it when the exigencies of the service permit.

BOOKS, ETC., RECEIVED.

LAURIE, T. WERNER, London.

Special Messenger. By Robert W. Chambers. Price 6s.

LIPPINCOTT (J. B.) COMPANY, Philadelphia and London.

low to Feed Children. A Manual for Mothers, Nurses, and Physicians. By Louise E. Hogan. Ninth edition. Newly revised. Price 5s.
The Harvey Lectures.

Society of New York, 1907-08. Price 9s. net.

MACMILLAN AND Co., LIMITED, London.

A System of Medicine. By Many Writers. Edited by Sir Clifford Albutt, K.C.B., M.A., M.D., LL.D., D.Sc., F.R.C.P., F.R.S., F.L.S., F.S.A.; and Humphry Davy Rolleston, M.A., M.D., F.R.C.P. Vol. VI.: Diseases of the Heart and Blood-vessels. Price 25s. net.

MARHOLD, CARL, Halle-a.-S.

RHOLD, CARL, Halle-a.-S.
 Über nichtdiabetische Glykosurien. Von Prof. Dr. Ferdinand Blumenthal. Price Pf.75.
 Theorie und Praxis der Eisentherapie nach dem gegenwärtigen Stande der Wissenschaft. Von Dr. Hans Schirokauer. Price M.I.
 Brzyklopädisches Handbuch der Heilpädagogik. Herausgegeben von Prof. Dr. med. A. Dannemann, Hilfsschul-Leiter H. Schober und Hilfsschul-Lehrer E. Schulze. Lieferung I. Vollständig in 10 Lieferungen à M.3.

METHUEN AND Co., London.

Air and Health. By Ronald Campbell Macfie, M.A., M.B., C.M.
Price 7s. 6d. net.
Food and Health. By Arthur B. Powell, Lieutenant, Royal Engineers. Price 3s. 6d net.
The Pilgrim Fathers, their Church and Colony. By Winnifred Cockshott, St. Hilda's Hall, Oxford. Price 7s. 6d. net.

MURRAY, JOHN, London.

Mosquito or Man? The Conquest of the Tropical World. By Sir Rubert W. Boyce, M.B., F.B.S. Price 10s. 6d. net.

NEWS PRINTING COMPANY, THE, State Printers, Paterson, N.J., U.S.A. Thirty-second Annual Report of the Board of Health of the State of New Jersey, 1908, and Report of the Bureau of Vital Statistics. Price not stated.

NISBET, JAMES, AND Co., LIMITED, London.

Our National Drink Bill, Its Direct and Indirect Effects upon National Health, Morals, Industry, and Trade. By John Newton. Price 1s. net.

RICHARDS, GRANT, London.

The Birds of the British Islands. By Charles Stonham, C.M.G., F.R.C.S., F.Z.S. With Illustrations by Lilian M. Mediand, F.Z.S. In Twenty Parts. Part XV. Price 7s. 6d. net.

SAUNDERS (W. B) COMPANY, London and Philadelphia.

Principles of Pharmacy. By Henry V. Arny, Ph.G., Ph.D. Price

Exercise in Education and Medicine. By R. Tait McKenzie, B.A.,

M.D. Price 15s. net.

A Text-book of Physiology. By William H. Howell. Ph.D., M.D.,
LL.D. Third edition, thoroughly revised. Price 18s. net.

SPRINGER, JULIUS, Berlin.

Einführung in die moderne Kinderheilkunde. Von Dr. B. Salge. Price M.9.

Uber das Wesen der formativen Reizung. Von Jacques Loeb. Vortrag gehalten auf dem XVI. Internationalen Medizinischen Kongress in Budapest, 1909. Price M.1.

Klinik der Missbildungen und kongenitalen Erkrankungen des Fötus. Von Professor Dr. R. Birnbaum. Price, paper, M.12; bound. M.1360.

bound, M. 13.60.

STUBER, A. (C. KABITZSCH), Würzburg.

Taschenbuch der Therapie, mit besonderer Berücksichtigung der Therapie au den Berliner, Wiener u.s. deutschen Kliniken. Herausgegeben von Dr. M. T. Schnirer. Sechste vermehrte u. verbesserte Ausgabe. Price M.2.

TAYLOR AND FRANCIS, London.

University of London. University College. Calendar. Session MDCCCCIX.—MDCCCCX. Price not stated. Calendar of the Royal College of Surgeons of England. August 1st, 1909. Price 1s.

UNIVERSITY OF LONDON, South Kensington, London, S.W.

University of London. The Calendar for the Year 1909-1910. Price 5s. net; postage 5d.
Regulations and Courses for Internal Students. September, 1909.

Price not state Regulations for External Students. September, 1909. Price 1s. 6d.;

postage 4d.

postage 4d.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. (SIMPRIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.)

Gout: Being Part VIII. of Several Clinical Treatises on the Pathology and Therapy of Disorders of Metabolism and Nutrition. By Professor Dr. H. Strauss. Authorised Translation under the Direction of Neills Barnes Foster, M.D. Price 3s. 6d. net.

Appointments.

Successful applicants for Vacancies. Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANGET Office, directed to the Sub-Etitor, not later than 9 octock on the Thursday morning of each week, such information for gratuitous publication.

BALLANTYNE, ARTHUR J., M.D., F.F.P.S. Glasg., has been appointed

Ballantyne, Arthur J., M.D., F.F.P.S. Glasg., has been appointed Surgeon to the Eye Infirmary. Glasgow.

Bearn, A. Russell, M.B., Ch.B. Edin., has been appointed House Physician at the Hampstead General Hospital.

Cates, Joseph, M.D. Lond., D.P.H. Camb., has been appointed Assistant Medical Officer of Health to the City of Coventry.

Coen, J. A., L.R.C.S. Irel., L.K.Q.C.P. Irel., has been appointed Catling Surgeon under the Factory and Workshop Act for the Ballaghaderrin District of the county of Roscommon.

Daly, Ashley S., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant Anasthetist to the London Hospital.

Deighan, W. J., L.R.C.P. & S. Irel., has been appointed Deputy District Medical Officer and Public Vaccinator for the North Wimbledon District of the Kingston Union.

Derksen, C. H., M.D. Edin., has been appointed House Surgeon at the Hampstead General Hospital.

Dickey, W., has been appointed House Surgeon at the Royal Victoris Hospital, Beliast.

FITZGERALD, F. C., L.R.C.S. Irel., L.A.H. Dub., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Newtownbutler District of the county of Fermanagh.

Georgeson, J. W., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Lauder District of the county of Berwick.

Gray, A. M. H., M.D. Lond., M.R.C.P. Lond., has been appointed Physician in Charge of the Skin Department of University College Hospital.

Hey, Wilson H., F.R.C.S. Eng., M.B., Ch.B. Vict., has been appointed

Hospital.

HEY, WILSON H., F.R.C.S. Eng., M.B., Ch.B. Vict., has been appointed Resident Surgical Officer at the Manchester Royal Infirmary.

HOUSTON, M. F., has been appointed House Surgeon at the Royal

Resident Surgical Officer at the Manchester Royal Infirmary.
HOUSTON, M. F., has been appointed House Surgeon at the Royal
Victoria Hospital, Belfast.
LLOYD, D. G., M.R.C.S., L.R.C.P. Lond., has been appointed Medical
Officer to the Llanfyrnach Rural District Council.
MUMFORD, WILFRED G., M. B. Lond., F.R.C.S. Eng., has been appointed
Honorary Assistant Surgeon to the Royal United Hospital, Bath.
PRICE, J. T., M.D. Dub. has been appointed Certifying Surgeon under
the Factory and Workshop Act for the Llansawel District of the
county of Carmarthen.
STEPPEN, W. LEGGE, has been appointed Junior House Physician at the
Prince of Wales's General Hospital, N.
STEVEN, W. S. R., has been appointed House Surgeon at the Royal
Victoria Hospital, Belfast.

Victoria Hospital, Belfast.

Pacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

AYR DISTRICT ASYLUM.—Junior Assistant Physician. Salary £120 per annum, with board, lodging, and laundry.

BETHLEM HOSPITAL.—Two Resident House Physicians. unmarried, for six months. Salary at rate of £25 each per quarter, with board and washing.

BIRKENHEAD BOROUGH HOSPITAL.—Senior Resident House Surgeon. Salary £100 and fees. Also Junior Resident House Surgeon. Salary £30 and fees.

BIRKENHEAD AND WIREAL CHILDRER'S Hospital, Woodchurch-road.— House Surgeon. Salary £100 per annum, with board, residence

and laundry.

Bristol Royal Infirmary.—Resident Casualty Officer for six months. Salary at rate of £50 per annum, with board, lodging,

months. Salary at rate of £50 per annum, with board, lodging, and washing.

CANCER HOSPITAL, Fulham-road, London, S.W.—House Surgeon. Salary £70 per annum. Also Assistant Surgeon.

CARDIFF INFIRMARY (GENERAL HOSPITAL).—House Surgeon for Ophthalmic and Ear and Throat Departments. Salary £50 per annum, with board and residence. Also House Surgeon for six months. Salary £30, with board, residence, and laundry.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, London, S.E.—Ophthalmic Surgeon.

GLOUCESTRESHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Senior House Surgeon. Salary £100 per annum, with board, residence, and washing.

HALIFAX COUNTY BOROUGH.—Schools Medical Officer. Salary £250 per

HALIFAX COUNTY BOROUGH.—Schools Medical Officer. Salary £250 per

HALIFAX COUNTY BOROUGH.—Schools Mannum.

HARTLEPOOLS HOSPITAL.—House Surgeon. Salary £100 per annum, with board, washing, and lodging.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—
Fourth Anæsthetist. Salary £15 15s.

HULL. ROYAL INFIRMARY.—Casualty House Surgeon. Salary at rate of £50 per annum, with board and lodging.

ITALIAN HOSPITAL, Queen-square, London, W.C.—House Surgeon for six months, renewable. Salary £50 per annum, with board and residence.

residence.

LEEK, STAFFORDSHIRE COUNTY ASYLUM, Cheddleton.—Junior Assistant Medical Officer. Salary £200 per annum, with board, apart-

tant Medical Officer. Salary £200 per annum, with board, aparaments, and washing.

LEICRSTER INFIRMARY.—Assistant House Physician. Salary at rate of £60 per annum, with board, apartments, and washing.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE, UNIVERSITY OF LIVERPOOL.—Medical Protozoologist.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon. Salary £100 per annum, with rooms, attendance, board, and washing.

MANCHESTER CHILDREN'S HOSPITAL, Gartaide-street.—Medical Officer (non-resident). Salary £180 per annum.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstea I and Northwood, Middlesex.—Senior and Junior Resident Medical Officers. Salary £175 and £75 per annum respectively, with board, residence, and washing. Also Clinical Pathologist. Salary 100 guineas per annum.

NEWARK-ON-TRINT HOSPITAL AND DISPENSARY.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, lodging, and laundry.

and laundry.

NEWCASTLE-UPON-TYNE CITY LUNATIC ASYLUM, Gosforth.—Junior Assistant Medical Officer, unmarried. Salary £140 per annum, with

Assistant Reducat Oncer, undarried. Salary 2140 per annum, with apartments, board, and laundry.

NEWCASTLE-UPON-TYNE DISPENSARY. — Visiting Medical Assistant. Salary £160 per annum.

NEW Hospital for Women, Euston-road, N.W.—House Physician and Resident Medical Officer (females). Also Clinical Assistant and Anæsthetist.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £170, with apartments, attendance, light,

and fuel.

OLDHAM INVIRMARY.—Second and Third House Surgeon. Salaries £100 and £30 per annum, with residence, board, and laundry.

PEMBROKESHIEE COUNTY COUNCIL.—Medical Officer of Health. Salary £400 per annum and travelling and other expenses.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Examiner in Midwifery Also a Member of the Court of Examiners.

ROYAL DENTAL HOSPITAL, Leicester-square.—Joint Morning House Anæsthetist. Salary £25 per annum.

ROYAL WESTMINSTER OPETHALMIC HOSPITAL, King William-street, Strand, W.C.—Clinical Assistants.

ST. MARY'S HOSPITAL, LONDON, W.—Surgeon in Charge of Out-patients. Salary at rate of £70 per annum, with board and spartments.

SOOTLAND, HARRIS PARISH.—Medical Officer. Salary £126 per annum, with free house.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £50 per annum, with board, lodging, and washing.

Salary £50 per annum, with board, lodging, and washing.

SUNDERLAND, MONKWEARMOUTH AND SOUTHWICK HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and language.

CLAYTON HOSPITAL.-Junior House Surgeon, unmarried.

WARFFIELD, CLAYTON HOSPITAL.—Junior House Surgeon, unmarried.
Salary £80 per annum, with board, lodging, and washing.
WARFFIELD, WEST RIDING ASYLUM.—Assistant Medical Officer. Salary £140, with apartments, board, washing, and attendarce.
WARWICK ASYLUM.—Assistant Medical Officer. Salary £150 per annum, with board, residence, laundry, &c.
WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician for six months. Board, lodging, and laundry allowance provided.
WEST SUFFOLK EDUCATION COMMITTEE.—Medical Inspector of School Children. Salary £250 per annum, with travelling expenses.
WESTERN GENERAL DISPENSARY, Marvlebone-road, N.W.—Junior House Surgeon. Salary at rate of £80 per annum, with board, residence, and washing.

WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Junior House Surgeon. Salary at rate of £80 per annum, with board, residence, and washing.
WHITECHAPEL UNION INFIRMARY, Vallance-road, N.E.—First Assistant Resident Medical Officer. Salary £130 per annum, with rations, apartments, coal, gas, and washing.
WINDSOR, KING EDWARD VII. HOSPITAL AND DISPENSARY FOR WINDSOR, EDWARD VIII. HOSPITAL AND DISPENSARY FOR WINDSOR.

WINDSOR, AING EDWARD VII. HOSPITAL AND DISPERSARY FOR WINDSOR, ETON. AND DISTRICT.—House Surgeon, unmarried. Salary £100 per annum, with residence, board, laundry, and attendance.
WISBECH, NORTH CAMBRIDGESHIRE HOSPITAL.—Resident Medical Officer. Salary £150 per annum, with unfurnished house.
WORKSOP DISPENSARY AND VICTORIA HOSPITAL.—Medical Officer and House Surgeon. Salary £150 per annum, with rooms, coals, gas, and attendance.

and attendance.

RK COUNTY HOSPITAL.—House Physician. Salary £100 per annum. with board, residence, and washing.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Clondalkin, in the county of Dublin; at Donington, in the county of Lincoln; at Wombwell, in the county of York; and at Slough, in the county of Buckingham.

Births, Marriages, and Deaths.

BIRTHS.

Graham.—On Nov. 4th, at Gwydir House, Mill-road, Cambridge, the wife of J. C. W. Graham, M.A., M.D., of a son.

MARRIAGES.

MARRIAGES.

Brown—Burgers.—On Nov. 6th, at All Saints' Church, Hove, by the Right Rev. the Bishop of Lewes (Dr. Hedley Burrows), assisted by the Rev. Canon J. S. Flynn, Vicar of St. John's, Hove, and the Rev. G. E. H. Theophilus, Vicar of St. James's, Tredegar, Horace George Brown, B.A. Cantab., M.R.C.S., &c., elder son of G. A. Brown, J.P., M.R.C.S., &c., Tredegar, to Muriel Evelyn Rosalie, eldest daughter of Mr. and Mrs. H. W. Burgess, of 24, Palmeira-square, Hove.

Lister-Hallowis.—On Oct. 9th, at the Union Church, Mussoorie, U.P., India, Captain A. E. J. Lister, M.B., B.S., F.R.C.S., Indian Medical Service, to Hester Isabel Knight, the younger daughter of Rev. J. F. T. Hallowes, M.A., and Mrs. Hallowes.

Walker-Le Breton.—On Nov. 4th, at All Souls Church, Langhamplace, London, Robert Wynne Stanley Walker, M.B., B.C., to Alice May, only daughter of C. M. le Breton, K.C.

DEATHS.

CLUTTON. -On Nov. 9th, at Portlant-place, W., Henry Hugh Clutton, M.C., F.R.C.S., Senior Surgeon of St. Thomas's Hospital, aged 59

Scott.—On Nov. 7th, at Burlington-road, Dublin, James Edward Scott, M.D., D.S.G. (late Surgeon-Major 4th Battalion Rifle Brigade), in his 85th year.

N.B.— A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

AN EIGHTEENTH-CENTURY ACCOUNT OF THE "SNAKE STONE."

THE remarks upon the treatment of adder bites which we have published recently have inspired a correspondent to forward us some eighteenth-century papers describing the virtues of the "snake-stone," together with an actual example of those curious bodies which were once held in widespread repute as a cure for snake-bites and as a panacea for many other disorders. These interesting relics of antique medicine were found by our correspondent whilst rummaging in an Basex manor house. There are two MSS. One is an old invoice addressed, "For the Reverd. Mr. Durham at Upmington, near Rumford," on the back of this document are scribbled three notes, which read, "Serpentine Stone (Cobra) Snake, &c. Lay it on"; "See Dr. Brockers Nat. Hist. p. 388, vol. 3. Kircher's China, Illustrated, p. 80, 1, 2, Piedro de Cobra. Ogilvy's Japan, p. 304"; and "Cousin Eliz. Jones in her D. room about a qr. before 3 oc. July 9, 1779." The other document, which has begun to crumble from age, is headed "The other document, which has begin to crumote from age, is needed "The wonderful virtues of the stone called Pietra di Cobra, which comes from the Indies," and is signed "Swinton, E., Coll. Wadh., Oxon., Aug. 29, S.V. 1732," with the date repeated under the address "Liburni." The following is an extract from the four closely written quarto pages, which are acknowledged to be "translated from the Italian original printed at Bologna and Foligno by Nicolo Campitelli, Ap. 1732 "

"This stone is called Pietra di Cobra by the Italians, because the Portuguese give it that name, by whom it is frequently brought into Europe. These are found in many provinces of the East Indies, but chiefly in the Province of QUAMSA (or QUANG-SI) in China, as likewise in several parts of Indostan, certain it is that in these parts lie hid serpents most venemous with hairy heads, which are therefore called SERPI CAPELLATI, which are wont to be gathered with great diligence by Hormus or solitary men which are those Anchorets which are called Jogues or Joquess, which are philosophers or priests of the Idolatrous Nations of those countries: and in the heads of these serpents is this stone found, which has virtues so wonderful, and which we are going to enumerate.

1. The colour of this stone approaches near a black. Some of them are spotted with a sort of Ash colour or pale grey: in order to know whether this stone is genuine or counterfeit you must apply it to your lips, and if it sticks close to them, and is not separated without great difficulty, you may rest assured that the stone is genuine.

2. If you apply this stone to the Bite of any Venemous Animal, that is to the Puncture or Wound made by it, it will immediately stick to the wound so as not to be easily disengaged from it, and after it has sucked out all the poison will of itself fall off, leaving the place intirely healed, and the poison perfectly cured. And if after the stone be taken off, or falls off from the wound, it be put in a little Wine or Water, and be left there for a small time, it will emit all the Poyson (into the said wine or water) and being washed, may be reserved for another occasion.'

The next eight sections describe how the stone may be used to cure the bites of vipers, scorpions, wasps, tarantulas, and mad animals, and swellings caused by pricking thorns; how it will draw the morbid matter out of "Scrophulous Eruptions, Pestilential Bubos, malignant humours, or any such like disorders"; how it may be pulverised and drunk to expel poisons from the "more noble parts of the body," and how it will cure the venereal disorders and has been applied with the greatest success in the cure of impotence, "a small incision being first made over the Gland (a very dangerous experiment) that the stone may be thereby made to attract the more strongly. The twelfth section warns those who use the stone to throw away the milk or wine in which they may wash it after use, as these liquids become highly charged with poison in consequence; the thirteenth describes its use in "malignant fevers and other scute violent dis-tempers" in the East Indies, and the document ends with references to the writings of Father Athanasius Kircher, the "Flora Sinensis of Father Michael Boim, the "Mercurius Brasilicus" of Father Valentine Stanzel, and to other works dealing with the subject.

The "snake-stone" found with this document, which has been sent for our inspection, is a thin oval body a little more than an inch long and three-quarters of an inch broad. It adheres to the lips to some extent when applied to them, but not very closely. It is of grey colour with dark streaks, is of light weight and polished surface, and has the consistency of horn. We believe that snakestones were as a rule made from stags' antlers from which the animal matter had been removed by heat, but this was not their only origin. It is quite certain that they never came out of the head of a serpent, in spite of the traditional belief, which was held well into the last Indeed, the curative virtues of the "snake-stone" not finally discredite; until 1867, when Dr. John Shrott of Madras performed some experiments which were reported in THE LANCET of May 11th of that year. He obtained six large cobras and made them bite parish dogs, the snake-stone being immediately applied to the wounds, a proceeding which did not prevent the speedy death of the animals. In the course of these experiments Dr. Shrott found that the poison of a cobra was soon exhausted by frequent biting, and this observation is supported by a letter from Dr. M. Amsier on a case of adder bite which we printed in our issue of Oct. 30th. A fairly complete account of the "snake-stone" is given in Buckland's "Curiosities of Natural History," a book which we commend to the notice of any who may be interested and who may not have access to the work of the learned Jesuit Father Athanasius Kircher, that attracted the attention of "Cousin Eliz. Jones in her D. room" 130 years ago.

SWIFTHAND.

Sir Edward Clarke has always been interested in shorthand writing, and two years ago he published a system of his own invention. however, has nothing to do with "Swifthand," which at the first glance reminds one of the ancient Irish writing known as the Ogham alphabet. On closer inspection it differs considerably: it is not so cumbersome. The author seems to have contrived what an ancient author is only said to have done-viz., made "a cypher and character so contrived that one line without turns or circumflexes stands for each and every one of the 24 letters and as readily for the one letter as the other." Sir Edward Clarke's "Swifthand," in which every word is written as spelled, has an alphabet composed of oblique straight strokes with the slope of ordinary handwriting. There are 11 such simple oblique strokes, 9 more oblique strokes with a little horizontal short stroke or dash (which look like the figure 7 or an inverted 7) prefixed or suffixed, and one oblique stroke with a small hook prefixed. In addition, there are four tiny strokes or dashes in various positions and one little semi-circle (the "u"), to represent the vowels a, e, i, o, u. These vowels could be represented by imagining a trident whose prongs, starting from the left, would be a, o, and i, and whose base is e. These lines are of varying length in relation to each other and are placed in various positions-viz., resting on the line, hanging from the line, above or below the line, and through the line. This necessitates an accuracy and neatness in writing Swifthand that may limit its popularity. It is astonishing how quickly one can read the words after a little practice with such simple signs. It is an interesting book and a fair practical trial is the only way to appreciate the system, which might be of service to medical men in recording cases

AN INJURED EASTERN INNOCENT.

A CORRESPONDENT has forwarded us a copy of the Calcutta Statesman of Sept. 25th last containing a letter written by Babu Takur Das Pal to the markets committee of the corporation.

My prayer is (says the writer) that I have a milk-shop at the above address. At this shop I sell milk adulterated with water. I sell it in the condition I buy it from the market, and I do not water it myself. But the Food Inspector unable to stop sale of adulterated milk in the market unjustly threatens me. I have, therefore, publicly put up a signboard stating that adulterated milk is sold in my shop. I submit this for your Honor's information that the Food Inspector may not oppress me when I am not committing an offence.

In commenting upon this amusing document the Statesman says :-

From a report by the Health Officer, it appears that no fewer than 28 signboards have been put up in the Jorasanko milk bazaar bearing the legend "Milk with water is sold here" or "Milk mixed with water." The exhibition of these boards precludes the prosecution of the vendors for selling adulterated milk. "We can only seize under Section 503 for the purposes of taking before a Magistrate," reports the Health Officer.

We are used to the notices of certain milk purveyors in this country stating that every effort is made to supply pure milk, but that no guarantee is given of its purity, and such notices are bad enough, but they are sweet reasonableness itself when compared to the impudence of this self-pitiful Babu.

THE TOXICITY OF THE DIFFERENT VARIETIES OF STROPHANTHIN.

Owing to the interest which has been lately aroused in the administration of strophanthin by intravenous injection it is opportune to refer to a paper by M. Pedebidon in the Comples Rendus de l'Académie des Sciences of July 26th, wherein it is pointed out that the various botanical species of strophanthus yield strophanthins of widely varying potency. Strophanthus Kombé yields a crystalline glucoside which kills a rabbit in doses of ½ milligramme per kilogramme of body weight, when administered by hypodermic injection. Strophanthus gratus also contains a crystalline glucoside, and these two varieties of strophanthin are alike in toxicity and in physiological properties. Strophanthus hispidus differs from the other varieties in yielding an amorphous glucoside which is only two-fifths as toxic as the crystalline varieties. During the past two years the amorphous strophanthin has been used and recommended in Germany for Mitravenous injection, and it is

important to remember that it is less toxic than the crystalline varieties, which are liable to produce disastrous results if given in equal doses. It is interesting to note that the glucoside obtained from strophanthus Kombé is the next higher homologue of ouabaine, while that from strophanthus gratus is identical with ouabaine. From experiments on animals M. Pedebidon has found that the strophanthin last referred to is 20 to 30 times as toxic when injected into the muscles as it is when given by the mouth, and 43 to 86 times as toxic when administered intravenously. He remarks that the drug is well tolerated when injected into the muscles or given by the mouth even in high doses, no cumulative effect being noted after repeating the dose every day for 40 days. He recommends that the intravenous method of administration should be used only in exceptional cases, giving preference to the other two methods, particularly favouring the administration of granules of the standardised extract of strophanthus by the mouth.

PROFESSIONAL AMENITIES.

To the Editor of THE LANCET.

SIR,—I am sorry if anyone's feelings were hurt by my use of the term "raw" in its sense of "unpractised" (in administration of anæsthetics). I claim that those who give anæsthetics should be trained to use them.

I am, Sir, yours faithfully,
Whitehall-gardens, S.W., Nov. 8th, 1909.

J. VINCENT BELL.

THE HOSPITAL GAZETTES.

Guy's Hospital Gazette (Oct. 30th) contains more than an echo of the present political noise. It seems that the hospital residents as a body have been writing to the daily press to disclaim the partisanship shown in the recent Bermondsey by-election by a group of Guy's students as representing the general feeling of the hospital, a letter which was prompted by the impression given by certain newspapers that the hospital was identifying itself with the interests of Dr. A. Salter, the Socialist candidate, who was a brilliant student of Guy's. The letter was resented by some of the students who supported Dr. Salter, as appears from the correspondence in this number of the Gazette, but is condoned by the editor. It is obvious that a corporation such as a hospital must be strictly non-political, and we have always thought that medical men taking any part in events of public moment outside their own professional interests had better do so as private individuals. We have known, for instance, a student to address a letter condemning scientific research to a public print upon notepaper bearing the name of his hospital—an obviously improper proceeding. Another column of the Guy's Hospital Gazette contains a report of a students' debate upon the Budget, the principles of which were "strongly disapproved" by 44 votes to 19. Mr. Arthur Todd-White breaks further political ground by an article advocating the establishment of a Ministry of Public Health.—The London Hospital Gazette (November) describes a farewell dinner to Mr. C. W. Mansell Moullin on his retirement from the active staff of the hospital, and gives a portrait of that popular surgeon. The Clinical Supplement contains a paper on Eclampsia by Dr. R. D. Maxwell, and in the body of the paper Mr. T. S. Rippon describes an appliance for holding the jaw forward during the administration of ether anæsthesia. A description of a Yeomanry field-day and no tes on various topics are other tion of a Yeomanry field-day and no tes on various topics are other features of an interesting number. — The Middlesex Hospital Journat (October) contains Dr. J. S. Goodall's Introductory Address on "Walking the Hospitals," an abstract of which we have published, articles on "A Visit to a Convict Prison" by Mr. A. C. Morson, and on "The Officers' Training Corps" (which has received such excellent support at Middlesex), by Mr. A. E. Johnson. A supplemental sheet gives a spirited picture of Captain J. Bland-Sutten presiding at a smoking concert of the Middlesex Company of the Corps. — St. Bartholomew's Hospital Guzette (October) also contains an article St. Bartholomew's Hospital Gazette (October) also contains an article on the Corps' work in camp, besides an excellent account of "The Relationship of the Consultant to the General Practitioner" by a professional Polonius, whose advice on the mutual behaviour of the two classes when the general practitioner's patients seek the consultant's advice without acquainting their usual adviser of their intentions is worthy of close attention. Other ethical subjects are discussed in the November number of the same journal. --- St. George's Hospital Gazette (October) contains Dr. H. D. Rolleston's opening address, which is concluded in the November number. -Hospital Gazette also prints the October discourse which was delivered at that school by Principal H. A. Miers, an address upon which the editor founds his leading article. In the correspondence columns a member of the Indian Medical Service utters a measured warning concerning the changed prospects of his service and the probable limitation of civil appointments for British St. Thomas's Hospital Gazette (October) presents a reminder of the late alleged summer in the form of a frontispiece portrait group of its cricket team, and an account of the Interhospital Final which won them the cup in July. An anonymous contributor holds an interesting conversation concerning "A Ride along an Old Road"—to wit, the Kentish portion of Watling Street. We notice that the editorial staffs of these several journals have returned for the session in an unusually serious frame of mind, for we have been unable to discover the usual store of quips and cranks with which they are wont to lighten the medical reviewer's labours, such, for instance, as the neat copy of verses entitled "The Students' Guide to Osler," which appeared over the initials "S. S. in Guy's Hospital Gasette for Oct. 2nd.

Swifthand, A New, Simple, and Rapid Method of Writing. Invented by the Right Hon. Sir Edward Clarke, K.C Loadon: Simplin, Marshall, Hamilton, Kent, and Co., Limited. 1909. Pp. 44. Price 1s.

"DR. GUILLOTIN." To the Editor of THE LANCET.

SIR,-In stating that Dr. Guillotin "had nothing to do with" the machine that bears his name, Dr. Watkin W. Jones probably bases his statement on the fact that in the proposal made by the doctor to the Constituent Assembly on Oct. 10th, 1789, no mention was made of any instrument. According, however, to M. G. Lenotre (La guillotine, &c., d'après les documents tirés des Archives de l'État), "the orator suggested the use of the machine which has since borne his name" at a subsequent meeting on Dec. 1st of the same year. "With my machine," he said to the Assembly, "I could cut off your heads in an instant, and you would feel no pain."

Concerning the origin of the idea, M. Lenotre adds that an engraving of Bocchi of 1555 has often been reproduced, and that similar machines were represented by Penez, Aldegrever, and Cranach. Several engravings of the kind are in my possession, but the earliest I have met with is a woodcut from a fifteenth century copy of the "Vita di Sancti Padri, reproduced in various editions of the "Catalogus Sanctorum." One of these, a Lyons impression, is described in my "Early Woodcut Initials," the cut in question serving to depict the mode of martyrdom of several different saints. I am, Sir, yours faithfully,

OSCAR JENNINGS.

MORALITY IN RELATION TO HEALTH.

To the Editor of THE LANCET.

SIR,-I notice that in your reference in the last issue of THE LANCET to the paper "Morality in Relation to Health," by the Hon. Albinia Brodrick, you give the name of the publishers of the pamphlet as "The Free Press" at this address. The name should be The Nursing Press, Limited, who would be much obliged if you would kindly mention this in your next issue. Thanking you in anticipation,

I am, Sir, yours faithfully,

B. H. BLAKELEY, Secretary,

(for) The Nursing Press, Limited. 11, Adam-street, Strand, W.C., Nov. 9th, 1909.

R. G. and Licentiate are referred to Dr. Vincent Bell's letter on the preceding page

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

BOYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

TUESDAY.

Pathological Section (Hon. Secretaries—L. S. Dudgeon, C. Bolton): at 8.30 p.m.

Ordinary Meeting.

DERMATOLOGICAL SECTION (Hon. Secretaries—E. G. Graham Little, H. G. Adamson): at 5 p.m.

Dr. Arthur Whitfield: Localised Sclerodermia.
And other Cases.

BLEOTRO-THERAPEUTICAL SECTION (Hon. Secretaries—Reginald Morton, G. Harrison Orton): at 8.30 p.m.

Dr. Reginald Morton: The Treatment of Nævi and other Cutaneous Lesions by Electrolysis, Cautery and Refrigera-tion, with a Demonstration on the Use of Solid Carbon Dioxide.

N.B.—Fellows of the Society are entitled to attend and to speak at all Meetings.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish-square, W.

FRIDAY.—8.30 P.M., Dr. W. Thomas: (1) Œsophagostomiasis in Man (with specimens); (2) The Results of Experiments on Apes, Monkeys, Guinea Pigs, &c., when inoculated with Virulent Blood of Yellow Fever Cases or by the Bites of Infected Stegomyia calopus; (3) Mossy Foot of the Amazon Region (with microscopic specimens); (3) Notes on Stimson's Spirschate Found in the Kidney of a Yellow Fever Case. (With epidiascope demonstrations.)—Paper (with specimens) will be read for Dr. J. Numa Rat, St. Kitts, W.I., on the So-called Guinea Worm of the Island of Nevis.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

Monday.—4 P.M., Dr. J. Galloway: Clinique (Skin). 5.15 P.M., Lecture:—Dr. J. L. Bunch: Tubercular Diseases of the Skin and their Treatment.

TUENDAY.—4 P.M., Dr. C. T. Williams: Clinique (Medical). 5.15 P.M., Lecture:—Dr. W. Griffith (Leeds): On some Cases and Specimens of Unusual Diseases of the Heart.

WEDNESDAY.—4 P.M., Mr. T. P. Legg: Clinique (Surgical). 6.15 P.M.. Lecture:—Mr. Arbuthnot Lane: Operative Treatment of Fractures.

THURSDAY.—4 P.M., Sir Jonathan Hutchinson: Clinique (Surgical).
5.15 P.M., Lecture:—Dr. F. Warner: Backward Children and their Training.

FRIDAY .- 4 P.M., Mr. H. L. Eason: Clinique (Eve).

POST-GRADUATH COLLEGE, West London Hospital, Hammersmith-

Monday.—10 a.m., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 p.m., Medical and Surgical Clinics. X Bays. Mr. Dunn: Diseases of the Byes. 2.30 p.m., Operations. 5 p.m., Lecture:—Mr. Baldwin: Practical Surgery.

TUESDAY.—10 A.M., Dr. Moullin: Gynscological Operations. 12.15 p.m., Lecture:—Dr. Pritchard: Practical Medicine. 2 p.m., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 p.m., Operations. Dr. Abraham: Diseases of the Skin. 5 p.m., Lecture:—Dr. R. Morton: X Ray Examination of the Digestive System (illustrated by lanters shides). trated by lantern slides).

trated by lantern slides).

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children.
Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 P.M.,
Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical
and Surgical Clinics. X Rays. Mr. B. Harman: Diseases of
the Ryes. 2.30 P.M., Operations. Dr. Robinson: Diseases of
the Ryes. P.M., Lecture:—Dr. Beddard: Medicine.

TRUBSDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration
of Cases in Wards. 12 noon, Pathological Demonstration:—
Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays.
Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M.,
Lecture:—Mr. Keetley: Stiff Joints.

FRIDAY.—10 A.M. Dr. Moullin: Gyngeological Operations. Medical

REIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. Medical Registrar: Demonstration of Cases in the Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. S. Taylor: A Common Cold.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Mr. B. Harman: Diseases of the Eyes. Dr. Davis: Diseases of the Throat, Nose, and Bar. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. 2.30 P.M., Operations.

LONDON SCHOOL Hospital, Greenwich. SCHOOL OF CLINICAL MEDICINE, Dreadnought

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4 P.M., Special Lecture:—Mr. R. Lake: Testing the Kar for Deafness.

Tuespay.—2 p.m., Operations. 2.15 p.m., Dr. R. Wells: Medicine. 3.15 p.m., Mr. Carless: Surgery. 4 p.m., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A m., Surgical and Medical. 12 noon, 8kin.

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WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 a.M., Surgical and Medical. 11 a.M., Eye. 2.15 P.M., Special Lecture:—Dr. F. Taylor: Cirrhoeis of the Liver.

URSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. THURSDAY .-

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical, 12 noon, Skin. 2.15 P.M., Special Lecture:—Dr. R. Bradford: Nephritis.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Walco's General Hospital, Tottenham, N.

Monday.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Evans), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson). 4.30 P.M., Medical In-patient (Dr. A. J. Whiting).

TUERDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld).
2.30 P.M., Operations. Clinics:—Surgical (Mr. W. Edmunds);
Gynæcological (Dr. A. E. Giles). 4.30 P.M., Lecture:—Mr. J. H.
Evans: Conditions of the Male Bladder which Produce Bleeding.

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. H. Pirie).

J. P.M., A. Rays (Dr. II. Pirle).

Thursday.—2.30 p.m., Gynacological Operations (Dr. A. B. Giles).
Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical
(Mr. Carson). 3 p.m., Medical In-patient (Dr. G. P. Chappel).

Friday.—10 a.m., Clinic:—Surgical Out-patient (Mr. H. Bvans).
2.30 p.m., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Eye (Mr. B. P. Brooks). 3 p.m., Medical In-patient (Dr. R. M. Leslie).

NATIONAL HOSPITAL FOR THE PARALYSED AND RPILEPTIC. Queen-square, Bloomsbury, W.C.

TUESDAY .- 3.30 P.M., Clinical Lecture: Dr. Ferrier.

FRIDAY .- 3.30 P.M., Clinical Lecture :- Mr. L. Paton : Optic Neuritis.

HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.

THURSDAY.- 4 P M., Lecture (Medical):-Dr. Thompson: Pyelitis in

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Innroad, W.O.

TUESDAY.—3.45 P.M., Lecture:—Dr. J. Atkinson: Nose. FRIDAY.—3.45 P.M., Lecture:—Dr. D. McKenzie: External Har.

TEST-END HOSPITAL FOR DISHASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W

MONDAY.—3 P.M., Clinical Demonstration: Dr. H. Campbell. Tuesday.—5 p.m., Clinical Demonstration:—Dr. J. Mackenzie. WEDRESDAY .- 3 P.M., Clinical Demonstration :- Dr. F. Palmer. THURSDAY.-3 P.M., Clinical Demonstration:-Dr. T. D. Savill. FRIDAY.—2 P.M., Clinical Demonstration:—Dr. P. Stewart. 5.30 P.M., Clinical Demonstration: Dr. E. Macnamara.

ST. JOHN'S HOSPITAL FOR DISRASES OF THE SKIN, Leicester-

THURSDAY.—6 P.M., Chesterfield Lecture:—Syphilis: Treatment (Constitutional and Local in all its Forms).

OPERATIONS.

METROPOLITAN HOSPITALS.

METROPOLITAN HOSPITALS.

**BONDAY (18th).—London (2 p.m.), St. Bartholomew's (1.30 p.m.), St. Thomas's (3.30 p.m.), St. George's (2 p.m.), St. Mary's (2.30 p.m.), Middlesex (1.30 p.m.), Westminster (2 p.m.), Chelsea (2 p.m.), Semaritan (Gynseological, by Physicians, 2 p.m.), Soho-square (2 p.m.), City Orthopædic (4 p.m.), Gt. Northern Central (2.30 p.m.), West London (2.30 p.m.), London Throat (9.30 a.m.), Royal Free (2 p.m.), Guy's (1.30 p.m.), Children, Gt. Ormond-street (9 a.m.), St. Mark's (2.30 p.m.).

TUENDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Goldensquare (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Bar (Minor, 9 A.M., Major, 2 P.M.),

Central London Threat and Bar (Minor, 9 A.M., Major, 2 P.M.).

WEDMESDAY (17th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), Rational Orthopsedic (10 A.M.), St. Peter's (2 P.M.), Samartin 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Guy's (1.30 P.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Bar (2 P.M.), Royal Orthopsedic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Bar (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (18th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), Motth-West London (2 P.M.), Gt. Northern Central (Gynscological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M.), Royal Orthopsedic (9 A.M.), Royal Bar (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynscological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Bar (Minor, 9 A.M., Major, 2 P.M.),

PRIDAY (19th).—London (2 P.M.). St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Oross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Ohelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopsedic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Kar (Minor 9 A.M., Major, 2 P.M.).

EATURDAY (20th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Hye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 11th, 1909.

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Nov. 5 6 7 8 9 10 11	30·17 30·06 30·16 30·28 30·28 30·28 29·99 30·19	E. R. N. N.E. S.W. W. N.W.	•••	55 80 73 70 68 53 65	52 55 47 49 50 48 45	45 42 42 39 33 34 38	46 42 45 39 34 40 37	46 43 47 40 34 42 39	Foggy Cloudy Fine Foggy Fine Fine

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An Address

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MALARIA IN INDIA.

Delivered at the Opening of the Malaria Conference, Simla, October, 1909,

By J. T. W. LESLIE, M.B. ABERD., C.I.E., LIEUTENANT-COLONEL, I.M.S.; SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA.

GENTLEMEN,—Before beginning the regular business of this Conference it seems to be desirable that you should have before you a rough sketch of the position of the problems of which we are to endeavour to find some solution -namely, the reduction of the amount of malarial infection in India and the mitigation of the results of infection. A reference to any recent Report of the Sanitary Commissioner with the Government of India will show that out of a total number of 8,000,000 deaths recorded during the year 4,500,000 were registered under the heading "fever." Many people assume that all these fever deaths are due to malaria, but a very cursory examination of the details of the statistics will show that this assumption is erroneous. If, for instance, we turn to the statistics recorded in Sind in 1907, we find that the total death-rate was 22.4 per 1000, including a death-rate from fever of 19.2. If all the deaths which appear under the heading "fever" had been due to malaria, all the other diseases to which flesh is heir caused only 3.2 deaths in every 1000 of the population. This is obviously absurd. If we now look at the statistics of Karachi for the same year we find that the total death-rate—unhappily very high owing to the prevalence of plague—was 49 per 1000, including a death-rate from fevers of 7 per 1000. As a matter of fact, the registration of vital statistics in India, except in a few of the towns, is carried out by means of an illiterate agency, and although in many provinces the total figures are surprisingly correct the registered causes of death are always very misleading. The heading "fever" represents pneumonia, tubercle of the lungs, diseases of the kidneys, and, indeed, all the so-called medical diseases, except diseases like cholera and small-pox of which the distinctive signs are unmistakeable by the people themselves. The total number of deaths registered under the heading "fever" is remarkably constant from year to year, the figure being a little short of 4,500,000, and the mean death rate rather less than 19.5 per 1000. During the last ten years death-rates have been raised owing to plague, but we may say that if, in a given year, the total Indian death-rate was 35 per 1000, four-sevenths of it, or 20 per 1000, would be ascribed to fever.

The question that at once occurs is, "What proportion of this death-rate of 20 per 1000 is due to malaria?" and obviously, in the circumstances in which deaths are registered, this is an exceedingly difficult question to answer with any degree of accuracy, but from the indications afforded by certain special inquiries, from the dispensary reports, and other sources, it has been estimated for the whole country at about one-fourth—that is to say, the mean death-rate from malarial fevers in an ordinary year, and taking the country as a whole, is about 5 per 1000. This means that in an ordinary year malaria causes about 1,130,000 deaths, and as in such a year it is not a very fatal disease, this number of deaths represents an enormous amount of suffering and loss of labour, often at the time when labour is of most value. It is impossible to judge of the amount of suffering or to frame an estimate of the economic loss, because we have no trustworthy data regarding the degree of fatality of the disease among the people. A rough idea of the extent to which death from malaria is preventable in India may be formed from a study of the effects of the disease in the Native Army and in jails, but, of course, in any comparison of the statistics referring to soldiers and prisoners with those of the general population, we must not omit to make allowance for the age and sex constitution of the populations compared, and for the peculiarly favourable conditions in which preventive measures act among bodies of men under skilled control.

The Native Army consists of picked men, who, when they are with their regiments, are looked after carefully in health No. 4499

and skilfully tended when sick. The admission and deathrates ascribed to malaria have declined in recent years, but during each of the 10 years ending with 1907 it may be said that 3 men in every 2000 died from its effects. Prisoners are greatly inferior to soldiers in physique, and they are subject to the depressing effects and monotonous routine of jail life. Moreover, there is a continuous flow into and through the prisons of individuals, many of them infected with malaria, taken from the lowest and poorest ranks of society. Still, far more stringent measures of prevention are possible in jails than in regimental lines, and the results are consequently better, so far as malaria is concerned. In each year of the decennium on an average 4 prisoners in each 3000 died from malarial fever.

When the deaths ascribed to malaria in the jails are closely investigated, it is found that in a considerable proportion of the cases death was due to a cause other than malaria, so that the mean death-rate of the ten years, which on paper is 1.30 per 1000, is in fact only about 1 per 1000—that is to say, the death-rate among prisoners from malarial fevers is about one-fifth of what it is among the general population. A comparison of a death-rate among prisoners with that among the general population is misleading owing to the numbers of children and old people among the latter, but preventive measures are by no means perfect in the prisons, and perhaps we may say that if we could place all the people in fairly good hygienic conditions, give them prophylactic doses of quinine during the fever season, and provide them with suitable food and skilled attendance when they are attacked, we should prevent three-fourths of the deaths from fever that now occur. This is perhaps rather speculative—certainly there are a good many "ifs" about it. Our experience in prisons does show this, malarial fever properly treated is by no means a fatal disease among adults. Last year (1908) malarial fevers were extraordinarily prevalent and fatal in North-Western India. During the year there were 20,039 cases of fever admitted into the jail hospitals throughout the country, and only 105 of those cases terminated fatally. Assuming that all the 105 died from malaria, which the post-mortem records show was by no means the case, this means that only 1 in 191 cases of fever ended in death, and this in a year when the fever was peculiarly deadly. Contrast this with the state of affairs among the general population in the United Provinces in 1908, when 1 person in every 24 died from fever—in that year mostly malarial. Why is it that a disease which is so rarely fatal to a prisoner should be so often fatal to a free man?

A very large fraction of the total mortality from fever among the general population occurs among children and the aged, and in epidemic years they suffer disproportionately, because in such years, for reasons which I shall presently mention, they have to suffer from privations which loosen their feeble hold on life. In the Punjab in 1908 the infantile death-rate from fever was doubled and the fever death-rates among children between the ages of 1 year to 10 years of age were more than doubled. While due allowance must always be made for the share of the total mortality occasioned by malaria among the very young, it seems to me that, in normal years at any rate, there is sometimes a danger of exaggerating it, for it is not uncommon to find practically all the deaths occurring in infancy attributed to malarial fevers. Now we know that, in temperate climates, where there is no malaria, the mortality in infancy, even in favourable circumstances, is high; and in a tropical or sub-tropical country with a very high birth-rate we cannot expect children to escape the effects of malnutrition, bowel complaints, parental ignorance, and other special dangers of childhood.

In normal years I believe many of the deaths which result from malarial fevers are directly due to the treatment, or rather want of treatment, of the eases. I do not refer to the neglect of medicinal remedies, but to the withholding of food. In this country and in some others it is an article of popular superstition that a fever should be starved and the sufferer and his friends believe that the taking of food brings on the attack of fever. Too often it is the sufferer that is starved and not the fever. In any place in which malaria exists meteorological conditions may determine a severe epidemic of fever, when the disease becomes not only much more common, but enormously more fatal than in ordinary years. When heavy rains precede a severe outbreak of fever they

cause floods, when large tracts of country are submerged, houses collapse, harvests are destroyed, and the poorer classes of the peasantry are not only thrown out of employment but are exposed to great privation and hardship. It is then that the mortality among children and the aged is so highmalaria, owing to the simultaneous occurrence of exposure and privation, has become a very fatal disease. obvious considerations, but there are others which have not yet been fully elucidated. The floods, of course, produce lasting pools of water in which mosquitoes breed, but a feature of these autumn epidemics is the suddenness of their onset, which, it seems, can be accounted for only by large numbers of mosquitoes being very rapidly infected.

In the towns in India, as in other countries, there are numbers of people who lead a hand-to-mouth existence; ill-housed, ill-clad, and ill-fed, they pick up a precarious livelihood in the unskilled labour market. Such people have unsuitable food at the best of times, and they have no savings, so that when anything occurs to check the demand for such work as they can do, the scanty coarse food becomes scantier and coarser and they and those dependent on them offer little resistance to malarial infection and readily succumb to its effects. Analogous conditions, as pointed out by Christophers and Bentley, may be artificially produced in any area in which anopheles mosquitoes can breed, when large numbers of labourers are collected in it under bad hygienic conditions. The majority of such labourers are free from infection, but are highly susceptible to it, a few are infected, and all are dependent on their daily labour for their daily bread. Infection spreads, and with it the inability to earn money to pay for sufficient food, privation added to malaria determines a severe attack, attacks are repeated, and here again the disease is a very fatal one.

The cause of malaria is a sporozoan parasite of which there are three species generally recognised. These parasites pass the sexual phase of their lives in certain mosquitoes and the asexual phase in the blood of man. The important fact in respect of the prevention of malaria is that in nature the parasites occur in both hosts and, so far as is known, nowhere else. Preventive measures are founded on this fact and have for their object the destruction of the insect host, the prevention of the transference of the parasites from one host to another, or the destruction of the parasites in the blood of man. It is unnecessary to enumerate in detail the devices which have been used to effect these objects; they all may, I think, be classified under three heads: (1) the extermination of mosquitoes; (2) the prevention of bites; and (3) the administration of quinine. The prevention of bites is useful as a supplement to more radical measures, but so far as this is effected by wire gauze screens and mosquito curtains, which are expensive and require careful handling, the use of the measure must be limited to the wealthier

Much, I believe, could be effected by improving the design of living rooms and dormitories. It seems obvious that a well-ventilated, white-washed room will afford less shelter during the day to mosquitoes than a dark, dingy room. Anointing the body with substances offensive to mosquitoes is useful on occasion. Of the two radical measures, one aims at the extirpation of mosquitoes by abolishing their breeding-places or destroying the eggs, larvæ, or mature insects; the other aims at destroying the sporozoon by the administration of quinine, and there has been much controversy regarding the merits of the two measures. It has always seemed to me to be unfortunate that so many of the writers who contribute their views on this controversy to the public press have not been at the pains to study the original accounts of the experiments on which any opinion of value must be based The consequence of so much wild writing has been to confuse the issue, and not only the intelligent layman, but even medical men have been led astray.

It is obvious, if malaria is due solely to the bites of anopheles mosquitoes, that the extirpation of these mosquitoes will abolish malaria. It will be admitted by everybody that the continuous use of quinine, even for a short time during the year, is inconvenient and unpleasant to the individual and difficult to carry out among a community. It is therefore evident that the best way to get rid of malaria is to destroy the mosquitoes. The only questions are, can it be done? and, if it can, at what cost? It has been successfully done at Ismailia, but in conditions which were extraordinarily favourable, such as, I fear, occur very rarely, if they occur

at all, in India. Ismailia was built about 35 years ago by the Suez Canal Company as a model town. It is situated on the shore of the bitter lake Timsah with the desert behind it. The water-supply is derived from the fresh water canal.

In his report to the Liverpool School of Tropical Medicine, published in January, 1903, Major Ross pointed out that almost the whole of the irrigation system of Ismailia is free from larvæ and is unfavourable to their propagation, and that "the waters which really occasion malaria are the most shallow and insignificant surface pools, which could be filled up and drained away without difficulty and without detriment to cultivation or irrigation"; indeed, he remarked, "mosquitoes can be extirpated with great facility at Ismailia, in fact, with much greater facility than in any other town I have seen." Fever is said to have appeared in Ismailia in 1877, but it was never severe, and only three or four pernicious attacks had occurred from the commencement of the epidemic until 1902. Major Ross says: "The illness does not appear to be of such a severe type as I have met with in parts of India and Africa, and no deaths have been reported." The population of the town is 7000 or 8000; the Canal Company is the controlling force everywhere; there are no prejudices to overcome, there is no lack of money; the soil is sandy and the rainfall averages less than 2 inches in the year. Compare these conditions with those of any malarious town you know in India. The Ismailia experiment proves that the extirpation of mosquitoes to a degree sufficient to abolish malaria is possible, and so far it is a valuable lesson to Indian administrators, but surely it is futile to say that because success was achieved at Ismailia it should be achieved in the same manner in Indian towns. have said nothing of the expense.

We may now turn to a place where operations against mosquitoes were less successful-Mian Mir. This cantonment was deliberately chosen by the Royal Society's Commissioners, to whom Major James was attached as a representative of the Government of India: (1) because malaria was prevalent in it; and (2) because it was thought that the conditions for the destruction of mosquitoes were favourable. The Royal Society's Commissioners' experience in Africa had led them to doubt the practical value of operations against mosquitoes in the moister regions of the world, but they thought that such operations would be successful in the semi-desert conditions of Northern India. Mian Mir differs from Ismailia in most particulars, two of which are of special importance—the soil is impervious and the rainfall averages about 22 inches. The first year's (1902) operations were carried out by Major James. His conclusion was that "mosquito destruction, if it can be carried out successfully, will effectually banish malaria," and "the chief drawback to mosquito destruction is its difficulty and expense." second year's (1903) operations were carried on by Captain Christophers. His conclusions were:

The destruction of anopheles within an area by attacking their breeding places is extremely difficult. Although large numbers of pools were filled up and drained, and millions of larvæ destroyed by oil, adult anopheles were still abundant.

The mere obliteration of local breeding-places is useless. In Mian Mir almost complete absence of breeding was ensured to a distance of over half a mile, but adults still appeared in large and increasing

over nair a mile, out addits som appeared in large and increasing numbers in the area.

A distinct effect was produced upon the malaria of troops and on the endemic index of the bazaars. This was, however, only evident in the beginning of the fever season, and could not be maintained.

The failure of the operations appeared to be due to the passage of adult anopheles into the area from without.

A great deal was learned from the operations in Mian Mir. Before they were undertaken it was thought that fevercarrying mosquitoes bred in still pools of water, and could fly at most for a few hundred yards. It was discovered at Mian Mir that fever-carrying mosquitoes breed not only in pools but in running water, and that they can fly for half a mile; consequently such operations as can be carried out by a mosquito brigade were of very little use in Mian Mir. The critics of the operations did not, however, pause to consider matters of this kind. "Why," they said, "did you limit your operations to an area of four miles?" "What," they continued, "is the use of filling up and oiling puddles when there are channels of running water in which anopheles breed?" It seems to me that this was hardly fair.

The second phase of the Mian Mir experiment began with the extensive works undertaken by the military authorities; the results obtained will. I hope, be fully examined elsewhere. Before leaving Mian Mir there is one matter to which reference must be made. It has been said that the failure of the operations at Mian Mir has led to the neglect

of anti-mosquito work in India. I do not think this is the case. All the Mian Mir experiment showed was that success in operations against mosquitoes is not so easily gained as some people say, and no one who reads the excellent reports by Major Ross on the work at Ismailia and by Major James and Captain Christophers on the work at Mian Mir will deny that this is correct. During the last 10 years the energies of local governments and municipalities have been very fully occupied in dealing with plague, and less money has been available for the prevention of malaria than might otherwise have been the case. But a great deal has been attempted. If we have erred in giving too much attention to quinine prophylaxis and too little attention to mosquito destruction we have erred in the best company. Professor Angelo Celli of Rome, whose experience is greater than that of anyone else, at any rate in Europe, finds that, although the destruction of mosquitoes is possible in the laboratory and in small areas, the difficulties in extensive areas are generally insuperable.

Important information regarding malaria in villages was obtained by the Drainage Committee appointed by the Government of Bengal in 1906 to inquire into the conditions of the drainage of the Presidency Division and their connexion with malaria. Captain Stewart and Lieutenant Proctor of the Indian Medical Service were the experts appointed to assist the committee. In the districts of Jessore, Nadia, and Murshidabad they found that malaria as estimated from the spleen rates of children under 12 years of age, was, on an average, much less prevalent in villages situated on the banks of live rivers and on dry land than in villages situated on the banks of dead rivers or bheels, while in villages surrounded by thick jungle the spleen rate (68.8) was more than twice as high as that (26.2) in villages with little jungle around them—the effect of the thick jungle being to afford shade from the sun and check the evaporation of water from small hollows in which mosquitoes breed.

The success or failure of minor operations against mosquitoes appears to me to depend upon the state of the drainage. Where drainage is perfect, as in the case of Ismailia, the inhabitants can exterminate mosquitoes with little trouble; but where drainage is non-existent or bad, as at Mian Mir, it is practically impossible, by any means at present within their reach, for the inhabitants to destroy the mosquitoes. In any scheme, then, which has for its object the removal of malaria from an area, the first step is to ascertain the condition of the drainage and, if it is imperfect, how it can be improved so as to prevent waterlogging of the soil, not only in ordinary seasons, but in seasons of extraordinary rainfall. In the drier parts of India it seems it is abnormally heavy rainfall that is the danger. Last year in the west of the United Provinces the monsoon rainfall was about normal, but all the rain fell in two months, and fever was severely epidemic; in Berar the monsoon rainfall was 24 per cent. in excess, but it took nearly four months to fall and fever was less prevalent than usual. Drainage schemes are costly and they require a long time to carry out, even when the funds are available, and in the meantime the choice must often be made between measures against mosquitoes and the administration of quinine-unless. as may often be the case, it appears to be advantageous to use both these measures.

In making the choice all the circumstances of the case must be taken into consideration. To take extreme examples. If we have a town containing a few pools which are the only sources of the anopheles mosquitoes infecting the inhabitants, it is obvious that the remedy is to drain or fill up the pools. If we have a small village surrounded by a swamp in which anopheles breed, it is evident that quinine prophylaxis is the best remedy. In India we have all the gradations between these two extremes, but those approximating to the village in the swamp are in the enormous majority. An obstacle that has stood in the way of quinine prophylaxis is the doubt entertained by the general public and some members of the medical profession of its efficacy. This doubt is in most cases founded upon experience-medical men have found persons who have apparently been regularly taking quinine get fever, and most practitioners have come across cases in which quinine seemed to fail to cure malarial fever, while instances are not uncommon in which the results of quinine prophylaxis in a community have been exceedingly unsatisfactory. Sometimes the cause of failure is not far to seek—the drug has not been taken at all, the dose has been

There are other too small, or it has been taken irregularly. instances, however, that are by no means easy to explain, and whoever has studied the recent researches into the fate of quinine in the animal body will recognise how thickly beset with difficulties the subject is and how great is the necessity for further research, particularly in this country, which differs so widely from Europe in respect of the food of the people, metabolic changes, and conditions of climate. It is possible that a race of malarial parasites that is immune to quinine may be developed. Fresh-water amoebse may be gradually habituated to salt water, the infusorian Stentor kept in a weak solution of corrosive sublimate becomes tolerant of a solution containing four times the quantity of the poison that is fatal to stentors taken from pure water. Trypanosomes frequently develop in an animal being dosed with atoxyl a race of trypanosomes that is immune to that drug, and they produce descendants in a new animal host which retain this immunity. Giemsa and v. Prowazek succeeded in obtaining races of Colpidia that could live in fairly strong solutions of quinine. The parasite of malaria is far more closely adapted to its normal surroundings than the protozoa I have mentioned, but it seems possible that quinine-fast plasmodia may be produced, and we may speculate regarding the nature of such an immunity and whether it would be retained after sexual reproduction and passage into a new human host. Men infected with a quinine-fast parasite would be in an unhappy position.

It appears, however, that the prejudice against the use of quinine as a prophylactic entertained by a few medical men is hardly logical. If it is admitted that quinine is the remedy for malarial fever and that it acts by killing the malarial organisms-propositions which few medical men will be found to deny-it is surely reasonable to believe that it will be as useful as a preventive as it is as a cure. When it is realised that it is fatal to the vegetative form of the parasite, but may be ineffectual against the sexual forms, it will be admitted that it is even more useful as a preventive than as a cure. There is much evidence accumulated in this country to show that quinine swallowed regularly in sufficient doses is very nearly a complete preventive of malarial infection, or at any rate of the clinical manifestations of malarial fever. The most striking evidence of the kind is afforded by Colonel Braide's experiment in the Punjab in the autumn of 1908. The use of quinine as a prophylactic was introduced into the Punjab jails many years ago by Colonel Bate, and its use in them has been continued with ever-increasing stringency and success. Colonel Braide attempted an experiment on a great scale in 1907, but he failed to get his orders properly understood, and it was certainly fortunate that his great experiment was reserved for the autumn of 1908, almost the most malarious in the history of the Puniab. During the four months August to November, 1908, every prisoner on admission to jail was given 10 grains of quinine in the presence of the medical superintendent, and thereafter received 15 grains once a week. The results were very remarkable. The admission rate from malaria, including in it the rate on account of "pyrexia of uncertain origin," was 173.5 per 1000, the lowest on record, and the malaria deathrate of the year was the lowest with one exception. That this result was not contrived by classifying cases of malaria under some other disease heading is evident when the general admission rates from all diseases are studied. In 1908 this rate was 581.2 per 1000; in 1907 it was 706.8; and the mean of the five years ending with 1906 was 890 5. success of this kind justifies a very critical examination of any reported failure.

I have laid stress upon the danger of comparing the statistics respecting the inmates of our prisons with the statistics of the general population, and I think it would be just as unsafe to believe that because quinine prophylaxis may, with considerable difficulty, be made a complete success in prisons it will be equally successful among the people. The prisoners are under great advantages, their lives are regularly ordered, they are well housed, well fed, protected against the vicissitudes of the weather, and rarely undergo any exceptional bodily exertion. Quinine is given to them systematically in sufficient doses under supervision, and when they are attacked by fever every means is used to ensure the quinine acting at an advantage. Among the general public many know that quinine is a remedy for malarial fever, and are eager to get it when they are suffering, but many are prejudiced against it, and probably the majority have never heard of it. We shall therefore have to take means to bring the advantages of quinine before all those who live in malarious places, and not only eradicate prejudices, but educate the people to use the quinine in sufficient quantity and at the right time. I fear these will prove to be very hard tasks. The best preparations for the use of adults and children will have to be selected, and probably much will depend upon the way in which the drug is dispensed. The correct dose must be determined, and I think it would be of advantage to issue the drug in tablets or powders equal to the minimum dose sufficient for prophylactic purposes, with directions that the single dose should be repeated a certain number of times at specified intervals as a cure.

It is essential, I think, that it should be recognised that the distribution of quinine cannot be made self-supporting, and in view of economy, if for no other reason, very careful inquiries will be necessary regarding the needs of different localities. In many places no quinine is necessary at all; in others it is required only for a short time in certain years; in others it is required every year, but only at a certain season, and in yet others there is need for its continuous use. It is clear, therefore, if we are adequately to carry out the distribution of quinine on a great scale, that special provincial agencies will have to be established for the work. The distribution of quinine is one of the questions with which this conference is specially to deal, so that it is not necessary to do more than mention some of the more important matters to be settled. Although our knowledge of the etiology of malaria and its treatment is fairly extensive, it is still wanting in continuity and completeness, and the scientific study of its epidemiology is only beginning. Some of the gaps in our knowledge regarding the possibilities in the life cycle of the parasite must be filled before we can hope to master the epidemiology of the disease to which it gives rise, and we cannot devise the simplest and best preventive measures until the epidemiology is thoroughly understood. As I have endeavoured to indicate, we have little exact knowledge of the distribution of malaria in the country, of the local conditions which favour it, and of the best means to render these causes inoperative. think the time has come when we should establish a permanent organisation for dealing with malaria in India.

It will be evident that the defects in our knowledge may be classified as follows: (1) questions of administration—e.g., the best agency for the distribution of quinine; (2) questions that can be solved by experts on the spot—e.g., the causes of disease and death and the distribution of malaria in a district; and (3) questions that can be solved only by highly trained experts with the resources of a well-appointed laboratory at their disposal.

The organisation I would propose is the following-

1. A committee in each province of three or more members personally interested in the malaria problem, enjoying the confidence of the local Government, and prepared to obtain information and supervise local inquiries. They should, perhaps, control the agency for the distribution of quinine. One of their first duties would be (in association with the provincial sanitary department) to ascertain the real causes of death in different localities, and to set in motion an inquiry in each district regarding the relation of the fever season to the drainage and rainfall.

2. Every autumn each provincial committee would delegate, under the orders of the local Government, one of their members to attend a meeting of a general committee in Simla. This general committee would consist of the provincial delegates, the Sanitary Commissioner representing the Government of India, with Major James as secretary.

3. The Government of India would appoint a scientific committee consisting of Lieutenant-Colonel Semple, Major James (secretary), Captain Christophers, and the Sanitary Commissioner, with power to add to their numbers.

A certain number of workers would be entertained under the Scientific Committee, and, when necessary, workers might be deputed to serve under the provincial committees. Such workers during the time of their deputation would, of course, be under the control of the local committee, but, in order that the purpose of the whole organisation should not be defeated, relations of mutual confidence would exist between the central and local committees, and there would be free interchange of views, not only on the occasions of the annual meeting, but by means of correspondence at all times.

3. Clinical Lecture

MYOTONIA ATROPHICA.

Delivered at the National Hospital for the Paralysed and Epiloptic, Queen-square, on Oct. 26th, 1909,

By FREDERICK E. BATTEN, M.D. CANTAB., F.R.C.P. LOND.,

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GENTLEMEN,—The name "myotonia atrophica" will probably to most of you call up no clinical picture, and my endeavour will be to put before you the symptoms of this condition, so that you may have as clear a mental picture of this malady as you have of tabes or disseminated sclerosis. The name "myotonia congenita" has been applied to the disease originally described by Thomsen, and is often known as Thomsen's disease. The striking feature of that disease is that on attempted voluntary movement the contraction of the muscle which the patient wills to move is slower than normal, and that relaxation is also slow, so that the limb remains in a fixed position. The contraction is so strong that the antagonistic muscles cannot overcome it. If a certain voluntary movement is repeated several times the difficulty as regards movement becomes less and less. The action of walking is very commonly affected, and the condition may affect almost any muscle of the body. The condition is often hereditary and occurs in several members of a family.

In myotonia atrophica there are two striking features:

1) the myotonia: and (2) the muscular atrophy.

(1) the myotonia; and (2) the muscular atrophy.

1. The myotonia is shown more commonly in the difficulty in relaxing the grasp than in any other voluntary movement. In many cases it is limited to this movement. The greater the force of the grasp, the longer is the period of relaxation. The difficulty of relaxation is due to the continued contraction of the flexors and not to any weakness of the extensors.

2. The muscular atrophy is seen in the muscles of the face, and especially by the orbicularis oris and orbicularis palpebrarum, giving rise to the expressionless face which is so characteristic of the type of myopathy described by Landouzy and Déjerine. The masseter and temporal muscles are often affected. Atrophy, and in some cases the complete absence of the sterno-mastoids, is a very striking feature. The forearms, both flexors and extensors, are often feeble and wasted. The hand muscles are usually well preserved. Weakness of the thigh muscles is commonly present, and the vastus internus and externus show a marked tendency to atrophy, leaving the rectus femoris relatively intact. The muscles below the knee most liable to be affected are the anterior tibial group and peronei.

The disease commonly affects individuals between 20 and 30 years old, and males are more frequently affected than females. The myotonic symptoms usually precede the muscular atrophy. You will, however, obtain the best clinical picture from a consideration of the following case.

The patient, a man, aged 40 years, is the third member of a family of three. Both parents are dead, and as far as is known never had any complaint similar to that from which he suffers. His elder brother died at the age of 47 years from some wasting disease of the lower limbs which was diagnosed as "locomotor ataxia." He is said to have walked with a "steppage" gait and to have had especial difficulty in getting up and down stairs. He constantly complained of sharp shooting pains in the legs, but his gait was not unsteady. For many years before his death he had the same difficulty in relaxing his grasp as that of which his brother now complains. It seemed not improbable that he suffered from the same disease which now affects his brother. That the case should have been diagnosed as one of locomotor ataxia is not surprising, and it is of interest to note that in a case recorded by Rossolimo a similar diagnosis was originally made.

The patient's sister, a married woman, aged 46 years, has similar symptoms and similar atrophy of muscles to those of her brother, and she has had difficulty in relaxing her grasp

as long as she can remember, but the difficulty is rather less now than it was formerly.

The patient himself states that in 1900 he noticed that his thighs were getting thin. The wasting caused him no inconvenience till 1903, when at times his knees would suddenly give way whilst walking and he would fall. Recently he has had a stiffness about the legs when he first starts to walk, but this passes off after he has gone a few yards. He complains of a stiffness in the thighs when tired, and of sharp shooting pains down both thighs. For the last few years he has noted a steadily increasing weakness of his grip and his arms have become thinner. For many years, he cannot say definitely how long, he has had difficulty in relaxing his grasp. The difficulty passes off after repeated movement. He has had some difficulty in articulating his words when first starting to speak.

On examination the patient is a thin, spare man. His face is strikingly smooth and expressionless and the orbiculares palpebrarum are very weak, and attempts to keep the eyes closed against even very slight resistance are unsuccessful. The orbicularis oris is also very weak and he cannot whistle or blow out the cheeks properly. The face is generally very thin and there is some wasting of the temporal and masseter muscles. Both sterno-mastoids are completely atrophied, but the other muscles of the neck are well developed. The muscles of the shoulder and upper arm are neither wasted nor hypertrophied and all movements are good. There is some wasting of the forearm in both limbs and flexion and extension of the wrists are feeble. The grasp, however, is fairly good. There is no wasting of any of the small muscles of the hand and their power is not diminished. When the patient is asked to grasp an object he does so quickly and with fair force, but when he is told to let go there is a considerable pause before he is able fully to relax and extend the fingers. The first and second fingers extend first, and these are followed after an interval of some seconds by the third and little fingers. The difficulty in extending the fingers is due to the slow relaxation of the flexor muscles, and not to any weakness of the extensors. If the patient is now asked to repeat this movement he does so well and relaxation is more rapidly accomplished, and by repeating the movement several times he is able to relax his grip at once. If he simply flexes the fingers without force he is able to relax at once. The stronger the original grasp the slower the relaxation. The slow relaxation is not well shown in any other muscle. The patient walks in a natural manner, in spite of the fact that he complains of a feeling of stiffness when he first starts to walk. The knee-jerks are absent in both limbs, but the ankle-jerks are active and the plantar responses are flexor on both sides.

Electrical reaction.—The most striking feature on electrical examination is the very marked diminution of irritability of the muscles generally to the faradic current. It requires a far stronger current to produce a contraction in the muscles of the patient than in corresponding muscles of the normal individual. On first stimulating the flexor muscles of the fingers there is a brisk contraction and a relatively slow relaxation. The muscles cannot be said to give the typical myotonic reaction as described by Erb in Thomsen's disease.

The sister of the above patient shows a condition very similar to her brother. There are the myopathic face, the wasting of the sterno-mastoids, and the "myotonic grasp." The knee-jerks are, however, active. She considers herself a perfectly healthy woman with a "family failing," and only submitted to examination at my especial request.

Other cases might be mentioned, and for those who are interested in the subject I should refer them to a paper on the subject published by Dr. H. P. Gibb and myself in Brain, 1909. The striking features of the condition are the muscular atrophy, the myotonia, and the family nature of the complaint.

Historical.—Without giving a detailed description of the various cases which have already been published, the following short historical résumé may be of interest. In 1897 Pelizaeus described the case of a man with symptoms of Thomsen's disease associated with muscular atrophy. In 1899 Nogues and Sirol described a case of Thomsen's disease with muscular atrophy in a man aged 33 years. The symptoms of Thomsen's disease had been present since he was 17 years old, but the muscular atrophy only developed at the age of 28 years. In 1900 Hoffmann wrote a paper showing that muscular atrophy occurred in about 9 per cent.

of cases of Thomsen's disease. Since that time numerous cases have been published under titles which indicate muscular atrophy associated with myotonia (Thomsen's disease) and in some instances with myasthenia. The condition has been described under various names: myotonia with muscular atrophy (Lannois), muscular atrophy with the electrical reaction of Thomsen's disease (Lortat-Jacob and Thaon), Thomsen's disease with muscular atrophy (Nogues and Sirol), atypical forms of Thomsen's disease (Pelz), muscular atrophy with slow relaxation of muscles (Kleist), myotonia atrophica (Rossolimo, Fürnrohr, and others).

The name "myotonia atrophica" serves shortly to describe the salient features of the disease and is therefore the name here adopted. Objection may be raised to the term "myotonia," as it is often used as synonymous with Thomsen's disease (myotonia congenita). Myotonia is, however, only a symptom, and as such its use is here justified. Objection to the term "atrophica" may be raised, since the atrophy does not always occur in the muscles which exhibit myotonia, and it may further be urged that the myotonia should precede the muscular atrophy—a sequence of events which does not always occur.

Familial characters.—The familial characters of Thomsen's disease and myopathy are well recognised, and it is therefore not remarkable that the type here described should also present familial characters. The case which has here been described shows distinct familial characters, in that the sister is similarly affected, and it is almost certain that the elder brother was also affected. Hoffmann records the disease in a brother and sister, Pässler in two brothers, and Hunt in two and possibly three brothers.

Myotonia or myopathy. - The relation of the myotonia to the muscular atrophy is a point on which there has been considerable discussion—that is to say, whether these cases should be regarded as unusual cases of Thomsen's disease, or whether they should be regarded as cases of myopathy with the peculiar myotonic phenomenon. In the discussion of this point Hoffmann put forward the three following views: (1) Both diseases may develop independently in the same individual; or (2) the muscular atrophy may be primary and the myotonia develop as an added symptom; (3) the case may be primarily one of Thomsen's disease, in which muscular atrophy develops. Hoffmann argues that it is probable that the initial condition is myotonia, and that the muscular atrophy is secondary. In support of this view he quotes the cases recorded by Nogues and Sirol, in which the son had myotonia and muscular atrophy, whilst the father

had myotonia but not muscular atrophy. Myotonia does not always precede the symptoms of muscular atrophy. In

several of the recorded cases the muscular atrophy occurred

before the myotonia.

The distribution of the muscular atrophy is so striking and affects various members of a family in an exactly similar manner that it seems probable that the condition is more closely allied to the myopathies than to the myotonias. The presence of myotonia in association with other forms of muscular atrophy has been pointed out by Schlesinger, who has described the conditions in association with syringomyelia. It seems well at the present time to regard these cases as belonging to the great group of myopathy or muscular dystrophy; they do not, however, conform to any of the well-known types. The condition of the muscle of the face brings them into relation with the Landouzy-Déjerine type, whilst the condition of the lower limbs resembles rather closely the "distal" type described by Gowers and other writers. It would seem well until further pathological knowledge concerning the condition is forthcoming to regard them as a separate type belonging to the great class of myopathies.

Morbid anatomy and pathology.—The pathology of the condition is based on the examination of portions of the excised muscles by Rossolimo, and by the full pathological examination by Steinert published in this year. With regard to the portion of muscles excised, Rossolimo found great variation in the size of the fibres, from 23 to 195 μ . The normal fibres were small in numbers. The atrophic fibres were sometimes isolated, sometimes in bundles. The fibres instead of being polygonal in shape were rounded or oval, and the connective tissue was increased between the fibres. The sarcolemma nuclei were greatly increased in numbers, and became arranged in chains of varying

length. The transverse striation was altered in the smallest fibres.

The case recorded by Steinert is that of a man aged 44 years, in whom myotonic symptoms had been present since childhood. The father and a brother had also suffered from myotonia. In 1890, some 15 years before death, muscular atrophy began in the facial muscles, then in the sterno-mastoid and hand muscles, the general musculature of the body being involved. The myotonic symptoms showed themselves in opening and closing the mouth, in the movements of the tongue, and in most movements of the extremities. The phenomenon was also present in the movements of accommodation of the eye. The opening of the hand did not, in contra-distinction to the closing of the hand, show the myotonic conditions. The muscular wasting was general, but was especially noticeable in the small muscles of the hand. The patient had a typical myopathic facies, slight ptosis was present, and there was atrophy of the muscles of the jaw. The myotonic reaction was present in the muscles of the upper arm, but was not found in the extensor of the forearm. It should be noted that clinically this case differs very considerably from the one which I have described—the myotonia had been present since birth and was of a wider distribution than in most of the other cases recorded; the muscular atrophy was widespread and affected the small muscles of the hand.

The pathological examination showed the cerebral cortex to be normal. In the spinal cord there was degeneration of the posterior column in the lumbar region, and this could be traced up into the cervical region where it became limited to the column of Goll. The fibres of the extra-medullary posterior roots were in the lumbar region considerably atrophied, whilst the anterior roots appeared normal. The cells of the anterior horns were normal, and there was no change in the lateral columns of the cord. The muscles showed the changes which are commonly found in myopathic conditions -that is to say, there was an increase of the connective tissue nuclei between the muscular fibres, with simple atrophic degeneration of the muscle fibre, an increase of fat between the muscle fibres, and a general cirrhotic condition of the muscles.

Steinert discusses the relation of this disease to that of Thomsen's disease, and to myopathy. He holds the view which Hoffmann has already expressed that these are true cases of Thomsen's disease. There are instances in which perfectly typical cases of myotonia congenita have been affected with muscular dystrophy (Cases 2 and 3, quoted by Steinert). In both cases the myotonic symptoms were widely distributed, and existed from childhood and preceded the muscular atrophy. Steinert sums up the result of his investigations as follows: "The so-called myotonia atrophica is a condition in which a typical case of Thomsen's disease is affected with muscular dystrophy. The clinical picture of this muscular atrophy is sharply defined and highly charac-teristic. It occurs only in this form in Thomsen's disease. A number of more or less individual symptoms which occur only tend to make the clinical picture clearer. The comparative frequency of impotence and atrophy of the testicle should be emphasised."

In many cases, however, the myotonic symptoms are late in developing, and in not a few the myotonia has followed the myopathy. From a careful consideration of the clinical features of the disease and from the pathological evidence I should myself be inclined to regard these cases as belonging to the great group of myopathies. The question is still, however, an open one, and further clinical and pathological evidence is required before any definite statement can be made.

Prognoms.—The disease is usually slowly progressive, but in some cases it does not seem to advance, for the patients are able to carry out their usual occupations for many years

Diagnosis. - But little difficulty should arise with regard to diagnosis when once the leading features are recognised. The condition might be regarded as a muscular atrophy of a myelopathic origin, but the distribution of the atrophy is strongly against such a view. The condition might be regarded as a myotonia congenita (Thomsen's disease), and some authors have regarded these cases as aberrant forms of that disease. The weakness of the facial muscles and the character of the articulation may suggest the presence of myasthenia gravis, and some cases have been so described. The muscles do not respond readily to the faradic current; The Royal College of Surgeons in Ireland has never found

they do not, however, show the myasthenic reaction. From the various types of myopathy it is by no means easy to distinguish this group, for features are present which very closely resemble the facio-scapulo-humeral type of Landouzy and Déjerine, and also the "distal" type; the presence of the myotonic symptoms should separate such cases from these groups.

Conclusion.—In conclusion, the leading features may be shortly summarised as follows:—A patient, usually a male, between the twentieth and thirtieth year of life, begins to complain of weakness of the limbs and wasting of muscles. Some stiffness of muscles may also be complained of. On examination he is found to have weakness and atrophy of the facial muscles, of the sterno-mastoids, of the flexors and extensors of the wrist, of the extensor of the leg or dorsiflexors of the foot, and the striking myotonic phenomenon that after grasping an object he has difficulty Pathologically there is a general in relaxing his grasp. Pathologically there is a general cirrhotic condition of the muscles, such as is found in muscular dystrophy. The spinal cord may show some degeneration in the posterior columns, but the other portions of the nervous system are normal. My object will have been attained if I have given you a clear clinical picture of this disease. When once seen the condition is easy of recognition, and I trust it may fall to the lot of some one of you to work out in full the pathology of this condition. That variations from this clinical picture have been and will in future be described is certain, but the name "myotonia atrophica" will serve as a point around which this type of case may be collected and investigated.

Bibliography.—Batten and Gibb: Brain, 1909, vol. xxxii., p. 187. Fürnrohr: Deutsche Zeitschrift für Nervenkrankheiten, 1907, Band xxxiii., p. 25. Hoffmann: Ibid., 1900, Band xviii., p. 198. Schlesinger: Neurologisches Centralblatt, 1902, Band xxxi., p. 84. Steinert: Deutsche Zeitschrift für Nervenheilkunde, 1909, Band xxxvii., p. 58. Rossolimo: Nouvelle Iconographie de la Salpëtrière, 1902, vol. xv.,

Harley-street, W.

ABSTRACT OF THE

Introductory Address

Delivered at the Opening of the Schools of Surgery of the Royal College of Surgeons in Ireland

By JOHN LENTAIGNE, F.R.C.S. IREL.. L.R.C.P. IREL.,

PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND.

Mr. Lentaigne commenced his address with an expression of profound sorrow for the heavy loss which the College and the medical profession in Ireland had sustained by the death of the late professor of anatomy, Dr. Alexander Fraser, describing him as a man who combined scientific eminence with exceptional administrative ability and whose unwearied industry had been a marvel to all who knew him. He then congratulated the students who had been awarded prizes, and expressed for himself and for the Council of the College their deep regret that the pecuniary rewards which it was possible for them to give for such excellent work as had been done were so utterly inadequate, especially when compared with the rich prizes which were given by the Stateendowed rival medical schools. Proceeding in the next place to discuss the future prospects of the school he continued as follows:]

We are now approaching a period of the greatest difficulty and danger for the School of Surgery associated with the College. If we could persuade ourselves that these difficulties are nothing more than the natural result of fair competition—that is, of greater industry and capability on the part of our rivals—we should have no just ground for complaint; any such difficulties could be met in the future, as they had been met in the past, by equal or greater industry and effort on our part. Unhappily, our troubles are due to a very different cause. Our danger arises from the fact that as a result of a long existing political agitation the Legislature has passed an Act of Parliament which completes the endowment by the State of every medical school in Ireland except ours, which has been carefully excluded from Governmental favours and left absolutely out in the cold.

fault with the endowment of the other schools; medical education has grown with the vast progress of science to be such a difficult and financially unprofitable business that it may make a very reasonable claim to be assisted by the State when necessary. What we protest against is the unfairness and injustice of endowing one or more schools while absolutely ignoring the claims of another, which has done at least as good work, and against which no fault has been found. These rival schools will now be free from all possibility of pecuniary embarrassment, they will be provided with abundant funds for the equipment of laboratories and class-rooms, the salaries of their professors and lecturers will be paid for them, no inconsiderable number of rich prizes will be offered to them as bribes to entice students, and, worst of all, they can outbid and undersell the School of the Royal College of Surgeons by lowering the fees for lectures, degrees, and diplomas to such a point as must speedily starve and destroy our School. It is a matter of common knowledge that these things are actually being done, and this with funds supplied by the State, which should protect the interests of all alike, and to which all taxpayers are compelled to contribute. The scandalous injustice and unfairness of the scheme are so manifest that there is no need of an elaborate argument on the subject. When the Bill for the formation and endowment of the new Universities, which were to take over and absorb the four existing medical schools in Ireland outside Trinity College, was being introduced, the President and Council of the Royal College of Surgeons had full confidence that we should only have to state our case in order to have our grievance remedied. We therefore approached the Government and asked for such an endowment as would enable us to continue our work in the face of the new and increased competition. The sum we applied for was absolutely insignificant compared with the huge grants which were being voted for educational purposes for the new universities. In approaching the Government we felt all the more confident of success as the institution which we represent is an educational institution with a continuous record for a hundred years of good work done, absolutely non-sectarian and non-political, a common meeting ground for men of every religion and every shade of political thought, with equal privileges for all. The Royal College of Surgeons did not spare trouble, work, or expense in making its position clear to the Government. We sent several deputations to London, who spent many hours in the Lobbies of the House of Commons interviewing Members of Parliament, including the heads of both political parties and the Chief Secretary for Ireland, and finally an audience of the Prime Minister was obtained. Mr. Asquith paid in words a high and glowing tribute to the good work which had been done by the College and the School, but in deed he paid a very poor tribute to our intelligence, for he then proceeded to assure us that he did not think that either the School or the College would suffer by the new competition, but that if it were proved later on that they were really damaged, as was feared, then the Government might possibly reconsider the question, though he would not promise it. The result was therefore a complete failure. After all our trouble, loss of time, and expense we received in return only a number of high-flown complimentary phrases eulogising the good work which we had done.

[Mr. Lentaigne here discussed the question whether the failure of the negotiations with the Government was not due to the non-political attitude of the College and to the absence of support from any religious or political party with votes in Parliament. He illustrated the preferential State endowment of certain medical schools by a sketch of the results which might be expected from preferential endowment of one among several commercial firms, and continued

The Royal College of Surgeons is nevertheless determined to spare no effort to maintain the highest possible standard of efficiency in its School. During the past two months it has expended large sums out of its scanty funded capital in improving the School, and it will do everything in its power to maintain the unequal struggle as long as it would be possible; it will also agitate to the best of its ability, spreading far and wide, and on every possible occasion, the story of the wrong which was being done. My term of office as President will end in May next, but another will succeed me, and after him another again, and they and the Council will all continue the agitation until they get in the middle line below the umbilicus. The intestines were

redress. Owing to the peculiar conditions of professional life in Ireland the interests of the Royal College of Surgeons were bound up in the School. Every one of its 400 Fellows and every one of its 3000 Licentiates when receiving his diploma takes an oath always to uphold the honour and dignity of the College to the utmost of his ability, and each of them will abide by that oath.

TWO CASES OF INTESTINAL OBSTRUCTION IN WHICH A DOUBLE RESECTION OF INTESTINE WAS PERFORMED.

BY HUGH M. RIGBY, M.S. LOND., F.R.C.S. ENG., SURGEON-IN-ORDINARY TO H.R.H. THE PRINCE OF WALES; ASSISTANT SURGEON TO THE LONDON HOSPITAL; SURGEON TO THE POPLAR HOSPITAL.

THE two cases of acute intestinal obstruction which are here described presented so many interesting problems during their treatment that I considered their publication worthy of record. In both complications occurred which demanded numerous operations, and in both a double resection of intestine was ultimately required. The condition of carcinomatous stricture of the large intestine complicated by acute obstruction generally necessitates three operations before the condition is satisfactorily relieved. These include (1) exploration of the abdomen followed by drainage of the distended gut above the stricture; (2) resection of the growth when this is possible; and (3) an operation to close the artificial opening at a later date. In certain cases, where distension of the gut is slight and fæcal stasis has not occurred to any great extent, an artificial opening can be avoided by the formation of a lateral anastomosis. Unfortunately this is not often possible, especially in hospital practice. When it is possible, however, it affords a great saving of discomfort and danger to the patient.

When the stricture (as in Case 1) is situated at the splenic flexure of the colon, the opening for drainage may be made in any portion of the colon above or in the lower part of the small intestine. In Case 1 for purposes of drainage an extraperitoneal opening into the ascending colon was made in the right loin. This proved difficult to close satisfactorily at the third operation. When the obstruction recurred, however, it was re-opened easily and without danger of peritoneal infection. It is interesting to notice that this opening appears now to have closed completely, although it leads into a large cul-de-sac formed of small and great intestine. In such conditions a small mucous fistula generally persists, and probably the present closure is only a temporary one. In Case 2 the treatment of the large fistulous opening into the cocum was the most difficult part of the problem, and the treatment adopted, although successful, was somewhat drastic. It is of interest to note that this patient is now in sound health and well up to his normal weight, although deprived of most of his large and several feet of small intestine.

CASE 1.—The patient was a female, aged 31 years, whom I first saw in February, 1908, in consultation with Dr. Gordon Wilson. She gave the following history. Five days previously she had been seized with abdominal pain of a colicky nature; the pain was chiefly in the centre of the abdomen, but radiated towards the region of the cæcum. The pain made her feel sick and she had vomited several times. The bowels were confined and had only acted slightly after enemata had been given. The temperature was not raised above the normal. On examining the patient she did not appear to be very ill; her pulse was full and regular; the tongue was furred; she did not appear to be in much pain. The abdomen was somewhat distended all over, but this was most marked over the cæcum, and deep palpation caused pain in this region. The abdominal wall was not rigid. A tumour could not be felt in the abdomen. A rectal examination revealed a sense of fulness in Douglas's pouch, but no increased tenderness was caused by the examination. Her previous health had been good, and she gave no history suggestive of old intestinal trouble. An exploratory opera-

tion was advised and this was carried out next morning. First operation.—The abdomen was opened by an incision then seen to be distended, but most markedly in the region of the cæcum. The sigmoid colon was found to be small and contracted. The ascending colon was distended; on tracing the transverse colon across the abdomen a hard ringlike constriction was met in the splenic flexure. Owing to the general intestinal distension it was obvious that drainage was necessary. After a little consideration as to where the opening should be made it was decided to drain the ascending colon in the right loin. This was done without opening the peritoneum and a large quantity of fæcal matter was evacuated. The median abdominal wound had previously been sutured. A Paul's tube was fixed in the ascending colon and the patient was put back to bed. She made a good recovery from this operation; the loin tube drained well and the median wound healed soundly. Three weeks later I decided to excise the growth at the splenic flexure. For this purpose the patient was admitted into one of my beds in the London Hospital on March 19th, 1908.

Second operation.—The following operation was performed on March 27th, 1908. An incision was made through the left rectus muscle near its outer border about 3½ inches in length. The affected portion of the intestine with the growth was drawn out on the surface of the abdominal wall. The surrounding parts were protected with gauze. The growth with about 2 inches of intestinal wall on each side was removed, the mesentery having been previously ligatured

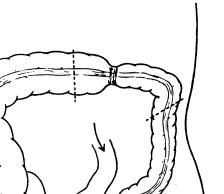
Fig. 1.

surrounding tissues. The edges of the intestinal opening were freshened and sutured together with catgut sutures. The margins were then inverted and a second row of chromic catgut sutures was applied. The muscles of the loin were next sutured over the intestine with chromic catgut and the skin edges were united partially, a drainage-tube being left at the lower extremity. This operation did not prove immediately satisfactory. The portion of the wound where the tube was inserted never healed completely, and a week after the operation slight feeal discharge occurred.

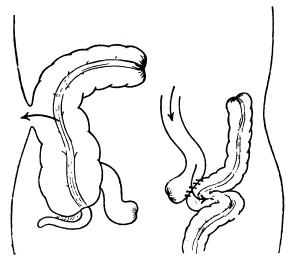
The patient was discharged from the hospital on May 21st in good health, but with a small sinus in the right loin. She came to see me at the London Hospital in the following October. She appeared then to be in very good health; she had gained over 1 stone in weight. The colotomy sinus had completely closed. The bowels acted normally and her appetite was good. She occasionally had aching pains at the site of the colotomy scar. The abdomen appeared normal

On May 25th, 1909, the patient again came to see me at the London Hospital, when she gave the following history. One month previously she began to have attacks of colicky abdominal pain in the lower abdomen and on both sides. This was relieved at first by taking aperients. Six days before admission she began to vomit and had vomited each day two or three times a day. The bowels had lately acted.

Fig. 2.



Shows the condition of the intestine before the fifth operation.



Shows the condition after the fifth operation.

and divided. Some enlarged glands were also found in the mesentery; these were dissected out freely. The divided ends of the intestine were then united by end-to-end anastomosis; a double row of chromic gut sutures were used for the union, and some additional fine silk sutures were superimposed at various points. The abdominal wound was then closed without drainage.

The patient stood the operation very well and had but little shock. The specimen removed showed a carcinoma of the scirrhous type encircling the bowel and causing almost complete constriction of its lumen. The glands were examined microscopically, but no secondary deposits were found. The patient made a good recovery from this operation. On April 6th I made the following note: "There is now only slight discharge from the lumbar colotomy opening. Formed motions are passed by the rectum. The sutures were removed to-day; some slight suppuration had occurred in the deeper part of the wound. The patient is comfortable and takes food well." Further progress was good and the abdominal wound healed soundly. The colotomy wound had appreciably contracted, but there was till daily discharge of fæces in small quantity. On May 1st, 1908, the following attempt was made to close this opening.

Third operation.—The patient was placed on the left side. An incision was then made on each side of the colotomy opening. The margins of the wound were dissected away and the opening into the intestine was freed from the

irregularly, and only very small liquid evacuations were passed containing some blood and a little slime. She had lost weight since November. The physical signs were as follows. The abdomen was somewhat distended; no peristaltic waves were seen. The colotomy scar looked red and was tender; there was distinct bulging in the right loin. The temperature was 100°; the pulse was 108, regular. The symptoms were evidently those of intestinal obstruction, probably due to recontraction at the site of the anastomosis.

Finirth operation.—On May 26th, 1909, my colleague Mr. Russell J. Howard, in my absence, opened the old colotomy wound and evacuated a large quantity of fluid fæcal material with immediate relief to the symptoms. The colotomy wound discharged freely after this operation and the patient's general condition was greatly improved. There was, however, no passage of fæces by the rectum, and the skin of the right loin became eczematous from the constant irritation. At the patient's request I decided to operate again and attempt both to relieve the obstruction and remedy the fæcal fistula.

Fifth operation.—On June 25th the following operation was performed. The abdomen was opened through the left rectus muscle by an incision below the umbilious to the left side of the scar made at the first operation. The position of the old anastomosis was explored with the fingers and a hard mass, evidently carcinomatous, was felt at the line of union.

It was localised and freely moveable and apparently could be excised without much difficulty. The small intestine was next sought for and traced downwards towards the cacum. Two clamps were then placed on the intestine about four inches apart, the lower one some three inches from the ileocsecal junction. The intestine was tied at two places with chromic gut sutures between the clamps, and the wall was divided transversely between these ligatures. Each end secured by the ligatures was encircled by a purse-string suture of chromic gut, and both were invaginated. The clamps were then removed. A lateral anastomosis by suture was then made between the proximal end of the divided small intestine and the lateral wall of the sigmoid colon. By this means the flow of fæces was diverted from the colotomy opening. Excision of the growth in the colon was next effected. The old anastomosis with the recurrent growth was freely removed as far as possible towards the descending colon on the left and the hepatic flexure on the right side. The mesentery containing some enlarged glands was also freely excised. The divided ends of the colon were treated in a similar way to those of the small intestine. The ends were secured by chromic gut ligatures tied round them, and each in turn was invaginated by chromic gut purse-string sutures encircling the wall an inch or two from the closed end. At the end of this operation the execum, lower portion of the small intestine, and the ascending colon were left closed at each end and communicating with the exterior by the right lumbar colotomy opening. (Figs. 1 and 2.)

The patient made a good recovery from this operation. The bowels began to act naturally 48 hours afterwards. The discharge from the loin greatly diminished and the condition of the skin rapidly improved. On August 13th the patient returned from a convalescent home in good condition. The colotomy wound has healed and no discharge has been noticed from it for the last seven days. The bowels act regularly without aperients. Her general health and appetite are good. She has gained 2 pounds in weight since the operation. Nov. 1st, 1909: The wound is still healed and

the general health is good.

OASE Z.—A male, aged 9 years, was admitted into the London Hospital on Jan. 16th. On the previous day, whilst at school, he was seized with acute abdominal pain accompanied by vomiting. He was sent home and put to bed, and chlorodyne was given. The pain and vomiting persisted. Two enemata were given with only a small result. As the acute symptoms did not subside he was sent up to the hospital next day at 8 P.M. His previous health had been good.

Condition on admission.—The boy was well n ourished, showing marked symptoms of shock apparently due to some acute abdominal lesion. The extremities were cold and the lips were pale. The pulse was small, 140 per minute; the temperature was 99° F. On examination the abdomen was found to be generally distended; the abdominal wall moved slightly on respiration. On palpation an ill-defined swelling was felt occupying the umbilical and right iliac regions. This was tender, not completely dull to percussion, and did not move during respiration. Over the rest of the abdomen distended coils of intestine could be felt. Nothing abnormal was felt by the rectum. The diagnosis of acute intestinal obstruction seemed clear, and the collapse and general condition of shock suggested the presence of gangrene of the gut. Shortly after admission the following

operation was performed.

First operation.—The abdomen was opened by an incision in the right semilunar line immediately over the tumour felt through the abdominal wall. When the peritoneum was opened a large quantity of blood-stained fluid escaped and a coil of gangrenous small intestine appeared. This portion was drawn out of the wound. It was found to be the lower part of the ileum. A coil of gut was found acutely twisted on itself, and across the neck of the twist a fibrous band was seen. This was fixed below in the pelvis, but its attachment upwards was not followed. The band was divided and the coil was untwisted. The portion of gangrenous gut was found to be constricted below about two inches from the ileo-cæcal valve, and above two and a half feet higher up. The gut was black and foul-smelling, the peritoneum had lost its gloss, and ash-grey patches were seen on its surface. A stout chromic gut ligature was carried round the healthy gut above the upper and below the lower constriction; intestinal

clamps were then applied on the gut between these ligatures. and the gangrenous portion was rapidly cut away. mesentery was ligatured with chromic gut and was divided piece by piece. A chromic gut purse-string suture was then passed round the intestine about 2 inches away from the ligatured ends. The latter were then inverted and secured by this suture. A lateral anastomosis by suture was then made between the lateral wall of the cæcum and the side of the ileum, some 3 inches from its proximal occluded extremity. The peritoneal cavity in the neighbourhood was cleansed with sponges and the abdomen was closed, a drainage-tube being left in the lower end of the wound. During the operation the patient was much collapsed and two injections of strychnine were given. Brandy and saline injections were given by the rectum on his return to the ward. The gangrenous portion removed was measured and found to be $2\frac{1}{2}$ feet in length. Fig. 3 shows the condition of the intestine after the first operation.

The patient rallied well from the effects of this operation. On the next day the pulse was 136 per minute; the temperature was normal. He had slight post-ansesthetic vomiting. Progress was uneventful for the next three days. Abdominal distension caused a good deal of discomfort, but was relieved by enemata containing turpentine. These brought away some fæcal matter and flatus was passed. On the sixth day after operation (Jan. 22nd) the upper end of the wound became acutely inflamed and hot fomentations were applied. On the next day the wound looked worse and had a sloughy greenish appearance. Two sutures were removed and a quantity of greenish pus with a strong fæcal odour escaped. Subsequently fæces were discharged from the wound and the

entire wound gradually gave way.

The condition on Yeb. 14th—i.e., one month after the opera-tion—was as follows: "The wound has gaped and fæces are passed several times daily through this opening. Enemata are given by the rectum every other day; these bring away a certain amount of fæcal material. The fæcal discharge from the wound is sometimes fluid, but often large masses of semisolid fæces are passed. The edges of the wound are beginning to show signs of irritation. The boy's general condition is good and he is not losing ground; he looks no thinner and

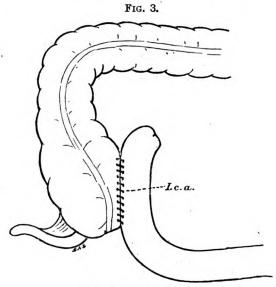
the pulse is good; he eats well."

The note on March 11th (7 weeks after the operation) said: "There is now a gap 1½ inches wide and 3 inches long owing to the separation of the wound edges; the floor of this gap is formed by the posterior half of the ileo-cæcal anastomosis. The anterior half of the anastomosis has entirely given way and has become firmly adherent to the edges of the abdominal The posterior wall prolapses occasionally. fæcal matter passes into the cæcum, as enemata given by the rectum sometimes remove fæcal contents. The majority of the fæces, however, pass straight out through the fistulous opening. A finger can easily be passed into the ascending colon and down the small intestine. The boy's general condition is good. He looks fatter and his temperature remains normal. The pulse is good. The skin of the abdominal wall round the wound is inflamed and pustular." On March 21st it is noted: "The boy is in much the same condition. Less fæcal matter is passed per rectum and there is a constant fæcal flow, generally fluid, but sometimes semi-solid, from the wound. He is not thinner and the pulse tension is good. The skin of the abdomen shows intense irritation from the constant fæcal discharge, notwithstanding the greatest care and attention in nursing.

The treatment of this fæcal fistula was now a rather difficult problem. Any direct attempt to close such a large opening seemed inadvisable owing to the septic condition of the wound margins. It was evident that unless the free fæcal discharge could be checked no improvement in the condition of the abdominal wall was to be expected. only course which recommended itself was that of dividing the small intestine above its junction with the cæcum and joining its proximal end to some portion of the large intestine beyond the fistula. The presence of the fæcal fistula and the septic condition of the skin made this proposed operation one of gravity owing to the great risk of infection of the peritoneum. However, this seemed the best line of treatment and accordingly the second operation was per-

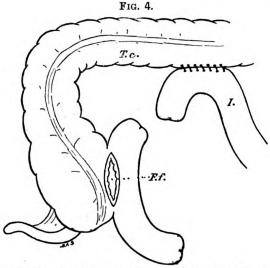
formed on March 28th, 1908. Second operation. - An incision 4 inches long was made below the umbilious in the middle line after the site of the fæcal fistula had been carefully cleansed and protected.

Many adhesions were encountered on opening the peritoneal cavity. The ileum entering the anastomosis was traced back and divided some 4 inches from its junction with the cæcum. Chromic gut ligatures were tied round the gut at two places and the intestine was divided between them. The two ends were then invaginated, the invaginated portion being secured by a purse-string chromic gut suture passed round the intestinal wall. The transverse colon was next sought



I.c.a., Ileo-cæcal anastomosis.

for and clamps were applied to it and the lower part of the ileum. A lateral anastomosis was then made by suture between these portions of intestine and the abdominal incision was closed. Fig. 4 shows the condition after this operation. The colon was not divided on the proximal side of the anastomosis; this step was considered at the time of operation but was thought inadvisable as an additional risk



Condition after second operation. T.c., Transverse colon. I., Ileum. F.f., Fæcal fistula at site of the lateral anastomosis.

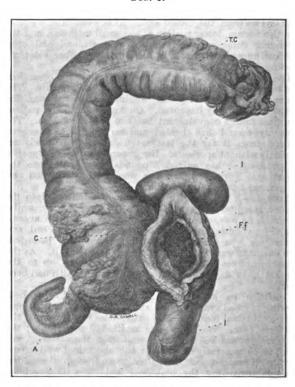
owing to the length of the operation and the child's condition.

The boy recovered well from the immediate effects of the operation. There were some abdominal distension and vomiting at first, which passed off after three days, and enemata brought away a good quantity of fæcal material. The fæcal discharge from the first wound entirely ceased from the date of the second operation. There was some suppuration in the median wound, but this yielded to fomentations with early removal of infected sutures.

The note on April 7th (10 days after the second operation) stated: "The ulceration and pustular condition of the skin round the first wound has entirely healed. There has not been any fæcal discharge at all from this wound since the second operation, but a little mucus comes away every day." On April 21st (about one month after the second operation) it is noted: "The median incision has healed well. The fæcal fistula remains as large as ever; the wound edges, however, are now quite healthy. Up to the present date no fæcal matter had come away, but daily discharge of mucus in small quantity. A few days ago a considerable prolapse of mucous membrane took place from the upper part of the wound, apparently from the ascending colon. To-day some fæcal matter was passed from the fistula, coming from the upper part of the wound and evidently from the ileo-colic anastomosis, passing backwards round the hepatic flexure and down the ascending colon."

This condition remained unaltered until May 15th. There was no tendency for the gaping fæcal fistula to close and occasionally fæcal matter was passed from it. The skin,

FIG. 5.



Parts of intestine removed at third operation. A, Appendix caci. T.C., Transverse colon. I, Ileum. c, Cacum. Ff., Fæcal fistula.

however, remained in good condition. The boy's general state was very good, the bowels acting well, occasional enemata being necessary. From time to time there was considerable prolapse from the fæcal fistula.

As the general condition of the patient was so good it was considered that an attempt should now be made to close the opening into the cæcum. The following alternative lines of treatment were considered. 1. An operation planned to directly close the opening. The skin was in sound enough condition, but it would have meant free opening of the peritoneal cavity and freshening of the edges of the wound which was still some 3 inches long by 1½ inches wide. Even if the sutures had held securely and the wound had united an undesirable state of affairs would have resulted. A cul-de-sac of large intestine extending from the middle of the transverse colon to the cæcum and the anastomosed portion of small intestine with two blind ends would have been formed. In this fæcal test-tube fæcal matter and mucus would probably have collected, which might readily cause subsequent trouble, perityphlitis, appendicitis, &c. For these two reasons, therefore, a direct closure of the fæcal

opening alone was considered inadvisable. 2. The second alternative was that of dividing and closing the colon on the proximal side of the anastomosis made in the transverse colon. This, however, was put aside as it would merely have prevented reflux of fæcal contents. The opening of the fistula was so large that it would probably have never contracted to any great extent, and probably a persistent mucous discharge would continue from the blind tract of bowel left-viz., a portion of the ileum, cæcum, ascending and hepatic flexures of the colon. 3. The third alternative which offered itself as the most certain but at the same time most dangerous one was: Division of the colon between the hepatic flexure and the ileo-colic anastomosis and subsequent removal of the entire portion of bowel left connected with the fistulous opening. After some consideration the last course appeared to be the only satisfactory one, and accordingly the following operation was performed on May 15th, 1908.

Third operation.—Gauze was first packed into the cæcal opening. An incision was then made in healthy skin round and above the mesial side of the opening and the adherent edge of the gut was dissected away from the skin, the peritoneal cavity being freely opened. The hepatic flexure and transverse colon were brought into the wound and packing was inserted to prevent prolapse of the surrounding intestines. A chromic gut ligature was passed through the mesocolon and tied round the gut a short distance to the proximal side of the ileo-colic anastomosis. A clamp was then placed half an inch nearer the hepatic flexure and the gut was divided between the clamp and the ligature. The ligatured end of the colon was next encircled some 3 inches from its extremity by a purse string suture of chromic gut and the blind end was invaginated and secured by this suture. Chromic gut ligatures passed by an aneurysm needle were used to tie off successive portions of mesocolon, working gradually downwards from the transverse colon to the cæcum. The wound was next prolonged downwards so as to clear the lower part of the cæcum and attached portion of the ileum. These were then pulled out of the abdomen. The mesentery of this portion of the intestine was ligatured with chromic gut and cut through. An incision was next made around the outer side of the opening in the cæcum and this portion dissected away from the skin and layers of the abdominal wall. The whole portion of intestine, comprising hepatic flexure, ascending colon, cæcum, and attached portion of ileum, was removed en masse. (Fig. 5.) Packs were removed and the abdominal wound was closed by through-and-through silkworm gut sutures and interrupted chromic gut sutures for the muscles. Catgut drains were left in the upper and lower ends of the wound in view of the probability of infection from the contaminated skin. This operation, which lasted 1 hour and 10 minutes, was well borne by the patient.

The after progress was most satisfactory; some suppuration, as was expected, took place in the wound, but this finally healed up soundly and the patient left hospital on June 25th, 1908. He is now in sound health.

Queen Anne-street, W.

STREPTOCOCCAL INFECTION IN DIPH-THERIA: OBSERVATIONS IN EIGHTY CONSECUTIVE CASES.

BY D. MORLEY MATHIESON, M.A., M.D. EDIN., D.P.H., LATE BACTERIOLOGIST AND ASSISTANT MEDICAL OFFICER OF HEALTH, BURGH OF LEITH.

THE frequent occurrence of isolated phenomena about the twelfth or thirteenth day of an attack of diphtheria was first called attention to by Sevestre and Martin. phenomena which they described consist of one or more of the following: (1) a cutaneous eruption (most frequently scarlatiniform, but in a few cases a simple erythema); (2) joint pains; (3) albuminuria; and (4) general constitutional disturbance, more or less marked. Sevestre and Martin, and later Roux, suggested that the frequency with which these phenomena developed on or about the thirteenth day seemed to indicate that they were the symptom-complex of a secondary disease, with an incubation period of 13 days, the infection occurring at the time of invasion of the diphtheria. They further suggested that the cause was organismal and probably streptococcic, reasoning from the facts (1) that they

frequently found evidence of mixed infection in the bacteriological examination of the throats of these cases; and (2) that they occasionally found similar symptoms develop in pure streptococcic infections of the throat. Antitoxin, they were inclined to believe, had the effect of lowering the resistance of the organism to the attacks of this secondary infection, just as suppuration is more liable to occur in a part poorly supplied with blood.

The following notes refer to observations made in 80 consecutive cases of diphtheria admitted to the Infectious Disease Hospital, Leith. A bacteriological examination of the throat of each case was made on admission and at intervals during the stay in hospital, and the clinical progress was recorded. In 9 of the 80 cases a marked streptococcal infection of the throat was found at one time or other in the course of the disease. Out of these 9, 5 developed symptoms corresponding to those described by Sevestre and Martin about the thirteenth day. In the remaining 71 cases where no streptococcal infection of the throat was at any time found, 2 showed epiphenomena about the thirteenth day. In other words: (a) 55 per cent. of the streptococcal cases developed "thirteenth day" symptoms; and (b) 2.8 per cent. of the non-streptococcal cases developed these symptoms.

These results, although they refer to only a limited number of cases, seem to suggest that there is some connexion between the streptococcus infection and the "thirteenth day" phenomena. (As to the part played by antitoxin in lowering the resistance of the tissues to the streptococcic invasion, it appears to be as probable that the lowered resistance is due to the diphtheria bacillus and its toxins, acting locally and generally.)

The following cases are illustrative:

CASE 1.-A woman, aged 21 years, was admitted with marked inflammation of both tonsils and a slight filmy patching on their inner surfaces and on the uvula. Swabs taken from the throat showed a few polar-staining Klebs-Löffler bacilli and streptococci in long chains. The temperature reached the normal in six days, during which time the throat symptoms gradually cleared up. On the thirteenth day albumin appeared in the urine and a fine punctate rash was seen covering the chest, the upper part of the abdomen, the upper arm, and the back, being very closely aggregated. There was no sickness or headache, and the tongue was not furred. Sore throat was not complained of; examination revealed streptococci still present, but no diphtheria bacilli. The albuminuria lasted for two days; the rash was of short duration, being practically gone on the evening of the day when it appeared.

CASE 2.—A boy, aged 9 years, came in with a localised patch on the right tonsil. A swab was taken and culture showed Klebs-Löffler bacilli and a few streptococci. The throat cleared up rapidly. On the eighth day an urticarial antitoxin rash developed, lasting 48 hours. On the four-teenth day the patient complained of some pain in the throat and of pain in both shoulders and in the left elbow. In the evening the temperature rose to 100 8° F. Examination of the throat showed a pure culture of streptococci. On the next day the temperature was down, the throat was not painful, and the joint symptoms, though still present in the left shoulder and elbow, were much less severe. On the sixteenth day the patient was quite well. A swab taken from the throat showed that a few streptococci were still

present. CASE 3.—A boy, aged 2½ years, on admission to hospital was found to have red, swollen tonsils, with some indefinite patching. Culture showed diphtheria bacilli, streptococci, and staphylococci. The temperature, which was 102 4° F. on admission, reached the normal on the third morning, and the local symptoms cleared up. Convalescence was un-

interrupted, except that on the evening of the twelfth day the child became restless and fretful. When the right ear was examined he cried, and was evidently suffering pain. On the following afternoon a discharge came from this ear, and relief was experienced at once. The discharge, which was scanty, continued till the fifteenth day and then stopped. Examination of the discharge showed streptococci and a few

The following is a brief summary of the seven cases in which

"thirteenth day" phenomena were observed:—(a) Streptococcal cases: (1) punctate erythema + albuminuria; (2) sore throat + joint pains + rise of temperature (100.8° F.); (3) otorrhœa; (4) punctate erythema; and (5) x 2

punctate erythema + rise of temperature (99.40). (b) Nonstreptococcal cases: (1) erythema multiforme; and (2) ,punctate erythema + rise of temperature (99.8°).

I have to thank Dr. W. Robertson, medical officer of health, Leith, for permission to publish the above observations. Norwich.

FURTHER REPORT ON A CASE THORACOSTOMY FOR HEART DISEASE.

BY ALEXANDER MORISON, M.D. EDIN., F.R.C.P. LOND. & EDIN.,

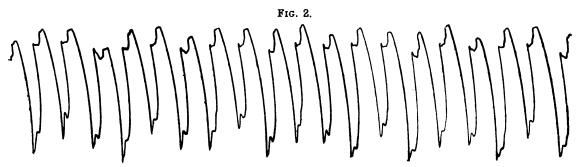
-SENIOR PHYSICIAN TO THE GREAT NORTHERN CENTRAL HOSPITAL.

In THE LANCET of July 4th, 1908, there appeared an account of the first case operated upon in this country by thoracostomy for heart disease. The operation was not undertaken for the release of costo-pericardial adhesion but for excessive hypertrophy in aortic valvular disease associated with severe and frequent attacks of cardiac pain. The case

had occasional attacks of pain, usually at night, and which were relieved by inhaling nitrite of amyl. These attacks are, however, according to the patient, of much less frequent occurrence than prior to the operation. He has been taught the light trade of a hat-shape maker, and is endeavouring to earn his livelihood by this means. For a time he travelled to and from the City from his residence in Hornsey, but the journey was found to be too fatiguing for him. He reported himself at the hospital on July 5th, 1909, when the following note was made of his condition. He states that he has recently had a little more pain during the night when lying down, but that the great relief to his discomfort which followed the operation is still maintained. He looks well and weighs 8 stones 7 pounds, which is heavier than any previous weight except one, on June 25th, 1908, when he had just returned from a convalescent home. The pulse-rate is 96-114 and its rhythm regular. The instrumental determination of the blood pressure was omitted on this occasion, but a few days later was found to be 140 millimetres of mercury with the Riva-Rocci instrument for the systolic, and 80 millimetres for the diastolic, pressure. The ribless interval in the præcordia measures 3 by 4 inches, as it did soon after the operation—that is to say, there has



July 5th, 1909. Cardiogram taken 34 inches to the left of the xiphoid process. Respiratory undulation shown. Rate of pulse 96.



July 5th, 1909. Cardiogram taken 4 inches to the left of the insertion of the fifth rib. Respiratory undulation shown.

July 5th, 1909. Right radial sphygmogram.

was under my care at the Great Northern Central Hospital, been no distortion or shrinkage of the decostated area. highly satisfactory and continue so. In the editorial comments on the case the desire was expressed to learn more of its future progress. As more than a year haelapsed since the operation, I am now able to afford this information.

Since leaving the hospital on June 6th, 1908, there has been no occasion for the re-admission of the patient. He has: reported himself from time to time, stating that he continued comparatively free from discomfort but that he still

and the operation was performed by Mr. Ewen C. Stabb heart pulsates powerfully in it and the hypertrophy of the on May 1st, 1908. The results of the operation were organ appears to have somewhat increased, the systolic impulse impinging rather more upon the seventh rib than it did a year ago. There is tactile systolic thrill over the aortic area to the right of the sternum and in the supra-sternal notch. There is a systolic and diastolic bruit most audible in the second right interspace and a systolic bruit of high pitch at the apex conducted towards the axilla and quite distinct from the aortic bruit. In the situation of the fifth left interspace there is still slightly diminished cutaneous sensibility. It may be remembered that this was very marked after the operation over an area of 2 by 4 inches, and was doubtless due to division of the intercostal nerves

in this situation. The respiratory rate is 30 and the lungs normal. The patient is otherwise healthy.

The accompanying cardiograms and sphygmogram show the nature of the pulsations, which, it will be observed, are vigorous and modified in delineation according to the site of application of the receiver, the larger and more powerful excursions of the lever being taken from a portion of the heart which received better the left ventricular thrust. The act of inspiration diminishes tactile cardiac impulse, as may be seen in the tracings.

The continued relief which has been afforded in this case from severe attacks of pain usually described as cardiac and regarded as one of the forms of angina pectoris is of interest in its bearing upon the etiology of that distressing symptom in such cases. A reference to details of the operation 2 shows that the interosseous muscles were removed within the area of operation from the fourth and fifth interspaces, and, as I have stated, anæsthesia to pain, touch, and temperature was induced over a considerable area by division of the fifth and sixth intercostal nerves. Although the degree of insensibility now is neither so marked nor so extensive as shortly after the operation, it may still be detected. Owing largely to the comparative insensibility of the viscera on handling them it has been suggested 3 that visceral stimuli provoking pain find expression in, or are referred to, associated areas in the somatic distribution of the nervous system, rather than in the organs themselves. The radiation of cardiac pain to the arm and in other directions lends some support to this supposition. In the case I have related, however, while the amelioration of the painful symptoms is very marked and the frequency with which attacks supervene greatly lessened, they nevertheless still occur and are relieved by the use of nitrites. As I have stated, the region in the thorax—the præcordia—so frequently the site of pain in such cases, has been considerably mutilated and anæsthetised, and in this case certainly I do not think we can ascribe the referred pain to the thorax. The patient, moreover, when asked to localise his pain, refers rather to the manubrium sterni than to the præcordia. It seems clear, therefore, that in this case the referred pain of the anginous attacks can scarcely be attributed to a reflex stimulation of the related somatic distribution, but to some stimulation of other nerve territories, in all probability endocardial or endovascular in situation. And what is true of this case I believe to be true also of many others.

It is one of the assumptions of current physiology that the viscera have little sensibility. Before dogmatising on this point it will be well to await a more perfect knowledge of the anatomy of the cardio-vascular nervous system. When that is attained we may also require some modification of our present conception of the physiology of visceral nervous sensibility. For example, eight years ago I found on examining the heart of a patient who had died from angina pectoris with coronary arterial disease that nerve cells existed in a coronary vessel internal to its muscular coat, and I am not aware that such intravascular innervation is recognised by anatomists, or a purely motor function attributable to cells in this situation. It may therefore be maintained that the reference of visceral pain to the somatic innervation is at least quite as much an assumption as its reference to the endocardium or endarterium. Present evidence in my opinion is rather in favour of the latter than the former assumption. But leaving in abeyance the decision of this point, the efficient cause of the attacks in the case I have related may be reasonably assumed to have been in great measure the muscular erythism induced by the costal stimulation of the hypertrophied and powerfully pulsating organ, and the indisputable fact is that thoracostomy has in this case been followed by notable amelioration of cardiac pain. This can scarcely be attributed, in view of the whole clinical history of the case, to any other cause than the removal of the costal barrier to freer and more expansive cardiac pulsation, in consequence of which the erythetic crises are less frequently provoked.

Upper Berkeley-street, W.

Loc. cit.
Mackenzie, "Diseases of the Heart."

A SOMERSET CENTENARIAN. — Mr. Robert Chidgey of Williton died on Nov. 8th. He celebrated the 101st anniversary of his birthday last August.

WITH REGARD TO ITS CONNEXION WITH THE DOG AND THE BUG (CONORRHINUS).

BY C. DONOVAN, M.D., B.CH. R.U.I., MAJOR, INDIAN MEDICAL SERVICE.

NICOLLE, of the Pasteur Institute, Tunis, has made out a strong case concerning the association of infantile kala-azar and the dogs of his neighbourhood. He examined the deadbodies of 222 dogs and found four infected with leishmaniosis, a fairly large percentage. At my request Nicolle very kindly sent me a slide of the splenic smear of his dog No. 1; in this preparation I have been able to confirm the presence of leishmania; it is true the parasites are very sparsely distributed in the film, but there is no doubt of their identity.

I have carried out the examination of the splenic smears of the stray dogs destroyed this year in the limits of the corporation of Madras; the investigation began on May 12th, and up to August 14th 1150 dogs have been carefully examined for the presence of leishmania in their spleens, but none out of this large number contained anything similar to the parasite sought for. The dogs were obtained from within the limits of the city of Madras, and 256 of the number were from Georgetown, our endemic area for kalazar.

The dogs were destroyed in a lethal chamber by means of CO₂ gas, and a few minutes after death their abdomens were opened, the spleen exposed, and a smear taken, so the preparations examined by me were very fresh and virtually as good as splenic smears obtained intra vitam. The only parasites found were the so-called leucocytozoon of the dog; 94 out of the 1150 were infected by this organism, a percentage of 8·17. There were no certain evidences of piroplasma (babesia) or trypanosoma infection.

Nicolle has also succeeded in inoculating dogs with his Leishmania infantum; I have tried the same experiment with L. donovani in two instances, but have not met with success.

Dog No. 1, marked "Alpha," a bitch, aged about 4 months, healthy but for the presence of the so-called Leucocytozoon canis in her peripheral blood, was inoculated intrahepatically on the evening of July 10th with 1.5 cubic centimetres of blood removed by exploratory syringe from the spleen of kala-azar patient No. 23 of 1909, who was in a moribund condition. The lapse of time between taking blood from the spleen of the human subject and inoculation into the dog did not exceed half a minute. The animal was destroyed on the evening of August 4th, 23 days after inoculation, as it showed signs of dumb rabies. No leishmania was found in smears of the spleen, liver, or lungs; the preparations of these organs were made immediately after death.

the spieen, liver, or lungs; the preparations of these organs—were made immediately after death.

Dog No. 2, marked "Beta," a young bitch about 7 or 8 months old, healthy, was inoculated on the morning of July 12th, similarly as dog No. 1, from kala-azar case No. 17 of 1909, moribund. This dog, too, developed signs of dumb rabies on August 2nd, 21 days after inoculation; she was chloroformed the same day and a liver puncture was made while under the influence of the anæsthetic; she was then destroyed. The blood taken by liver puncture intra vitam contained no leishmania, neither did the smears of the spleen and liver, made immediately after death, show any evidence of the existence of the parasite.

Patton has previously carried out in Madras similar experiments on three dogs with negative results.

I have recently suspected a reduviid bug (Conorrhinus rubrofasciatus, de Geer) as having some relationship with the causation of kala-azar in Madras; in other words, as being a possible transmitter of the disease. My endeavours in procuring the pullulation of Leishmania donovani in its guts have not so far succeeded. I give here an extract from my paper in the Annual Report of the Government General Hospital, Madras, for 1908:—

The insect in question is a black and red bug (Conorrhinus rubro-fasciatus) of large dimensions, about 20 to 25 millimetres—or roughly

¹ Nicolle: Le Kala-azar Infantile, Annales de l'Institut Pasteur, tome xxiii. (1909), pp. 361-4(1 and pp. 441-471.

2 Patton: Inoculation of Dogs with the Parasite of Kala-azar, &c., Parasitology, vol. i., p. 311.

DR. PETER PATERSON: TWO RARE SURGICAL CONDITIONS.

speaking, about an inch in length; it comes occasionally to the light of a lamp into rooms at nights, and appears to be widely spread in Madras. It is popularly supposed to suck the blood of human beings, and also to feed on the common bed bug; from its latter propensity it is called, according to some of my informants, the "mother of bugs," on account, I suppose, of her unmatronly habit of devouring her smaller relations. This predatory habit on bed bugs is also attributed to its European representative, Reduvius personatus; so a certain amount of credence is to be placed on one of the above popular statements of its habits. Both the male and female insects I have captured contained either fresh or digested mammalian blood in their guts, whether human or not I regret I am unable at present to determine, but hope to procure the opinion of a bacteriologist at some subsequent date. These bugs readily suck human blood when placed, confined in either a glass-bottom box or test-tube, on the body of a person; they insert their proboscis and begin to suck as if to the manner born. Both the male and female imagines suck human blood, but the nymphs are much more bloodthirsty, starting to insert speaking, about an inch in length; it comes occasionally to the light of blood when placed, confined in either a glass-bottom box or test-tube, on the body of a person; they insert their probects and begin to suck as if to the manner born. Both the male and female imagines suck human blood, but the nymphs are much more bloodthirsty, starting to insert their proboscis immediately they are placed on a patient, while the adults take a minute and more before they settle down to a meal. In the gut of the adult insects in nearly 30 per cent. large numbers of flagellates of the genus Crithidia are found but no Herpetomonas. This reduvild bug has a wide distribution both in and out of India. Distant in the Fauna of British India Series, Rhynchota, Volume II., page 286, gives the following habits: Sylhet. Bombay, Borghat, Calcutta and Mysore, Ceylon, Andaman Islands, Burma, Toungoo and Mandalay. Outside India it is widely spread throughout the Malayan Peninsula and Archipelago; recorded from Madagascar, West Africa, and generally found in the Southern Nearctic and Northern Neotropical regions and in the Antilles. As mentioned before, this insect's habits are nocturnal; both the male and female, the former more frequently, fly into the verandah or room attracted by light. It is found all the year round, and I have procured specimens from all parts of the city of Madras. A strange and interesting coincidence is Darwin's account of a species of the same genus, found in the Pampas district in South America; I quote from his "Voyage of the Beagle" (page 330 of the 1873 edition). "We slept in the village of Luxam, which is a small place surrounded by gardens, and forms the most southern cultivated district in the Province of Mendoza; it is five leagues south of the capital. At night I experienced an attack (for it deserves no less a name) of the Benchuca, a species of Reduvius, the great black bug of the Pampas. It is most disgusting to feel soft wingless insects, about an inch long, crawling over one's body. Before sucking they are quite thin, but afterwards they become round and bloated with blo

I have had recent proof of this bug feeding voluntarily on human blood. A medical student of mine, named S brought me a nymph of this insect, of about three months growth, on July 30th. The story he related was: "At about 3.30 P.M. on July 29th, 1909, while just waking up trom sleep, I felt something like ants biting me on the leg. When I got up I searched for the ants; I saw a nymph of the Conorrhinus running away from the spot." The insect was full of blood; to make sure of the nature of the gut contents, I despatched the nymph the same day to Major W. D. Sutherland, I.M.S., Medical College, Calcutta, for the favour of his opinion as to whether the blood contained in the gut of the bug was human or not. I received a reply from Major Sutherland on August 6th to this effect: "I crushed the bug at 2 P.M. yesterday (August 3rd)-i.e., 119 hours after the alleged bite. On preparing an extract with 0 85 per cent. NaCl solution and testing this with antihuman fowl serum of known activity and specificity I obtained an immediate and copious reaction. No action with anticanine serum. No ruminant reaction. So we may take it that the nymph had bitten man alone at her last meal at all events." On August 5th I sent Major Sutherland three male imagines of the bug; the results were negative; another male imago on August 13th gave similar results. I am continuing to encroach on Major Sutherland's kindness, and have quite recently sent him the gut contents of a female imago full of fresh mammalian blood, and expect to receive a positive pronouncement this time.

The interest centring round this reduviid bug is the coincidence of the find in Brazil by Chagas of an insect of the same genus transmitting trypanosoma to human beings. It is true Chagas's statements are astounding; time

will, however, clear any doubts that at present exist on his discovery. As mentioned in the excerpt of my report of the General Hospital for 1908, Conorrhinus rubrofasciatus, to the extent of 90 per cent., harbours the flagellate, crithidia. Could Chagas have mistaken these parasites for trypanosoma? It may be mentioned, en passant, that the figures given by Kleine' in the Deutsche Medizinische Wochenschrift, as the developmental forms of T. gambiense, are identical with those of the crithidia found in the proventriculus and stomach of Conorrhinus rubrofasciatus. There appears to be no limit to the existence of the parasitic flagellates in animal organisms, but what is more astonishing and subversive of previously held views is the occurrence of these parasites in the latex or milky juice of plants. Lafont has recently found herpetomonas (leptomonas) in the latex of Euphorbia pilulifera in Mauritius. I have confirmed his find and have discovered these flagellates, small narrow forms, in the latex of the same plants grow-The organisms differ from the known ing in Madras. flagellates parasitic on animals and will doubtless be placed in a new genus, for which I suggest the name of Phytomonas. Madras.

TWO RARE SURGICAL CONDITIONS:

(1) A CASE OF ACUTE TORSION OF THE SPLENIC PEDICLE: RECOVERY AFTER SPLENECTOMY; AND (2) A CASE OF FLOATING LIVER CURED BY OPERATION.

BY PETER PATERSON, M.B., C.M. GLASG., SURGEON TO THE GLASGOW ROYAL INFIRMARY.

IN THE LANCET of Sept. 25th, 1909, p. 917, Dr. Ian Macdonald and Dr. W. A. Mackay of Huelva report a case of acute torsion of the pedicle of the spleen in which they had the satisfaction of saving their patient after removing the strangulated viscus. They also draw attention to the fact that this accident is practically never diagnosed, a circumstance due, probably, to the rarity of its occurrence. If this be the explanation, then the more frequently cases are reported the less likelihood is there of the existence of the condition being overlooked when it does occur; hence the reason for wishing to put on record the following case.

(1) The majority of the cases that have been published have occurred in women who have been pregnant or in whom the organ has become enlarged from malaria, but the subject of this notice was a nulliparous girl, aged 16 years, in whom there was no suspicion of malaria. For five months previous to her admission to hospital she suffered from frequent, almost daily, attacks of abdominal pains of a colicky nature. These pains were localised to the lower part of the abdomen and were never accompanied with vomiting. They were most severe when she lay flat on her back, and were relieved by sitting up in bed. The day before she came under observation the pain became very severe and, for the first time, was accompanied with almost constant vomiting of bilestained fluid. The pain extended across the abdomen from one iliac crest to the other, never altered its position, and, like the previous less severe attacks, was relieved by sitting

up. Flatus was being passed fairly freely.

Examination revealed the presence of a smooth, rounded tumour extending from one iliac fossa to the other, and from the umbilicus to 1 inch above the symphysis in another. It was very firm to the touch, very tender, and practically fixed. Neither rectal nor vaginal examination revealed anything abnormal. The temperature was 103° F., and the pulse was 120. The white blood cells gave a count of 10,000 per cubic millimetre, of which 79 per cent. were polymorphs and 4 per cent. lymphocytes. The red cells polymorphs and 4 per cent. lymphocytes. numbered 5,440,000 per cubic millimetre.

When the abdomen was opened below the umbilicus the mass, which was slightly adherent to the anterior abdominal wall, was found to consist of a greatly enlarged spleen with adhering intestine and omentum. The pedicle had undergone four complete turns, and the vessels, which were about the diameter of the index finger, were completely thrombosed.

Chagas: Neue Trypanosomen, Archiv für Schiffs- und Tropen-Hygiene, Februar, 1909, pp. 120-122; and Über ein neue Trypano-somiasis des Menschen, Ibid., Juni, 1909, pp. 351-353.

 ⁴ Kleine: Weitere Untersuchungen über die Aetiologie der Schlafkrankheit, Deutsche Medizinische Wochenschrift, Jahrgang 35, pp. 1257-1260.
 5 Lafont: Sur la Présence d'un Parasite de la Classe des Flagellés dans le Latex de l'Euphorbia plulifera, Comptes Rendus de la Société de Biologie, tome lxvi., p. 1011.

An incision made into the substance of the spleen did not bleed. The adhesions were separated; the pedicle was ligated, the organ was removed, and the abdomen was closed without drainage. Within the next four days the temperature had fallen to normal and the general condition was satisfactory, but she then developed a severe attack of bronchitis, the temperature registering 104°. For five days the patient was acutely ill, but the symptoms gradually subsided and the remainder of her residence in hospital was uneventful. Three weeks after operation the red blood cells had fallen to 4,320,000, while the white cells were practically stationary, though the lymphocytes had risen to 10 per cent. The observation made by several writers that the appetite is greatly increased after splenectomy was not confirmed in this case. The spleen after removal weighed 324 ounces.

(2) Possibly even a rarer condition than wandering spleen is that in which the liver has become displaced from its normal position. One such case has come under my observation. In December of last year the patient presented herself with the usual symptoms of a floating kidney, and on palpation the right kidney could be distinctly felt near the umbilicus. The viscus was fixed to the posterior abdominal wall through a lumbar incision, and at the time of operation it was remarked that the liver extended somewhat lower than usual. Four months later she returned complaining of a severe dragging pain in the right side. The pain, which extended through to the lumbar region, was relieved when recumbent and aggravated when in the erect posture. There was neither jaundice nor ascites; the appetite was good and meals had no effect on the pain. The bowels were regular. The patient, who was engaged in housework, was well nourished but not stout. She had never been pregnant and the abdomen was neither lax nor protuberant. On examination the liver dulness was found to extend from 1 inch above the costal margin down to the right iliac crest. The under surface looked to the left and slightly downwards, so that besides being displaced downwards it was rotated on its antero-posterior axis. Palpation did not cause pain. Glénard's symptom of retraction of the umbilicus, from traction on the falciform ligament, was absent.

The abdomen was opened by a vertical incision through the right rectus. On passing the hand into the peritoneal cavity the liver could now be easily rotated into position. With a gauze sponge the posterior and upper surfaces of the right lobe and also the under surface of the right side of the diaphragm were vigorously rubbed so as to raw the surfaces slightly and thus permit of adhesions forming between the two when the organ lay in position. The anterior surface of the liver near its lower margin was next fixed to the anterior abdominal wall close to the costal margin by four stout catgut sutures, each suture passing through the abdominal wall on one side of the incision, then well into the liver substance, and out through the abdominal wall on the other side of the wound. When all the four had been passed they were tied, but not so tightly as to cut through the friable liver tissue. The skin wound was closed by a separate continuous suture. The patient was dismissed three weeks after the operation feeling well. When seen four months later the liver was found in position and she was able to perform her household duties without any discomfort.

In this particular case it seems to me that Depage's operation of excising a portion of the abdominal wall so as to increase the intra-abdominal pressure and thus keep the liver in position would have been useless, as the walls were neither relaxed nor unduly prominent. I also fail to understand how increased intra-abdominal pressure can prevent a heavy organ like the liver from sinking towards the pelvis once its attachments have become stretched, as the liver could easily slip downwards and the intestines pass upwards without any increase in the capacity of the abdomen being necessary.

Glasgow.

Donations and Bequests.—Over £500 have been already subscribed in response to the appeal of the committee of the South Devon and East Cornwall Hospital for increased financial support, in order to repay the debt of £3500 which exists against the institution.—The late Mrs. M. L. Toby of Exeter has bequeathed £300 to the Devon and Exeter Hospital and £200 each to the Exeter Dispensary and the Exeter Eye Infirmary.

Clinical Hotes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF SPORADIC ELEPHANTIASIS.

BY HUGH BARBER, M.D. LOND., HONORARY PATHOLOGIST TO THE DERBYSHIRE BOYAL INFIRMARY.

THE patient is a widow, 65 years old, who keeps house for her sons; she has lived in Derby for the last 30 years and has never been abroad. She has had three children, the youngest being 30 years old. There is nothing exceptional in the family history. As to previous diseases, she enjoyed very good health until four years ago; at that time she had an attack of sickness and diarrhea, with pains in the abdomen, which lasted about a week. Since that time she has suffered from two attacks of biliary colic, followed by jaundice. Concerning the present disease, about eight months ago the legs began to swell; they became painful, especially after standing; they felt stiff and heavy, and there were cramp-like pains at night. The swelling was noticed before any pain or tenderness developed. During the first few weeks that the legs were swollen she had several attacks of vomiting, sometimes felt faint, and says she felt "lightheaded" at times. She had no shivering attacks and was

not confined to bed.

On examination on June 2nd, 1909, the following record was made: "The patient is a tall, stout woman, weighing about 13 stones. The heart and lungs are healthy. The abdomen is covered with 2 inches of fat; there are no signs of ascites or other abnormality. No pelvic tumour is revealed by vaginal or rectal examination. There are no enlarged by vaginal or rectal examination. lymphatic glands. The legs are much swollen, chiefly from the knees to a point just above the ankles. The right calf measures 17 inches in circumference and the left 19 inches. The swelling does not pit on pressure, it is uniformly firm, and the skin over it cannot be taken up between the finger and thumb. There is some brownish pigmentation, sweating is deficient, sensation is somewhat numbed, and there are small venules visible, and a few knots of varicose veins. The swelling ceases abruptly at the ankle-joints: the skin and subcutaneous tissues of the feet and toes are quite normal. Above the knees tortuous dilated lymphatic vessels, of about the size of a goose quill, can be felt under the skin; they are rather tender at times. The tenderness, both in this situation and lower down, is very variable, and frequently much more marked in one leg than the other. The breasts and external marked in one leg than the other. The breasts and external genitals are normal. The urine has on no occasion contained chyle or other abnormality. Examination of the blood reveals nothing abnormal; the red corpuscles and hæmoglobin are both about 90 per cent. There is no leucocytosis; a differential count shows 60 per cent. polymorphonuclear cells and 30 per cent. lymphocytes; there is no eosinophilia.'

As regards the course of the case, the patient has been under observation for two months, in which time there has been very little change; at times the legs are very tender, at others not at all so. There have been no symptoms of fever. The temperature, taken rather irregularly, has not been above normal. Elastic bandages and massage have much improved her walking powers, she has less pain at night, and thinks the legs are less hard, but they are no smaller.

Remarks.—This case can hardly be said to add anything to the etiology of elephantiasis, which, in sporadic cases, apart from filarial infection, is somewhat obscure. But the fact that the cause of such elephantiasis is not easily explained may make the case worthy of record. There is no evidence of a pelvic tumour or of disease of any lymphatic glands. Recurrent attacks of an inflammatory nature in the lymphatics, which explain some of these cases, usually give rise to much pain and to fairly pronounced constitutional symptoms. In this case the swelling preceded any pain, and although there were some constitutional symptoms, they were slight and did not interfere with the patient's housework. I have twice examined the blood at night for filarial parasites with negative result. The complete absence of

disease in the feet, the most striking feature when one looks at the legs, is unusual, I believe.

Derby.

SIMULTANEOUS FRACTURE OF THE PATELLÆ.

By H. Betham Robinson, M.S. Lond., F.R.C.S. Eng.,

SURGEON TO ST. THOMAS'S HOSPITAL.

In the last issue of THE LANCET Mr. William Sheen describes a case of this injury and draws attention to the rarity of its occurrence. The following case will be found to bear upon the paper just mentioned.

A woman, aged 30 years, who had met with this accident, was admitted under my care into St. Thomas's Hospital in November, 1903. She was walking (or running) downstairs with a tray in her hands when she slipped down about three stairs; she fell forwards and was "quite sure she did not fall on her knees," but tried "to throw herself back." There was no sign of any local bruising over the knees as might be due to a direct blow. Both patellæ were fractured transversely, the right at the junction of the upper and middle thirds and the left across the middle. There was fluid (blood) in both knees. On the sixth day both patellæ were wired and she made an uninterrupted recovery with firm union.

In this case the fractures apparently were due to indirect violence.

Upper Wimpole-street, W.

A NOTE ON A CASE OF INFLUENZA WITH MARKED CEREBRAL SYMPTOMS.

By H. V. McMahon Dillon, L.R.C.S. Irel., L.R.C.P. Irel., L.M.,

LATE DEMONSTRATOR OF ANATOMY, CATHOLIC UNIVERSITY, DUBLIN.

I was called to see a young man, aged 20 years, at 8 A.M. on Feb. 15th, 1908. I found him lying on his bed in a semiconscious condition, unable to be roused; the teeth were tightly clenched, the face was cyanotic, and the breathing was stertorous and accompanied by groaning. The heart's action was fast, tumultuous, and occasionally intermitting, the pulse being 100 per minute, wanting in tone, small, and also intermitting. The pupils were irregular but dilated. He was capable of being roused temporarily by being spoken to in a loud tone of voice; the temperature was 101° F. I was informed that he had risen earlier and on walking to the door he felt giddy and so lay down again, and subsequently the symptoms just narrated gradually supervened. He was given the following draught soon after I saw him at 8 A.M.: Aromatic spirit of ammonium, 20 minims; liquor strychninæ, 3 minims; and water, 12 ounces. Soon after this he was removed to hospital. He remained in the same unconscious state till 10 a.m. When spoken to in a loud tone of voice and stimulated by a gentle slap over the bare chest and cheek he was roused temporarily again, and opening his eyes responded incoherently on being questioned, again relapsing to a semi-conscious condition but less marked than at first. He was given another draught similar to the first. He remained in a dreamy condition for the next few days and gradually under treatment regained his usual mental state, said to be generally of a reserved type.

On Feb 18th his face presented a cyanotic and scorbutic condition. His lungs on auscultation revealed slight symptoms of congestion at the bases, the air causing roughened sounds on inspiration and expiration, as is frequently noticed in connexion with cases of influenza. The temperature varied between 101° and 102° for five days, falling occasionally to 97° and rising to normal, as has been noticed in influenza and other microbic diseases, as malarial fevers, when they affect the nerve centres. He was treated with sulphate of quinine, 2½ grains three times a day, and was given an expectorant mixture as follows: Compound tincture of camphor, 3 drachms; carbonate of ammonium, 16 grains; and infusion of senega, 8 ounces. A tablespoonful every fourth hour. An aperient pill with half a grain of podophyllin resin added was given as required. The diet consisted at first of lemco daily; later, as he became able to take them, he had milk puddings and fish, and on the temperature becoming normal he was placed on solid meat diet. He received no stimulants. He was allowed to sit up on the seventh day, and left for change

of air on Feb. 25th, ten days after the first onset of symptoms, although he was still in a weak condition.

The unusual cerebral symptoms in this case make it probably worth recording. The patient had complained prior to these of slight coryza simulating an ordinary cold. His cyanotic condition was congenital, as was also the irregularity of the heart's action, and he was a subject whom the invasion of microbic disease would be likely to affect more seriously than another having greater resisting power constitutionally.

THE TREATMENT OF GONORRHEAL RHEUMATISM WITH A VACCINE.

BY J. McOscar, L.R.C.P. LOND., M.R.C.S. ENG.

THE treatment of various diseases with vaccines being now fully recognised by the profession the following case may be of interest.

On August 6th, 1908, a young patient was sent to me suffering from gonorrhoeal rheumatism. His trouble was contracted the previous June, and from that time he had suffered with a continuous discharge. For the last month he had been confined to bed with rheumatism. The usual line of treatment had been followed out, salicylates and injections given, with no curative result. I found the third metacarpo-phalangeal joint of his left hand very much swollen and intensely painful; in fact, he was nursing his left hand in a sling with his right. The same evening when he had retired to bed I injected 25 cubic centimetres of antigonococcus vaccine (Burroughs, Wellcome, and Co.) in the mid-scapular region on his left side, using strict aseptic precautions both to the skin and syringe. On my visit the next morning I found he had passed an excellent night with no pain. The site of the injection was showing a slight blush and fulness with a little tenderness on pressure. There was no rise of temperature or constitutional symptoms. I ordered him toget up out of his bed and recommended Dowsing electric light and heat bath as hot as he could bear it for 15 minutes, the joint being previously painted at the bath with liquor iodi fortis by myself. The joint was to be gently massaged by a trained hand afterwards for 15 minutes, no dressings applied, but a sling used. Every second day this was repeated for three baths. On August 10th, or four days following my first interview, the finger was in less pain, and he was able to bend it. On the 14th another 10 cubic centimetres of the vaccine were injected over the same area, the patient being in bed. Fromthe 15th until the 21st the baths and massage were continued every second day, but without any iodine application. On the 22nd the joint could be freely flexed into the palm and all the swelling had disappeared. No other joint was affected; the discharge ceased; treatment was discontinued. He reports himself up to the present time in excellent health.

Remarks.—These cases are as a rule of long duration and difficult to treat successfully—at least, I have always found them so. My patient was under treatment for 16 days, and left in less than three weeks. The vaccine has also proved of great benefit in other cases. Many patients have been treated by me for gonorrheal rheumatism with mineral waters, baths, mineral and electric, and massage, but in no case have I found such gratifying results as when giving vaccine.

Buxton.

BRITISH FIRE PREVENTION COMMITTEE.—The work of the British Fire Prevention Committee for the session that has just commenced includes the preparation and issue of reports in respect to a number of doors and roller shutters that have been recently tested by the committee and will be embodied in five reports. We understand that an elaborate report is also about to be issued by the committee on the flannelette question, which has been the subject of an extensive series of tests comprising some 450 specimens, and that two reports are in preparation on fire extinguishers, including a petrol extinguisher. The tests to be undertaken during the next month include a final series of door tests mainly relating to composite doors, whilst the matter of roofing materials will shortly occupy the attention of the committee.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

Exhibition of Cases.

A MEETING of this society was held on Nov. 8th, Dr. SAMUEL WEST, the President, being in the chair.

Mr. H. STANSFIELD COLLIER showed eight cases of Congenital Dislocation of the Hip treated by a modifica-tion of Lorenz's operation, and Mr. H. A. T. FAIRBANK showed three cases of Congenital Dislocation of the Hip after Lorenz's operation. The modification in Mr. Collier's method of operating was the pinching of the obturator nerve in the pelvis. This was done a fortnight before replacement was applied, and a weight extension of some 4 pounds was applied so as to stretch the paralysed adductor. Mr. Collier had employed this method 14 or 15 times since October, 1909. He reserved until some future occasion discussion of the considerations which led him to adopt this plan, and confined himself to the expression of a belief that the results were better than he had experienced previously, though he had to regret one case in which he failed to get reduction, and a second case in which the dislocation relapsed, to be successful, however, on the second occasion. He had found that the amount of violence necessary for reduction was much less, and that shock and pain were distinctly less, the amount of hæmorrhage being as a rule inconsiderable.—In the discussion which followed Mr. A. H. Tubby, Mr. E. Owen, and Mr. Charters J. SYMONDS took part, and Mr. Collier and Mr. FAIRBANK

Dr. T. D. SAVILL showed three cases of Spasmodic Tic treated by systematised exercises. The first case was that of a married woman, aged 48 years, who was sent to Dr. Savill by Mr. Henry H. Sturge on account of spasmodic blinking movements of the left eye and other facial muscles, which had existed in greater or less degree for 10 years. The movement had during the past two years spread to the neck, more particularly the left side, movements like a clonic torticollis. The disfiguring grimaces made by the patient prevented her going into society or public places and had latterly been attended by pain in the left supra-orbital region. Dr. Savill started treatment by systematised exercises to the head and neck on May 5th, 1909. The following prescription was also given twice daily for a time: Tr. gelsemii, m 5; liq. arsen. alk., m 3; ammon. brom., gr. x.; soda bicarb., gr. x., t.d.s. She carried out the systematised movements of the head and neck and respiration for 10 minutes at the first three, then four times daily, and finally every two hours. The clonic spasms soon became less pronounced and more under control, and in three months' time (i.e., in August, 1909) all the spasmodic twitchings had completely disappeared. The second case was one of generalised spasmodic tic with marked affection of the respiratory muscles in a female patient, aged 25 years. The clonic muscular twitchings began when she was about 10 years of age, after a fright from a dog. She was admitted under Dr. D. Ferrier into the National Hospital for the Paralysed and Epileptic in 1901 with generalised choreiform movements; they had persisted ever since and prevented her from doing any domestic or other work. From time to time thyroid enlargement had been noticed. The movements involved the upper extremities and she was continually attempting to smooth her hair back from her face. The head was affected with violent nutatory spasms, and the twitchings of the respiratory muscles produced recurrent gruntings. She was admitted to the West-End Hospital for Diseases of the Nervous System in February, 1907, where she was put upon systematised respiratory exercises and arm movements. At the end of two months the improvement was sufficient to enable her to bandle cups and saucers, and at the end of four months (May, 1907) the matron took her into the service of the hospital as a cleaner. No other treatment excepting exercises and purgatives was adopted. All her life she had been constipated. The twichings still persisted but only in a very slight degree, so that the patient was able now to take a situation as a domestic servant. In the third case the patient was a male, aged 18 years. The spasmodic jerky movements dated from a fright when he was six

Three days after his head began to shake vears old. spasmodically. The spasmodic movements gradually spread to the arms and thorax. He had attended the National Hospital and many other hospitals without relief. Whilst in the London Hospital he had to be put in an isolation ward because of the loud grunting and barking noises produced by his respiratory jerks. On Feb. 1st, 1909, he was started on a course of respiratory and sys-tematised exercises, which had been continued more or less up to the end of August, but without any appreciable effect. Dr. Savill said that all the three cases belonged to the same class of disease, clonic coördinate muscular spasms more or less beyond the control of the will. A very strenuous effort of will could control the movements for a short time only. Trousseau suggested gymnastic exercises for spasmodic tic (non-douloureux). Between 10 and 15 years ago, when Dr. Savill was honorary physician to the People's Palace Gymnasium and Polytechnic Gymnasium, he met with numerous cases of spasmodic tic among the pupils, and it occurred to him that if he could induce such patients to bend their attention steadfastly on normal systematised movements of the affected muscles, regularly and sufficiently often, the unstable paths and powers of inhibition would be re-educated. In nearly every case where the patient was able to give sufficient time and attention cure resulted. About five years ago Henry Meige contributed his classical lectures advocating the same procedure. The pathology of these spasmodic tics appeared to him to be fairly simple. Briefly, it consisted of an explosive motor impulse along a too well-beaten nerve track. The principle on which the treatment depended was the replacement of these explosive morbid movements by slow, rhythmical, systematic healthy movements of the same muscles at frequent intervals during the day, the patient's attention being fixed steadfastly on these movements. Some cases were incurable, but the recovery in Dr. Savill's first case and the improvement in the second case were striking. About three-fourths of his cases had improved. Dr. Savill noted that three of the cases of spasmodic tic which he had seen during the past 12 months presented, or had previously presented, thyroid enlargement.-Dr. L. G. GUTHRIE said that when "tics" became purely habitual exercises were of use, and Dr. SAVILL, in the course of his reply, agreed that in the early stages of "tics" exercises were of little use; it was necessary to wait till the "tic" had become habitual.

Dr. F. S. PALMER and Mr. C. A. BALLANCE showed a case of Traumatic Epilepsy successfully treated by operation.

Mr. W. H. CLAYTON-GREENE showed a case of Laryngectomy for Endothelioma. At the operation it was found
that the growth had spread into the pharynx and upper end
of the œsophagus, necessitating the removal of the whole
pharyngeal wall and the upper half inch of the œsophagus.
The wound was packed, a tube being sewn into the cut end
of the œsophagus. Later a Symonds's tube, still worn, was
introduced through the mouth. The operation was performed in March of this year; there were no complications.
Since then the patient had put on weight and only complained of a little local trouble just about the treacheal
wound, probably due to a deep ligature.

Dr. W. ESSEX WYNTER and Mr. T. H. KELLOCK showed

Dr. W. ESSEX WYNTER and Mr. T. H. KELLOCK showed a case of Osteitis Deformans in a married woman, aged 42 years, who eight years ago began to suffer pain in the ankles and legs after standing. Four years ago the patient first noticed the deformity of the left leg, the left femur being much thickened and bowed forward. The right femur was similarly affected to a less degree. The tibiæ were somewhat concave on the internal surface. A skiagram of the left femur showed the bone to be enlarged in all dimensions, and the shadow cast by it was abnormally dark.

Mr. V. WARREN Low showed a case of Abdominal Hydatids, the patient being a man who was shown before the society by Dr. Bertrand Dawson on Nov. 9th, 1903.

Dr. J. Walter Carr showed a boy, aged 15 years, described as a doubtful case of Cerebral Tumour. Dr. Carr pointed out that the exact position and nature of the tumour were quite uncertain, but the fact that the patient had remained without symptoms since January, 1908, until the end of last September, when the patient was readmitted to hospital on account of a rather sudden return of symptoms, suggested that it was probably tuberculous.

Dr. F. S. LANGMEAD showed two cases: the first was one

of Rheumatoid Arthritis in a boy the subject of polyarthritis, the wrists, knees, ankles, elbows, and many of the smaller joints of the fingers showing the characteristic spindle-shaped enlargement without evidence of being overgrowth. The tendons were commencing to contract, causing slight deformity and a stooping, shuffling gait. Dr. Langmead observed that treatment with iodide of potassium and guaiacol carbonate was certainly producing slow improvement. His second case was that of a boy showing Congenital Malformation of the Arms. These limbs were greatly shortened, due chiefly to suppression of the radius and ulna on each side. There were only two digits on the right side and one on the left.

Dr. WILFRED HARRIS showed a case of Chronic Syphilitic Poliomyelitis in a woman.

Mr. E. M. CORNER showed a case of Pott's Fracture 15 months after treatment by operation.

OPHTHALMOLOGICAL SOCIETY.

Measurement of the Desire for Binooular Vision .- Exhibition of Cases and Specimens .- Oxycephaly.

A MEETING of this society was held on Nov. 11th, Dr. G. A.

BERRY, the President, being in the chair. Mr. N. BISHOP HARMAN read a paper on the Measurement of the Desire for Binocular Vision by means of the Diaphragm Test. He said that individuals showed variation in the sensibility of their cerebral functions. Colour and light sense, smell, taste, and hearing all varied, and the muscle sense that maintained body balance no less. There were extremes of mental defect and striking endowment, but within the socalled average capability there was also a wide range of variation. So far the capability for binocular vision had escaped a similar critical study. Our tests either determined the presence or absence of binocular vision, or were complicated—as in the use of prisms and stereoscopes—by muscle stresses which vitiated the results. The diaphragm test was a pure test for binocular vision, and by a variation of its mode of application it was possible to measure the desire for binocular vision as easily as the stature or weight of a man could be ascertained. The test-cards seen through the hole in the screen of the test were viewed for their greater part by each eye separately, but a median band was seen by the direct vision of the two eyes together; this median band acted as a balancer to the eyes and their controlling mechanism; for this reason it was called the "ocular poise." Experiments showed that different individuals, and the same individual under different conditions, required different breadths of ocular poise, the more perfect the binocular vision the narrower the ocular poise required to maintain the eve balance; hence the smallest measure of the ocular poise became the measure of the desire for binocular vision. The standard pattern diaphragm test had a fixed hole in the screen of 17 millimetres; the instrument to measure the ocular poise had a variable aperture. The aperture was varied by means of shutters which were moved by suitable gearings; the variation of the ocular poise was shown automatically upon a scale. The scale had a compensating adjustment for the varying width between the eyes of different subjects, so that the measures given by the test became truly comparative. Examination of binocular vision by this means showed how essentially cerebral was the controlling mechanism of the eyes, how greatly it varied in different individuals, and how profoundly it was affected by conditions of ill-health and fatigue. There seemed little doubt that on these points the test opened up many possible fields for physiological and psychological inquiry. To the ophthalmic surgeon the new test had a particular value for those cases of occasional divergent squint with feeble convergence which were due to defective cerebral control. These were those for which at present we had been able to do but very little. With the variable aperture to the diaphragm test the ocular poise could be made so large as to present an attractive point of binocular fixation; and with practice control of the eyes might be developed, so that the balance could be maintained under conditions of gradually increasing difficulty.

Mr. Sydney Stephenson showed a case of Pigment on

rare type of persistent capsulo-pupillary membrane. PRESIDENT agreed with Mr. Stephenson's views.

Dr. RAYNER D. BATTEN exhibited and demonstrated an Instrument for the Examination of the Eye Under Water in the Erect Position, and showed its applications as a means of treatment. In glaucoma, for instance, after removing the instrument the haze of the cornea disappeared. He had not had any untoward incidents with it.

Mr. E. A. DORRELL showed a case of Choroidal Degeneration.

Mr. W. M. BEAUMONT read a paper on Oxycephaly, illustrated by a number of lantern slides. He did not agree with Patry in considering that the term "syndrome" should be applied to the association of oxycephaly with optic neuritis or atrophy, as the nerve involvement was secondary result which might or might not follow. Very considerable interest had been taken in the disease in recent years since the articles by de Michel and A number of cases had been recorded in the United Kingdom, but he thought that the credit of first pointing out the clinical symptoms of oxycephaly was due to Wm. Mackenzie of Glasgow. His description had strangely failed to attract the attention which it deserved. This keen observer had noted the shallowness of the orbits and the consequent exophthalmos; the vertical position of the roof of the orbits, the extreme height of the head, and the blindness. Mr. Beaumont drew attention to the excess of males over females: in 14 cases recorded in recent British literature there were 5 females. In Patry's list, drawn from French and German sources, there were 7 females in 64 cases. Mr. Beaumont disagreed with Dorfmann, who advocated trephining to prevent optic atrophy, because he considered that the optic neuritis and atrophy were not due to an increase of the intracranial pressure, but were rather the result of direct injury by bony distortion. Patry had stated that Sir Walter Scott and others had suffered from a slight degree of this disease. If this were true, it was possible that cases of arrested oxycephaly might be overlooked, and he threw out the suggestion that possibly sometimes so-called idiopathic optic atrophy might be due to a fruste form of oxycephaly.—Mr. BISHOP HARMAN said he had met with six cases in the London County Council blind schools and had found Mr. Beaumont's statement true that they were not as a rule mentally defective. -Mr. Stephenson recalled a case, which was exhibited by Dr. James Taylor before the Society for the Study of Disease in Children, which had occipital meningocele and optic atrophy.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

The Care and Training of the Feeble-minded. - Mongulian Idiocy.

THE autumn meeting of the Northern and Midland division of this association was held at the Royal Albert Asylum for the Feeble-minded, Lancaster, on Oct. 21st, Mr. A. R. DOUGLAS, the medical superintendent, being in the chair.

Mr. Douglas read a paper entitled "The Care and Training of the Feeble-minded." He gave a short outline of the history of the treatment of the feeble-minded, pointing out that the first to appreciate the condition of the imbecile was Dr. Itard of the Bicêtre in Paris, and that at a later date schools were formed in England, Germany, and Switzerland, and afterwards in America and Scotland. These were all due to private charitable enterprise, and though brilliant results were obtained in them in many cases, the possibilities of the education of the idiot were somewhat overestimated. Mr. Douglas then said that the care and protection of the children ought to be the first consideration, special attention being paid to their hygienic surroundings and to their condition of health. An important factor was the bringing of the idiot into the society of those who were his equals, which stimulated a healthy condition of rivalry amongst them. The control and discipline of life in an institution also had a beneficial effect on them, tending to encourage industry, honesty, and self-respect. He next gave a sketch of the methods adopted at the Royal Albert Asylum with its various schools and workshops, where in the first place an attempt was made to cultivate the senses, to perfect the the Anterior Capsule of each Lens, probably representing a faculty of muscular coordination, and to establish normal relations between the brain and the hand. This was followed by the more serious problem of learning to read and write, a problem which was, of course, attempted in selected cases only. He then gave a description of what was probably the most interesting part of the institution—namely, the Herbert Storey Industrial Schools and Workshops. In these departments boys were trained in carpentry and wood-carving, the making of clothes, boots and shoes, baskets, mats, &c., as well as in bookbinding, printing, and other occupations. The estate also provided work in the gardens and on the farm for lads who showed an aptitude for it. He concluded a most interesting paper by asking the question: "Besides training and educating these obviously defective children, are we doing anything for future generations?" and had to answer it by saying, "We are not."—Some discussion followed, in which Dr. S. A. GILL, Dr. THOMAS W. McDowall, and Dr. Bedford Pierce took part.

Dr. D. Hunter had prepared a paper on Mongolian Idiocy, the reading of which was prevented by the time limit. He showed, however, a series of photographs illustrative of the condition. His conclusions briefly were: that Mongolian idiocy was not an entity, that all the characteristics of the condition could be paralleled in the fœtus, and that in short the Mongolian idiot was a grown-up fœtus. He also demonstrated some morphological aspects of the Mongolian idiot, suggesting that the orang-utang possibly approached much nearer to the line of human ancestry than did either the gorilla or the chimpanzee.—Dr. R. G. Rows made some remarks with reference to the photographs of brains shown by Dr. Hunter.

The meeting was brought to a close by an adjournment to the Winmarleigh Hall in the Asylum, where the Right Hon. Lord Muncaster unveiled a memorial window in memory of the late Sir John Hibbert.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Scopolamine-Morphine Anæsthesia.

AT the opening meeting of the eighty-ninth session of this society, held on Nov. 3rd under the presidency of Dr. BYROM BRAMWELL, as we have already reported,

Dr. H. TORRANCE THOMSON and Dr. DENIS COTTERILL contributed a paper on the Use of a Combination of Scopol-amine and Morphine as an Anæsthetic Adjunct. They had employed two different methods: 1. The administration two hours previous to operation of 1-64 grain of scopolamine bromohydrate with 1-6 grain of morphia sulphate. In the majority of the 34 cases in which this method was tried induction of anæsthesia was by chloroform, and was maintained by ether given by the open method. This method had been strongly recommended by Dr. Rouffart and Dr. Walravens of Brussels at the International Surgical Congress of 1908. 2. Three preliminary doses of the scopolamine-morphine combination were given at intervals, the first dose two and a half hours, the second one and a half hours, and the third half an hour before the operation. From 1-120 to 1-100 grain of scopolamine with 1-8 gr. morphine was the usual amount of each dose. The effects of the two methods differed only in degree, and were more pronounced in the latter than in the former method. Dr. Thomson and Dr. Cotterill had employed these methods in about 150 cases. The advantage of the combination was, roughly speaking, based on the associated hypnotic and anæsthetic properties of the alkaloids and on their toxic effects on the respiration and circulation being antagonistic and therefore counterbalancing each other. Attention was drawn to the fact that false teeth must be removed before the drugs were injected. Temporary giddiness was complained of when a large dose (1-64 grain) was given, but not when the doses were subdivided and given at intervals. Sleep quickly followed after the first dose, and usually the third dose form were very gradually administered the patient. If chloro-form were very gradually administered the patient did not wake up at all, but if it were administered in strong vapour the patient usually was roused and resisted. In the majority of cases the patient was put sufficiently well by functional disturbances of the nervous system. Emphasis under with considerably less of the ansesthetic than was laid on this point as of the greatest importance.

usual without the scopolamine-morphine injections. Even when a patient awoke during an operation a very few whiffs of the anæsthetic sufficed to produce quiescence. Their practice was to put the patient fairly well under chloroform until the skin incision had been made, and then the mask was removed and only reapplied if the patient showed signs of "coming out." At first they found it somewhat difficult to judge as to when cutaneous sensibility to cutting was abolished, but with experience this was overcome. The corneal reflex was often absent at an early stage of the narcosis and stress could not be laid on this sign. In over 60 per cent. of the cases the pupil previous to the application of the chloroform mask was moderately dilated, but it contracted, as in normal anæsthesia, as the narcosis deepened. After the injections the breathing tended to become slow, and in some cases as low as eight or even six per minute. On the application of chloroform the breathing became slightly irregular and more rapid, but quieted down as in normal sleep as narcosis deepened. In those cases in which the respirations fell to a rate of 12 per minute or lower, the patients maintained a perfectly good colour and seemed in no way embarrassed. The temperature was apparently unaffected. The tendency was for the pulserate to fall and for the tension to remain about the same or to be slightly raised. Slight disturbance of the patient often raised the pulse-rate from 60 or 70 to 100 or over, but this on fell to its normal when the patient fell asleep again.

Dr. Thomson and Dr. Cotterill had not met with any case in which any undesirable effect took place on the circulation, and even in a case of lobar pneumonia, in which operation was performed on the seventh day, the result was eminently satisfactory. The combination had been employed in the cases of several very frail old men and women with equally satisfactory results. The results as regards sickness had been very encouraging, and in the whole series of cases there had not been one case in which sickness was in any way troublesome. There was no case of vomiting on the operating table, and only very occasionally did slight retching take place. After sickness also was conspicuous by its absence and the worst cases were those in which patients vomited three or four times during the evening and night following the operation, but the total number of such cases did not exceed half a dozen. In from 30 to 40 cases the patients brought up one or two mouthfuls of fluid in the evening, but without retching or vomiting, and were perfectly comfortable immediately afterwards. Dr Thomson and Dr. Cotterill had been struck by the absence of nausea, retching, or vomiting either during or after the operation, and the nurses were very decidedly of opinion that the afternoons and evenings of operation were very much quieter than in the days before this combination of drugs was employed. The effects of the drugs varied in different patients. Old frail patients, young patients, patients with poor physique, and the stolid type of patient reacted more markedly, while robust persons and intemperate or nervous persons required larger doses. As a rule, the effect of the drugs was at a height about two hours after administration and the effect lasted five or six hours. Dr. Thomson and Dr. Cotterill had not noted any bad effects, and except in cases where it was necessary to awaken the patient to clear the mouth and nose of blood, there was difficulty in suggesting any contra-indications. They had found chloroform the most satisfactory in inducing anæsthesia on account of the vapour being less irritating than that of ether. Even when patients were apparently sound asleep they nearly always coughed and choked when ether was applied, and this tended to rouse them. When anæsthesia had to be continued during operation there was no difficulty in keeping the patient satisfactorily under with a small amount of ether given on an ordinary Schimmelbusch mask. Summarising, the following conclusions were arrived at:-1. As a result of giving either the single or the three preliminary doses, fear, as a source of danger in the performance of operation, was done away with. Fear predisposed a patient to sudden syncope, and this was accountable to a very great extent for the cases of sudden death which formed so large a proportion of the casualties which took place during chloroform administration. It might also be accepted as proved that emotional shocks were prone in certain patients to leave persistent after-effects manifested by functional disturbances of the nervous system. Emphasis

In the majority of cases the anæsthetic might be administered without waking the patient, and even in hospital, where conditions of quietness were not favourable, a large proportion of the patients had no recollection of having been removed from the ward. 2. That the amount of anæsthetic required was small. The more the combination of drugs was pushed the less was the amount of chloroform or ether required. In nearly half the cases, after the preliminary incision had been made, no further application of the anæsthetic was necessary, and in the remaining cases a whiff of chloroform was only given from time to time during the continuation of the operation, or small quantities of ether were given continuously by the open method. In no case where the anæsthetic pure shock noticeable was removed early in the operation was shock noticeable, even though the operation was a severe one, such as amputation of the foot or leg, but even when larger amounts of the anæsthetic were required, the authors still claimed the advantage of the preliminary injections. 3. Owing to the fact that the drugs inhibit to a great extent the secretion of mucus and saliva, less trouble is experienced during the administration of chloroform or ether. 4. That both during and after operation sickness is much less liable to occur. 5. That the patients continue sleeping for several hours after operation and are thus spared much pain and discomfort. Though Dr. Thomson and Dr. Cotterill had not tested the combination of scopolamine and morphine injections in operations conducted under local or spinal ansesthesia, they were convinced that the mental effect on the patient would be most advantageous.

Professor F. M. CAIRD briefly narrated the various sedatives which had been employed to produce anæsthesia, and stated that the employment of scopolamine and morphine was particularly good in cases of spinal anæsthesia.

Mr. ALEXANDER MILES said that in his experience hyoscine had not proved an innocent drug. When he first employed the method he used large doses, but now 1-100 grain of scopolamine with ½ grain of morphia divided into three injections were given. He found that it took longer to put the patient under the influence of chloroform when these injections had been given because of the slowness of their respirations.

Mr. J. M. COTTERILL said that the use of the injections on the whole gave him a very favourable impression. There were entire absence of alarm on the part of the patient previous to operation and a subsequent calm for many hours after operation, and the patients seemed to suffer less from shock. He employed these injections in almost every case requiring operation.

MEDICC-CHIRURGICAL SOCIETY.—A meeting of this society was held on Nov. 10th, Dr. James Swain, the President, being in the chair.—Dr. J. R. Charles showed a case of Kala-azar from which the parasite had been obtained by hepatic puncture, and a case of Myasthenia Gravis, who, in addition to the usual group of symptoms, suffered from weakness of the bladder sphincter.—Dr. A. Rendle Short referred to the apparent immunity from kalaazar enjoyed by those who in early life were affected by oriental sore.—Dr. Walter C. Swayne read a paper on the Treatment of Retroversion of the Gravid Uterus, describing the difficulties and dangers of neglected cases. Disturbances of micturition were most important symptoms and catheterisation of the distended bladder frequently became no simple matter to be entrusted to a nurse. emptying the bladder digital reposition of the uterus could not be affected, even with the aid of the vulsellum and an anæsthetic, the cervix should be dilated and the uterus emptied. This failing, laparotomy should be performed, when adhesions, the common obstacle to reposition, could be dealt with. He related three cases to illustrate the various methods.-Dr. A. Fells recommended the value of the knee-elbow position as an aid to digital reposition, also the use of a large curved sponge-holder to exert pressure on the fundus. - Mr. D. C. Rayner described a case complicated by the presence of a fibroid in which he performed laparotomy, and on account of hamorrhage on attempting to enucleate the fibroid was compelled to do a complete hysterectomy. The President thought Dr. Swayne too apologetic on behalf of laparotomy; pregnant women bore abdominal operations well, and he suggested that laparotomy was preferable to abortion.-Dr. T. A. Green mentioned a case with persistent vomiting as the chief factor.—Dr. F. H. Edgeworth

showed a case of Recovery from Tuberculous Meningitis. He admitted the diagnosis to be doubtful, but considered that the symptoms of headache, cranial tenderness, vomiting, moderate double optic neuritis, slight fever, and a positive Pirquet's cutaneous reaction were in favour of tubercle; the absence of signs of any other disease, the absence of cells or micro-organisms from the cerebro-spinal fluid, and the relief obtained from spinal puncture supported this diagnosis. - Mr. W. H. Harsant quoted Dr. A. Martin's recent paper which showed the recovery rate in tuberculous meningitis to be about 1 per cent.-Dr. B. M. H. Rogers thought recovery commoner than usually supposed, and said that Pirquet's reaction had proved a reliable sign after prolonged use at the children's hospital. - Dr. R. Waterhouse suggested that the possibilities of anæmia or syphilis had not been quite excluded, and mentioned the occasional success of morphine injections in meningitis. — Dr. Rendle Short read a paper on "Iodoform and Thyroidism" based on a case in which the external application of iodoform to a wound appeared to bring on typical Graves's disease, lasting for 12 months. Iodoform when absorbed was excreted by the thyroid gland as iodothyrin, excessive absorption might produce thyroid intoxication, and in a susceptible person the thyroidism might prove chronic. Children were relatively insusceptible to iodoform intoxication.—Dr. R. Shingleton Smith said he had used iodoform internally in many cases but had seen no results suggestive of thyroidism. - Dr. Rogers corroborated the statement that children were insusceptible to iodoform poisoning. -Dr. L. E. V. Every-Clayton was surprised to hear that fever was a symptom in Dr. Short's case, as he had never heard of a drug which could produce pyrexia. - Dr. Waterhouse was not inclined to accept the suggestion made by Dr. Short that endemic goitre might be due to deficiency of iodine in the drinking water, since recent observations had shown that goitre was prevented by boiling the water.— Fleet-Surgeon W. E. Home, R.N., compared the delay in appearance of toxic symptoms after iodoform absorption with delayed chloroform poisoning. - Dr. P. Watson Williams described the operation he had performed on a patient suffering from Double Fronto-Ethmoidal Sinus Suppuration, showing the patient and a model illustrating the operation.

West London Medico-Chirurgical Society.-A meeting of this society was held on Nov. 5th, Dr. Neville T. Wood, the President, being in the chair.—Dr. P. S. Abraham showed a case of Pemphigus Vegetans of nine weeks duration in a woman aged 42 years. She had good health till ten months ago and gave birth to a child four months The pharynx and larynx were affected, the larynx showing bright redness without ædema. Attempts to cultivate organisms had so far failed. -Dr. Abraham also showed a case of Multiple Lupus in which X rays had failed and in which Mr. E. Reginald Morton was trying the solid CO₂ pencil. It was too early to report the result .--Mr. Walter E. Fry showed a case of enlarged Tibial Tubercles in a boy aged 16 years.—Dr. H. Robinson remarked that the condition was described as "Schlatter's disease." Several members of the society said it was not uncommon to find this condition in young people who played football, and that it persisted in later life as a bony enlargement.— Mr. L. A. Bidwell said he thought there was an inflamed bursa under the tendon in some cases. -Mr. Fry also showed a case of Congenital Scar of the Upper Lip in a child aged 2 years. There was a scar on the left side of the upper lip simulating the result of an operation for hare-lip. No operation had been performed. There was a deformity of the left nostril. There was a family history of hare-lip and cleft palate.—Mr. D. C. L. Fitzwilliams showed a case of Syphilitic Periostitis of the Right Tibia in a boy aged 11 years —Dr. A. E. Saunders showed another case of Syphilitic Periostitis of the Tibiæ in a girl aged 12 years.—Mr. G. Graham showed a patient, aged 25 years, from whom Mr. C. B. Keetley had successfully removed a Ruptured Spleen. The operation was performed six hours after the accident, the abdomen being then full of blood. Now, 14 weeks after the accident, the patient felt well except for some shortness of breath on exertion.—Mr. Cecil H. Leaf showed a patient from whom he had removed the Tongue and Glands of the Neck. He recommended that the operation should be done in three stages: (1) removal of the glands and tying of the lingual artery on one side; (2) the same operation on the other side; and (3) removal of the tongue. He also showed two patients in whom he had excised a portion of the Colon

containing Carcinomatous Growth, with end-to-end anasto-One patient required no purgative to make the bowels act; the other had to take an occasional laxative. Mr. Leaf also showed a boy, aged 11 years, from whom he had removed a Thyroglossal Cyst. He had operated twice on him. The condition was not completely cured, but as only a drop or two of fluid exuded every six or seven days he thought that no further treatment was indicated. - Mr. E. Archibald Smith showed a woman, aged 36 years, the subject of Myxœdema, in whom the left forearm was 14 inches larger in circumference than the right. Under thyroid treatment the arm had diminished half an inch in circumference and was softer. - Mr. Smith also showed a case of Gumma or Epithelioma on a Leukoplakial Tongue in a woman aged 57 years. No definite history of syphilis could be obtained. The microscopical report on a piece excised was The growth had become slightly flatter under doubtful. treatment, but having the opinion of the society he came to the conclusion that it would be better to remove the tongue at once. -Mr. Smith also showed a child, aged 1 year and 10 months, with Six Fingers on each Hand and Six Toes on each Foot. -Mr. Reginald Morton said that from the radiograms he had made there was no doubt that the extra fingers were supernumerary fifths.—Mr. Bishop Harman showed two cases of "Coppock" Cataract. The parents were not related and did not appear to be related to any of the families which had been previously investigated who exhibited this defect. The lenses of both parents were

CHELSEA CLINICAL SOCIETY.—A meeting of this society was held on Nov. 9th. - Mr. Leonard A. Bidwell, the President, was in the chair, and chose for the subject of his address the Development of Gastric Surgery. He said that the first case of gastric surgery on record occurred in 1602 in Brandenburg, where a knife was removed from the stomach of a sailor by Mathieu, probably, he presumed, after the formation of an abscess. A case was mentioned to exemplify the treatment of 100 years ago in which a penetrating wound of the stomach, occurring in 1784, recovered without surgical treatment, and even after the introduction into the stomach of various fluids, which was, however, afterwards abandoned. In 1808 a record of certain cases of ruptured gastric ulcer showed that they were all fatal and that no operation was even thought of. Gastric surgery was non-existent. The absence of anæsthesia and the belief in the fatal result of all wounds of the peritoneum excluded the suggestion of it. The first operation on the stomach was performed by Sedillot in 1847, but no successful cases were recorded before 1875. Billroth experihuman subject was a pylorectomy by Péan in 1879, and decade 1880-90 was one of great progress: gastro-enterostomy by Wolffer, resection of ulcer by Rydyger, dilatation after gastrostomy by Loretta, gastroctomy by O'Connor, gastro-enterostomy by Van Hacker, and pyloroplasty by Heinhe and Mikulicz. In the next decade occurred the first successful case of operation for perforated ulcer. This was performed by Kreig in 1892. Doyen published accounts of several successful operations for ulcer, but even in 1899 the operation was in this country considered quite unjustifiable, notwithstanding the successful operations of many surgeons. It was not till the present decade that gastric surgery had become actually recognised and popular, and operations, whether for malignant disease or for simple ulcer, were now of everyday occurrence. Removal of the greater part of the stomach in certain cases of malignant disease was found to be quite a desirable operation, affording a hope of radical cure in about 30 per cent. of the cases. In cases where gastric ulcer had recurred after operation gastro-enterostomy was found to have very satisfactory results. In cases of rupture operation was also very successful, the more so the earlier it was performed. In severe hæmorrhage operation was almost always advisable, a catgut ligature being tied round the ulcer to prevent a return of the hæmorrhage. In cases of foreign body in the stomach, tumours, adhesions, &c. operation was the most satisfactory treatment, and was attended with very little risk. The result of the removal of the entire stomach in certain cases had shown that this organ was not so necessary to digestion and life as was formerly supposed.

Indeed, the rapid entry of food into the intestines appeared to have been, in many cases, rather favourable to digestion than otherwise. It was possible, of course, that reaction might set in, that the importance of the stomach in digestion might be more highly estimated, and that surgeons would become more adverse to gastric operations; but, in any case, they had been taught by the experience of the last 20 years that the stomach was an organ well within the reach of modern surgery and that the old-fashioned method of depending on the appearance of the tongue to diagnose the exact condition of the stomach was partial, one-sided, and out of date.

CLINICAL SOCIETY OF NEWCASTLE-UPON-TYNE.

—A meeting of this society was held on Nov. 4th, Mr.

J. W. Leech, the President, being in the chair, and was
devoted to clinical cases and pathological specimens, the
following being shown:—Mr. John Clay: A patient after
Appendicectomy by an American method, with criticism of
modern methods of appendix operations.—Dr. W. E. Hume:
(1) Splenic Anæmia; (2) Locomotor Ataxy to illustrate improvement by Fraenkel's method; and (3) Symmetrical
Atthritis in a child.—Dr. J. S. McCracken showed a series
of Congenital Heart cases.—Mr. T. G. Ouston: (1) Absent
External Auditory Meatus with Malformation of Pinna; and
(2) Congenital Syphilis.—Dr. D. W. Patterson: (1) Pityriasis
Rubra Pilaris; and (2) results of treatment of Rosacea in a
girl aged 17 years.—The President: (1) Esophagotomy for
impacted false teeth; and (2) two cases of Sarcoma of the
Leg following traumatism.—Dr. Horsley Drummond:
(1) Hemiplegia in a child following bullet wound; and (2) a
child with Cirrhosis of the Liver and Enlarged Spleen.—Dr.
H. Glen Davison: (1) specimen from a Purpura case; and
(2) specimen from a Cerebral Hæmorrhage case.

Manchester Medical Society.—A meeting of this society was held on Nov. 3rd, Mr. J. W. Smith being in the chair. - Dr. Eugene S. Yonge, in a communication on a New Method of Treatment for Paroxysmal Rhinorrhœa and Hay Fever, referred to the notorious intractability of these maladies, and described a procedure which he had introduced, and which consisted briefly in the excision of the septal tubercle on both sides, together with the surgical treatment of two other areas in the nasal cavity, which appeared to be also concerned in the production of the characteristic reflex manifestations. A number of severe cases of paroxysmal sneezing, paroxysmal rhinorrhœa, and hay fever had undergone this treatment, and the results had been very satisfactory. The symptoms in all the patients, except one, had either been entirely abolished or so markedly relieved as to cause little or no inconvenience. - Dr. Judson S. Bury gave a communication on Paralysis in Chorea, and Dr. C. H. Melland read a paper on the Treatment of Chlorosis.

SANITATION IN DOLGELLY.—After years of discussion and negotiations Dolgelly urban council (Merioneth) has unanimously decided to instruct an engineer to prepare detailed plan and specifications of a sewerage scheme with tidal outlet at an estimated cost of £2750. At a meeting of Dolgelly rural council on Nov. 6th the sanitary inspector reported structural alterations at a number of farmhouses, and it was agreed to call the attention of owners to the fact that owing to lack of accommodation the practice was exceptionally common in one parish of storing wool, corn, &c., in dwelling houses. The medical officer reported having examined two houses where cases of tuberculosis had occurred. The houses were scrupulously clean and structurally satisfactory, but all the windows were closed. That was to him a sad and distressing state of things and it was evident that the public were not yet convinced of the efficacy of fresh air, notwithstanding the council's efforts to bring that knowledge home to the minds of the people. Cases of scarlet fever continuing to occur he again drew attention to the necessity of providing proper isolation. It was useless closing elementary schools if those who were infected attended chapel and other meetings. The chairman feared that the public were not yet sufficiently advanced to agree with the views which the medical officer had repeatedly expressed with regard to the isolation hospital and the council took no further action.

Bebiebs and Notices of Books.

Arthritis Deformans: Comprising Rheumatoid Arthritis, Osteo-arthritis, and Spondylitis Deformans. By R. LLEWELLYN JONES, M.B. Lond. With 38 full-page plates. Bristol: John Wright and Sons, Limited. London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. 1909. Pp. 365.

THE subject of chronic diseases of joints is one concerning which our knowledge is far from complete, and opinion in regard to these conditions is now in a state of flux. Modern scientific methods of research have established the fact that under the name of arthritis deformans and its numerous synonyms a number of joint conditions are included, which, though owning certain superficial resemblances, differ in regard to their morbid anatomy, distribution, and causation. The numerous classifications of these conditions are an index of the confusion existing in regard to them, a confusion still further increased by the varying nomenclature adopted by different authors. In the useful book before us Dr. Llewellyn Jones at the outset states that he employs the term arthritis deformans in a generic sense, and he proceeds in an introductory chapter to give an interesting historical account of these conditions, with numerous references down to the year 1902. The second chapter deals with the classification of arthritis deformans and includes references down to last year. Various classifications are discussed, including those of Charcot, Osler, Pribram, and Goldthwait; the last-named observer has suggested a grouping on pathological lines into (1) infectious arthritis; (2) atrophic arthritis; and (3) hypertrophic arthritis. Dr. Jones is not prepared to go so far as this. and adopts a division into two main groups: (1) rheumatoid arthritis; and (2) osteo-arthritis, including under the former not only the atrophic arthritis of Goldthwait, but also the more acute forms of rheumatoid arthritis showing glandular and occasional splenic enlargement, including "Still's disease," all of which would be referred by Goldthwait to the group of infectious arthritis. In this group "the morbid changes occur primarily in the softer structures. the peri-articular and synovial tissues undergoing thickening with hypertrophy of the synovial fringes, while ultimately a process of atrophy involving all the constituent elements of the joints takes place, including the bony and cartilaginous as well as the softer tissues." In osteoarthritis, as defined by Dr. Jones, the primary changes take place in the cartilaginous and bony structures, which undergo enlargement with the formation of osteophytic outgrowths. This osteo-arthritic group is subdivided into generalised and localised forms. It is probable that any classification will have to be modified as our knowledge advances, but meanwhile that of Dr. Jones possesses the merits of simplicity and comprehensiveness.

Rheumatoid arthritis is then discussed at some length, special chapters being devoted to its etiology, bacteriology, morbid anatomy, pathogeny, premonitory symptoms. general clinical features, diagnosis and prognosis, and treatment. In connexion with etiology, the rôle of antecedent gastro-intestinal disorders is specially discussed. and Dr. Jones confesses to a leaning towards a toxemic theory of the origin of the condition, while admitting that the etiology of many cases is still obscure. The chapter on the bacteriology of the disease gives a review of the claims of various authors, but the conclusion arrived at is that the infective theory of the origin of rheumatoid arthritis, though strongly suggested by some of the clinical features, is still not conclusively established. In regard to the morbid anstomy the changes are regarded as occurring primarily in the synovial and peri-articular tissues, the changes in the

cartilage and bone being secondary, while eventually atrophic changes occur, in which even the shafts of the bones may participate. As a result of the denudation of the bony surfaces of the joint, cancellous bone comes into contact with cancellous bone, and true bony ankylosis occurs, not infrequently with a tendency to obliteration of the joint cavity. Such bony ankylosis occurs rarely if ever in osteo-arthritis. In connexion with pathogenesis Dr. Jones discusses the neural and infective theories which have been put forward to account for the genesis of the disease, but thinks that it is best explained as a cerebro-spinal toxæmia or as a trophoneurosis of infective or toxic origin, which is in effect a combination of both theories. He claims that rheumatoid arthritis possesses affinities with tetany and with Raynaud's disease, and regards all three diseases as the expression of a cerebro-spinal toxemia. The chapter on premonitory symptoms is one worthy of special note, owing to the importance of the recognition of the disease in its earliest stages. These symptoms are discussed under the heads of vaso-motor, motor, sensory, and reflex. The subject of treatment is dealt with at considerable length. importance of the treatment of oral sepsis and pyorrhœa alveolaris is rightly insisted upon. In regard to drug treatment Dr. Jones writes favourably of the use of quinine, which he prefers to guaiacol carbonate. He has also found thyroid extract of value in the treatment of cases associated with vaso-motor phenomena. Balneo-therapeutic measures, electrical, and other forms of treatment are also described in detail.

The third section of the book deals with osteo-arthritis—which is considered after the same general plan as the rheumatoid arthritis. In this condition the primary changes are regarded as occurring in the bony and cartilaginous structures, while the synovial tissues are only affected secondarily. Various localised forms of this condition are described in detail, including Heberden's nodosities, "malum coxe senilis," and osteo-arthritis of the knces. The diagnosis from rheumatoid arthritis, chronic gout, and the nervous arthropathies is discussed. In regard to treatment, Dr. Jones believes that he has found guaiacum and sulphur the most useful combination as a routine method of treatment, but states that arsenic has done good in some cases.

The fourth section is devoted to spondylitis deformans. An interesting historical account is given of this condition. Two types are differentiated, the Strümpell-Marie and the von Bechterew. This condition, like the peripheral type of arthritis deformans, appears to be capable of division into rheumatoid and osteo-arthritic forms. The diagnosis and treatment are briefly discussed. The concluding section deals with the subject of arthritis deformans in children, under which heading the condition known as Still's disease is described.

Dr. Jones has produced a useful monograph, which forms a valuable addition to the literature of this complex condition.

Surgical Anasthesia. By H. BELLAMY GARDNER, M.R.C.S. Eng., L.R.O.P. Lond. London: Baillière, Tindall, and Cox. 1909. With 35 illustrations and 12 plates. Pp. 240. Price 5s.

This book has one advantage not always to be found in works on special subjects: it is easy to read. That this is the case results no doubt from great care bestowed upon the writing of it by a man who is thoroughly versed in the subject of which he treats. Another factor which lightens the reading of his book is that Mr. Gardner has not overloaded it with the opinions or practice of other authorities, and in a small work of this nature we take it for a gain that the teaching should be individual, though faults may arise naturally from this attitude. We think, for instance,

that Mr. Gardner has not, when treating of chloroform, laid sufficient emphasis upon the importance of low vapour percentage, and he has not even mentioned the best forms of apparatus devised for securing this end. He describes, indeed, the Vernon-Harcourt inhaler, but he ignores entirely those instruments which work upon the "plenum" system and which are, in the opinion of many, preferable for several reasons to the aforementioned inhaler.

Again, in his otherwise excellent little chapter on adenoids. the author should, we think, lay more stress upon the fact that safety lies primarily in a light degree of anæsthesia; that this is so at any rate when a not very experienced administrator has charge of the anæsthetic there can, we think, be no doubt, and it is particularly for the comparatively inexperienced that this book is designed. The fact is that Mr. Gardner is so impressed with the immense importance of avoiding all forms of obstruction to the breathing that he is comparatively indifferent to the question of the strength of vapour. All his teaching upon the first of these two points is excellent. It is clearly explained and most emphatically stated. The second factor, however, is surely of at least as great moment. Fatal consequences can be brought about though the airway be perfectly free, provided that too much chloroform is given, while if the airway be obstructed a catastrophe is less probable, provided that the vapour inhaled is really a very weak one. We do not wish to belittle in any way the baneful influence of even those slighter forms of asphyxial complications which Mr. Gardner describes so well, but we wish he had treated more fully the question of overdosage and the extreme ease and rapidity with which it may be brought about by those who have not from long usage realised the potency of chloroform vapour.

Mr. Gardner has a predilection for the mixture of chloroform and ether in the proportions of 1 to 2. That some such mixture is the most desirable as the routine ansesthetic in the hands of those who are not specialists seems to be his opinion, and is one with which most authorities will, we believe, agree. The book contains an accurate description of the nasal method of administering nitrous oxide with or without oxygen, a method for which Mr. Gardner evidently has a stronger liking than is, we believe, common amongst anæsthetists. On this, however and one or two other matters of opinion we do not wish to enlarge, for we cordially welcome Mr. Gardner's book as a capital exposition of the principles and practice of ansesthesia as these appear to one very well qualified to describe them from his own experience.

The Public Health Agitation 1833-1848. By B. L. HUTCHINS. London: A. C. Fifield. 1909. Pp. 150. Price 2s. 6d.

It seems a far cry from the present day to the time of the passing of the first Public Health Act in 1848, and a still farther cry to the memorable agitations which, continuing through the third and fourth decades of last century, led to the placing of that measure on the Statute Book. Among present-day sanitarians there can survive but few contemporaries of those earlier pioneers of public health, Edwin Chadwick, Southwood Smith, and their followers. And among those still fighting the battle of public health there are not many who were familiar with the immediate successors of those pioneers-e g., Sir John Simon and Dr. Edward Rumsey. Of Dr. Southwood Smith no biography has been written, with the exception of a brief memoir by his granddaughter, Mrs. Lewes, and the only existing record of the life work of Sir Edwin Chadwick is contained in a treatise on the "Health of Nations," by his friend and admirer, Sir Benjamin Ward Richardson.

book which, although not pretending to be a history of public health, "aims," in the author's words, "at a presentment of some of the more striking figures in the initial movement towards sanitary reform that began with the Poor-law report and ended with the General Board of Health in 1854." The present volume, which embodies a course of lectures recently delivered at the London School of Economics, is one of a series evidently designed for the support of certain doctrines of the so-called "Collectivist" school, an aspect in which a notice of the work would hardly be appropriate to our columns. Incidentally, however, Miss Hutchins gives an account of the life and public health work of Edwin Chadwick and of Southwood Smith, the like of which has not previously been presented in one volume, and from this point of view a brief notice of the work will probably be interesting to our readers. Its chief materials have been derived from the reports on sanitary inquiries issued by the Poor-law Commissioners in 1838-9. Frequent reference is, of course made to Sir Benjamin Richardson's collection of the writing of Edwin Chadwick, and to Sir John Simon's work on English sanitary institutions, as well as to Dr. Redlich's treatise on English Local Government.

The book opens with an interesting account of Sir Edwin Chadwick's life and work from his birth in 1800 to his death 90 years later. The chief events recorded in his life are: the part he took as a member of the Factory Commission in 1833, and particularly his advocacy of the appointment of paid inspectors of factories under central control; his work in 1834 as a Poor-law Commissioner; his efforts towards the establishment of an office for the registration of births and deaths; and, lastly, the prominent part he took in the agitation for sanitary reform and in the formation and work of the General Board of Health in 1848. Of the life and labours of Dr. Southwood Smith, who was Chadwick's senior by 12 years, an interesting account is given. His professional life in London dates from 1820, in which year he settled in the East End, shortly after which he was appointed physician to the London Fever Hospital, to the Eastern Dispensary, and to the Jews' Hospital in Whitechapel. From this point may be said to date his career as a sanitary reformer. His personal experience of work among the sick poor gave him a knowledge of their lives and habits which stood him in good stead in his subsequent career. In 1833 Dr. Smith was appointed a commissioner to inquire into the employment of children in factories, this being his first appearance as an investigator under Government. In 1837 he was appointed by the Poorlaw Commission to report on a serious epidemic of fever in East London. After personal visitation of the houses and their fever-stricken inhabitants in Bethnal Green and Whitechapel, he pointed out how intimate was the connexion between the fever prevalence and the poverty and fearfully insanitary conditions in which the people had to live. Out of the total recipients of Poor-law relief in Bethnal Green just one-third part were at that time the subjects of fever; in Whitechapel, one-half; whilst in the parish of St. Georgethe-Martyr the number of fever-stricken paupers was 1276 out of a total of 1467. This was the kind of first-hand observation which enabled this country to be the pioneers in the world of sanitary science and preventive medicine, and Miss Hutchins has done good service by presenting the results of her reading in convenient booklet form at a low price. Unwittingly, she has, we think, been led to attribute to Chadwick alone some of the higher qualities of statesmanship which rightly belong to Southwood Smith in at least an equal degree. The former was the energetic, fearless agitator constantly before the public, Miss B. L. Hutchins has now written an interesting little whilst the latter, working unostentationally in the slums

and in the fever wards of London, doubtless provided much of the material upon which the former relied for his successful encounters with ignorance and prejudice. The book deserves to be commended to the study of all those who are interested in the further progress of sanitary

LIBRARY TABLE.

Self-Help for Nervous Women: Familiar Talks on Economy in Nervous Expenditure. By JOHN K. MITCHELL, M.D. London: William Heinemann. 1909. Pp. 202. Price 2s. 6d.— The author of this book has had ample experience in Philadelphia of studying nervous diseases, and is in a position to speak with authority as a physician to physicians. This little book is, however, addressed to patients and relatives of patients; it is free from the technicalities of medicine and written in a style familiar and easy but not devoid of dignity and signs of careful composition. The whole book is thoroughly good sense. Dr. Mitchell is quite free from fads in his survey of this fad-ridden subject, and he has a very good sense of proportion in his estimate of the causative factors of neurasthenia and other questions concerned in its study. Thus he insists that "nervousness' is a symptom, rather than a pathological entity, though The lays stress later on the important point that all cases of neurasthenia are the result of starvation of nerve cells, and he is quite alive to the frequency of intestinal intoxication as a causation. In the author's opinion it is clear that trauma as the determining origin of mild neurasthenia has been unfortunately overexaggerated by the medical profession; where slight accidents appear to start neurasthenia there must have been gradual preparation of the nervous system for a long antecedent period. We have translated ideas found in Dr. Mitchell's book into the language of the neurologist, but he expresses them very simply and easily in ordinary colloquial phrases, and shows thereby that he has acquired great practice in advising laymen on such matters. There are some excellent remarks on religion and suggestion, and in the concluding chapter a very sound and temperate criticism on the Emmanuel movement, a method which Dr. Mitchell -considers undesirable or impracticable for most ministers to attempt, however successful in the hands of its originators. The broad common-sense of the remarks on the food of neurasthenics commends itself to us especially. There are also admirable suggestions on the training of mild neurasthenics in the arrangement and plotting of their time and occupations, things which we all know to be essential in giving practical advice. This book may be placed with advantage to physician and patient in the hands of the mothers, relatives, or advisers of the latter.

Astronomical Curiosities, Facts, and Fallacies. ELLARD GORE. London: Chatto and Windus. 1909. Pp. 370. Price 6s. net.—Astronomy is a subject about which there is perhaps more general ignorance than about anything else, and considering that simple astronomical phenomena are to be seen on most days and nights of the year, even in such a cloudy and sunless year as the present, this is by no means a creditable state of things. Mr. Gore's interesting little book is perhaps somewhat advanced for the amateur astronomer, even for him who has arrived at the fact that the moon as a crescent, popularly called "new," sets only a little after the sun, and that the full moon rises as the sun sets. But anyone who has even a rudimentary knowledge of the heavenly bodies will be inspired to learn something more than he knows by reading Mr. Gore's pages. Medicine nowadays has but little to do with the motions, positions, or composition of the stars and planets, except in so far that certain of the sun's rays may opening into the dorsal or hyperbranchid coelom described

have some influence upon metabolism, or may exercise an influence upon pathogenic bacilli. But it is good for all of us to have some knowledge of the stars and of the phenomena by which we are surrounded, and Mr. Gore has brought together a number of interesting facts and fallacies about astronomical matters. A small amount of astronomical knowledge is of value in general reading and necessary to the comprehension of many passages in the earlier medical writers and the classics.

Why Worry? By GEORGE LINCOLN WALTON, M.D., Consulting Neurologist to the Massachusetts General Hos. pital. London: William Heinemann. 1909. Pp. 275. Price 2s. 6d.—This is one of the "Simple Life Series," which appears to derive its family name because the volumes are issued in order to be purchased by the victims of conditions which are the reverse of a simple life. Slight and trite describes the volume. The opening chapters drag in hasty sketches of Epicurus and Marcus Aurelius, with a few apophthegmata culled from them. The remainder is a series of rambling disquisitions not devoid of humour on neurasthenia, hypochondria, insomnia, and kindred subjects; but we very gravely doubt if "worriers," neurasthenics, and hypochondriacs would derive any benefit from the book. It is a pleasure to find the author insisting on the proper pronunciation of neurasthenia. Exception may be taken to the use of the word "fad," as employed by Dr. Walton. The word is interesting because philologists can assign no derivation, but it is of entirely modern use. Murray's Dictionary defines it as "a crotchety rule of action"-"a peculiar notion as to the right way of doing something," which seems an admirable description of the meaning. The author, however, employs it as a synonym for "hobby," and his chapter on the cultivation of the hobby is excellent, quite the best in the book.

The Climate of Strathpeffer. By H. W. KAYE, M.D. Oxon. London: Sonnenschein and Co. 1909. Pp. 64. Price 2s. 6d.--A third of this volume consists of a dry and somewhat weakly written abstract of the principles of elementary meteorology; the remaining pages, which are of real value, give a careful synopsis of the peculiarities of the climate of Strathpeffer. Dr. Kaye presents a number of statistical tables in proof of the claims he makes in favour of a climate which is of small area, and the resultant of unusual geographical features. The climate of Strathpeffer is very peculiar and can only be appreciated by those who have experienced it. To visitors interested in meteorology this modest but accurate little brochure will be of assistance.

JOURNALS AND MAGAZINES.

The Quarterly Journal of Microscopical Science. Edited by Sir RAY LANKESTER, K.C.B., F.R.S., with the cooperation of ADAM SEDGWICK, F.R.S., SYDNEY J. HICKSON, F.R.S., and E. A. MINCHIN, M.A. London: J. and A. Churchill. New Series, No. 214 (Vol. LIV., Part II.). October, 1909. Price 10s. net. - This part contains four memoirs, of which the first is on Dendrosoma radians, Ehrenberg, by Sydney J. Hickson and J. T. Wadsworth, with a plate. Dendrosoma is an acinetarian allied to trichophrya, lernæophrya, and astrophrya. It was first described by Ehrenberg and subsequently by Claparède and Lachmann. It has been found in Europe and in the United States. It appears to feed on euplotes and on paramecium. Reproduction is effected by the formation of internal buds or gemmules, which are plano-convex in form and have several contractile vacuoles and a broad band of cilia. Their development is described. 2. On the Structure of the Excretory Organs of Amphioxus, by Edwin S. Goodrich, F.R.S., with five plates and one text figure. Mr. Goodrich is firmly convinced that the internal funnels of the nephridia

by Boveri and others do not exist. His observations on the larval nephridia he summarises as follows. To every gill slit corresponds a nephridium consisting of a sac closed internally but opening to the exterior apparently at the point where the ectoderm joins the entoderm in the shallow branchial chamber. From the internal blind end of the nephricial sac spring numerous solenocytes, some of which reach and spread over the aorta at every segment in a fanlike arrangement. This structure is only developed from about the eighth segment backwards to the last nephridium. 3. Intracellular and General Digestive Processes in Planaria, by G. Arnold, Cytological Laboratory, Liverpool, with a plate. The author shows that digestion in Planaria is both inter- and intra-cellular. The intercellular digestion is limited to fat. The fat is broken down in the lumen of the intestine by the secretion of the goblet cells into fatty acids which are then absorbed by the columnar cells, and synthesised again into neutral fat. Most of the fat is digested in the cytoplasm of the columnar cells, but some of it is extruded into the parenchyma at their base and appears in the yelk cells and in the wandering cells. The digestion in the vacuoles takes place in an acid medium, as evidenced by the change in the staining reaction of ingested leucocytes. 4. Professor Hubrecht's Paper on the Early Ontogenetic Phenomena in Mammals: an Appreciation and a Criticism, by Richard Assheton, M.A., Trinity College, Cambridge.

Rew Inbentions.

STERILISED DRESSINGS.

THE demands of scientific surgery and the requirements of modern medicine have influenced pharmacy to a great degree, and the advance of the present-day pharmaceutical chemist on the methods of a few years ago shows that this progress has been very closely followed up by the pharmacists. The perfection to which the sterilisation of surgical dressings has come to be brought is a case in point. sterilised dressings for surgical work must be prepared nowadays with an amount of care and exactitude that necessitates the use of elaborate machinery; no detail in the work is trivial, none can in any way be slurred over, for the consequences that may follow defective sterilisation are of the utmost seriousness. Messrs. John Bell and Croyden have submitted to us for examination metal drums containing various suitable sterilised dressings ready for immediate delivery day or night. We have inspected and tested the contents of these drums and find that the sterilisation has been thoroughly performed. We visited the premises of Messrs. Bell and Croyden at 50, Wigmorestreet, London, W., and inspected the sterilising autoclave installed there in two specially designed chambers. The apparatus is one of Manlove and Alliott's latest types of high pressure machines, and has been erected so that the inlet is in one room and the outlet in another. The drums are filled and placed in the autoclave from the inlet side, the air is then exhausted to 20 inches pressure, steam at a temperature of at least 260° F. and 20 pounds pressure is next forced through the dressings for 20 minutes, and lastly a vacuum of 20 inches is produced for 20 minutes, abstracting the steam and leaving the dressings perfectly dry. The outlet room contains air obtained from above by means of a powerful electric enclosed fan, having a front of fine wire gauze covered with wetted lint, the air being thus filtered. The outlet room is filled with steam so that all particles of dust are thrown down before the operator opens the autoclave. After putting on sterilised clothing and gloves, but before removing the drums, he places metal discs in position on them as they are in the autoclave, and at once solders down the discs with an electric soldering iron, the object being to secure the hermetical sealing of the tins aseptically. Both rooms have glasslined walls with rounded corners, and are washed daily with carbolic (1-20). An automatic chart registers the temperature, steam pressure, number of inches of vacuum pressure, and length of time the articles have been subjected to the process. When required for use by

the surgeon the drums are opened by tearing off the soft metal band, when the lid can be removed easily. The drums cost so little that there is practically no increase in the price of the dressings. saturated steam under pressure for sterilising possesses great advantage because it not only drives out air quickly and penetrates to the interior of dressings rapidly and certainly, but because it also possesses such a high temperature. By the means described above Messrs. Bell and Croyden are able to guarantee that the dressings in the drums are sterilised at a temperature of at least 260° F. and 20 inchesvacuum pressure. A telephone message day or night will ensure a supply of these sterilised dressings being sent by motor, by cab, by cycle, or by rail. A qualified pharmacistis on duty at 50, Wigmore street at night and during Sundays. with a porter in attendance. In this way dressings and, if necessary, operating tables with all antiseptic accessories can be supplied at once on emergency to any address, and we can vouch personally for the fact that in spite of the necessary hurry the arrangements work perfectly smoothly.

COMBINED STETHOSCOPE AND PERCUSSOR.

THE illustration represents an instrument made for me by Messrs. C. J. Hewlett and Son, Limited, of Charlotte-street,



London, E.C., with the view of combining auscultation and percussion. By the usual appliances used for the latter purpose a considerable amount of sound is lost which can and is by this instrument carried directly to the ear, either from the patient's body or indirectly by attaching the side tubes of flexible metallic tubing (removeable) to projections on the pleximeter; on reversing the thimble it will form the bell-end of a binaural stethoscope. There is an obvious advantage of combining two instruments in one which with a pleximeter will fit in a small flat box.

ALEXANDER DUKE, F.R.C.P. Irel.

CHICHESTER INFIRMARY.—Notwithstanding the economies effected in the expenditure, the governors of the Chichester Infirmary, which serves West Sussex and part of Hampshire, are faced with a deficit of nearly £1500, a sum which would have been much greater but for a munificent gift from a donor, who has before contributed so largely to the funds of the institution. Its work during the year just ended has been in excess of any previous year, the inpatients numbering 766, or 79 more than in 1903, while 1990 out-patients have been treated, in addition to 207 in their own homes. The governors at the annual meeting on Nov. 11th appointed a subcommittee to consider how to improve the finances. It is stated that the King may give his patronage by permitting the institution to use the name of "The Royal West Sussex and East Hants Hospital and Chichester Infirmary" when the debt has been liquidated.

MEDICAL MISSIONARY INSTITUTION GERMANY.—A medical missionary institution has been established in Tübingen under the direction of Dr. Fiebig, who was for 10 years in the Datch East Indian Service. The second director is Dr. Olpp, who was for a long period a medical missionary in China. The institute will combine the functions which in this country are carried on by the Edinburgh Medical Missionary Institution, where the students qualify as medical men, and the Livingstone Medical College in London, where a partial medical education is given to missionaries. The Tübingen Institution also arranges for the training of lady doctors and for that of midwives and nurses who are going abroad as missionaries. There will also be a hospital for the treatment of missionaries and of other Europeans from tropical countries. The teaching staff includes several of the University docenten. Thisinstitution is mainly due to the munificence of Herr Paul Lechler, a large manufacturer, who is president of the Stuttgart Medical Missionary Society, and the University of Tübingen has just created him an honorary Doctor of Medicine.

THE LANCET.

LUNDON: SATURDAY, NOVEMBER 20. 1909.

The Rôle of Radium.

THE innate optimism of the human race naturally renders us prone to expect great things from new inventions and dis-Sometimes we overestimate the benefits to be derived from the innovation. Sometimes, though less frequently, we underestimate, or at least appreciate erroneously, the benefits, and this has been the case with radium, for we are coming to the belief that its potentialities are very great indeed. We need not take into account the unconsidered prophecies of those who knew nothing of the nature of disease, and especially of the conditions in which radium was being employed, for such observers as these are always liable to expect too much; but the learned in matters therapeutic have perhaps erred on the opposite side. The quantities of radium available for research in treatment are nearly always so small that it is somewhat unsafe to base any definite conclusions on the results obtained by the use of such minute quantities of the material. Some recent investigators, however, have had the good fortune to have placed at their disposal quantities of radium which may by comparison be termed enormous, though if we contrast them with most other ponderable substances they seem indeed minute.

In many of the crude drugs of our Pharmacopæia are included various powerful substances possessing actions very different from one another. In opium, for instance, there exist some ten or twelve alkaloids at least, and when these are obtained in conditions of purity, and are examined physiclogically, we find that while some of these possess the sedative properties of the drug itself, others are definitely convulsants, and others again possess different properties still; and the action of the drug as a whole is compounded of the united action of the many constituents in various proportions according to the source whence the drug is derived. So also is it with radium. We possess in a small degree the power of physical analysis of the radium rays, and we find that what was at one time looked upon as very simple is now seen to be a mingling of rays of many different kinds and powers. These have been named simply and uncommittingly after letters of the Greek alphabet. We have alpha rays, beta rays, and gamma rays, differing one from the other in various properties. Their effects on the tissues are strangely different. But it is in the power of passing through metallic screens where the most obvious differences exist, and we employ this variation in penetration not merely for purposes of classification but also for filtration, so as to separate the rays of one kind from the rays of another. The alpha rays, which form a very large percentage of the total radium rays, are of low penetrative

power; a very thin plate of silver suffices to occlude them completely. Their effect on the tissues is chiefly manifested by the skin, which inflames readily and sometimes to a great degree, but the underlying tissues suffer little or not at all, so far as we know at present, from the alpha rays. The beta rays possess greater power of penetration and form but a small part of the total rays; they affect the superficial structures of the body to a very slight degree, but they cause changes to take place in the deeper tissues. The somewhat artificial method of classification divides these rays according to the thickness of metal which they are able to penetrate, but a closer examination of the beta rays has convinced careful observers that under this one heading are included rays possessing different powers-BAUDOIN for example, recognising three different classes; and this may be true of the gamma rays, which can pass through greater thicknesses of metal than any of the beta rays. Research hitherto has not rendered it necessary to go farther down the alphabet to provide names for radium rays, but, in fact, the radium gamma rays are analogous to ether rays of light and heat, effects being produced of different natures as we pass along the scale; just as at one part of the spectrum are invisible heat rays, then visible light rays, and lastly invisible rays again possessed of actinic power.

We know as yet but little of the therapeutic properties of radium, and the knowledge which we do possess is almost limited to the less penetrating rays. Numerous papers have appeared within the last year or two and the knowledge we possess is fixed on a firm basis. We know that it is possible by means of radium to influence favourably many superficial conditions, such as nævi, especially capillary nævi and birth-marks. Lupus vulgaris is also amenable to its influence and the scars produced are soft and supple and in every way as good as can be obtained by any other means. Some cases of lupus erythematosus also have improved greatly under radium treatment. Keloid, too, which ill repays any surgical interference, has proved to be beneficially affected by radium rays. Many other superficial conditions could be mentioned in which radium has shown itself capable of so modifying the abnormal tissues present as to lead to their disappearance and their replacement by healthy scar-tissue. Rodent ulcer also is undoubtedly curable by radium, and the skin when the disease has been removed may show barely a trace of it. For deeper affections more hesitation must be employed in describing the results, for all observers are not agreed as to the capabilities of radium. This much is certain; in order to obtain the deeper effects it is necessary to filter off by means of metallic screens those numerous rays which have little power of penetration, but which are capable of giving rise to troublesome and unnecessary dermatitis. The more penetrating rays which pass through the filter are small in quantity, and hence it follows that much larger amounts of radium are necessary if it be desired to attack structures deeply situated. The scarcity and the consequent expense of radium limit greatly its utility and also the extension of our knowledge of the subject. The lecture of Dr. L. WICKHAM last spring in London and again at the British Medical Association meeting at Belfast aroused

great interest in the capabilities of radium in dealing with the deeper forms of malignant disease, and it may well be that increased experience with radium will increase the range of its applicability, but at present too much must not be expected. To THE LANCET of Nov. 13th Mr. BUTLIN has contributed a most valuable criticism on the results obtained by radium in cases which had been under his care. In every case the application was made by someone experienced in its use, so that Mr. BUTLIN'S cases and his conclusions are well worth study. In one case a small epitheliomatous ulcer healed under the treatment, but in several other cases any beneficial effect was merely temporary, and in no case did it appear that the enlarged lymphatic glands were favourably affected. We concur fully in his view that in cases of epithelioma of any but the smallest extent we are not yet justified in advising patients whose disease is amenable to operation to try the effect of radium, unless there are circumstances in the individual case which render an operation inexpedient. The attitude to be observed towards radium as a therapeutic agent is, on the whole, expectant. Many conditions, for the most part superficial, are definitely controllable by its use, as they are by other remedial procedures. As to more deeply situated lesions, no very certain words can yet be spoken, but we may look forward with some degree of hope that further experience with large quantities of radium and further knowledge of the value of screening off the less penetrating rays may enable us to deal with deeply seated malignant growths.

The Physiology of Gastric Secretion.

In the history of our knowledge of the processes of digestion within the stomach the researches of BEAUMONT and of PAWLOW stand out with especial prominence. Professor G. N. STEWART has pointed out, it is difficult to speak without enthusiasm of the work of BEAUMONT, if we consider the difficulties under which it was carried on. An army surgeon stationed in a lonely post in the wilderness that was then called the territory of Michigan, a thousand miles from a university, and four thousand from anything like a physiological laboratory, he was accidentally called upon to treat a gun-shot wound of the stomach in a Canadian voyageur, ALEXIS ST. MARTIN. His observations, published in 1825 and 1833, laid the foundation of all the subsequent work upon artificial gastric fistula, a method which was so ingeniously employed by PAWLOW in his now classical researches dating from 1889 onwards. The influence of the experiments of PAWLOW and his pupils upon subsequent work in regard to the study of gastric digestion in both man and animals it would be difficult to over-estimate.

In man, unfortunately, the operation of gastrostomy is most frequently performed upon cases of malignant disease, which are therefore unsuitable for purposes of physiological observations. A few, however, are on record where it has been performed on healthy stomachs owing to cicatricial stenosis of the œsophagus. Such a case has recently been studied by Dr. R. S. LAVENSON of Philadelphia, who records his observations in a highly instructive paper in the September number of the Archives of Internal

Medioine. He also gives an interesting résumé of previous work upon the subject. The patient was a girl, 14 years of age, upon whom 11 years previously the operation of gastrostomy had been performed for a complete occlusion of the esophagus due to scarring from drinking lye. The patient fed herself by means of a small tube, one end being inserted into the gastric fistula, the other end being tied with a string about the neck. During meals she partook of liquid and semi-solid foods, which she masticated and swallowed in the ordinary way until about three ounces had been taken. She then put her mouth to the tube and by a slight voluntary effort of regurgitation brought the food from the pharynx and cesophagus into the mouth and thence she forced it down the tube into the stomach. The conditions were thus analogous to the well-known experiment of PAWLOW, and Dr. LAVENSON hoped to have been able to demonstrate the influence of psychic stimuli in bringing about gastric secretion by appealing to the various senses with food and collecting the gastric juice by means of a catheter passed through the fistula. In this he failed owing to the fact that though the patient desired to assist in every way in the experiment it was as such distasteful to her, a mental attitude being induced which was sufficient to inhibit the effect of the psychic stimuli investigated. It is of interest to note in this connexion the influence of emotion on secretion as seen in animals. BICKEL and SASAKI 1 performed false feeding observations upon a dog with cesophageal and gastric fistulæ, and found in an experiment that 66.7 cubic centimetres of gastric juice were collected in the first 20 minutes afterwards. This particular dog was found to become violently enraged at the sight of a cat. After being excited by this means for five minutes and then allowed to calm down, a false feeding was carried out in the same manner as in the previous experiment, but only 9 cubic centimetres of gastric juice was secreted in the same period of time. The influence of psychic factors has been established in the human subject by CADE and LATARJET, BOGEN, KAZNELSON, and UMBER. In KAZNELSON'S patient a gastrostomy had been performed for cicatricial stenosis of the esophagus and some years later an esophagostomy was performed, a tube being passed down through the pharynx and out of the cesophageal fistula to communicate with another tube entering the gastric fistula. KAZNELSON 2 was able to confirm on this patient practically all PAWLOW'S observations on false feeding. The simple act of chewing did not call forth a flow of gastric juice, but the mastication of foods pleasing to the patient produced an abundant flow after a latent period of about five minutes. It was found, also, as PAWLOW found in animals, that the acidity of the gastric juice was practically constant, but that the amount of secretion was subject to marked variations.

Being unable to investigate the effects of psychic stimuli on his patient Dr. LAVENSON proceeded to make observations on the effects of chemical stimulation. The results obtained showed that the human stomach reacts in the same way as that of the dog. Water was found to be a definite though not a powerful chemical stimulus to gastric secretion.

¹ Bickel and Sasaki: Deutsche Medicinische Wochenschrift, 1906 vol. xxx., p. 1829.

Pflüger's Archiv für die gesammte Physiologie, 1907, vol. cxviii., p. 327.

This result is one of importance, since the effect of soluble substances must be compared with that of the water used in dissolving them-e.g., tea, certain commercial solutions of pepsin, and egg albumin dissolved in water did not cause the secretion of any more juice than an equal quantity of water. Dilute hydrochloric acid introduced into the stomach did not cause any secretion of gastric juice: on the other hand, beef extracts proved to be powerful stimulants to secretion. Interesting results were obtained with the bitter stomachics such as tincture of nux vomica and tincture of gentian. They proved to be incapable themselves of inducing a secretion of gastric juice, but if given before a substance such as beef extract they increased the secretion produced by it, and thus appeared to act as sensitisers of the gastric secretion. Another interesting result obtained was that a bitter stomachic taken into the mouth caused a greater effect than if it were introduced directly into the stomach. These results in regard to the action of bitters are in accord with those of Borrisow, HOPPE, and KAZNELSON. A nutrient enema administered when the stomach was empty caused a flow of 12 cubic centimetres of rather viscid gastric secretion, with free hydrochloric acid in it. From the effects obtained by introducing acid and alkaline solutions into the stomach Dr. LAVENSON believes that the predominating influence in the control of the periodic opening of the pylorus is exerted by the chemical reaction on the duodenal side of the pylorus. The experiments of CANNON³ have shown that an acid reaction on the gastric side of the pylorus and an alkaline reaction on the duodenal side tend to open the pylorus, while an acid reaction on the duodenal side and an alkaline on the gastric side tend to keep it closed. Dr. LAVENSON found that the chemical reaction prevailing on the gastric side of the pylorus is of subordinate importance to that on the duodenal side. The interest of these observations is that they indicate that the duodenum is capable of preventing too great a discharge of the acid contents of the stomach at once, and also that they explain the slow discharge of gastric contents of high acidity and the more rapid passing on of those of low acidity. Dr. LAVENSON's paper is a highly instructive and suggestive résumé of recent work upon gastric secretion and motility, and is of special value since it confirms the results obtained by other workers.

The International Opium Commission.

No person, lay or medical, will in the present day deny the gravity of the opium question in the Far East, nor will anyone acquainted with the subject make light of the many difficulties which surround the question as to how it can best be dealt with. The proceedings of the International Commission which met at Shanghai early in the present year are made known in the report which has recently been published. The Commission comprised 32 members, of whom only four were medical men. As might have been expected, this shortage of medical representation was soon felt when the opium habit and its evil consequences to

mental and bodily health came to be considered. A proposal was made by the Chinese delegation that a committee consisting of five delegates should be appointed to consider and report on the medical aspects of the opium question, including the best methods of curing the opium habit without recourse to the drug or any of its derivatives. This resolution was opposed by the British delegation on the ground that the Commission was not appointed on a scientific basis, and suggestion was made that this matter should be brought by the various delegates to the attention of their respective Governments, which would alone be able to appoint competent experts to make the necessary investigations. It was stated in the course of the discussion that there were only three of the medical representatives on the Commission capable of taking part in such an inquiry. During the discussion Dr. HAMILTON WRIGHT, one of the American delegates, pointed out that when Her late Britannic Majesty's Royal Commission on Opium was appointed the British Government thought it sufficient to appoint only one medical expert; that the report of that expert had coloured to a great extent the final judgment of the Royal Commission, and had not proved satisfactory to the majority of medical men who had taken trouble to examine it in detail. Dr. WRIGHT argued that if one medical expert was regarded as sufficient to investigate the medical aspects of the opium question in a Royal Commission, three experts would suffice for the International Commission's purposes. We entirely agree with Dr. HAMILTON WRIGHT'S view that the medical examination of the opium question should be placed upon a modern footing. While admitting the very important fiscal and diplomatic questions which had to be discussed by the Commission at Shanghai, we hold that the opium vice and its prevention and cure are matters needing careful investigation by medical experts. We regret, therefore, that at least one competent medical practitioner was not included among the British delegates sent to the recent International Commission. The other nations chiefly concerned in the opium question—namely, China, Japan, and America—all sent medical representatives to Shanghai. The German delegation, though not medically represented, was in complete sympathy with the professional view, and expressed the opinion through its chief delegate during the discussion that "the medical side of the opium question was the issue of the anti-opium campaign." With this view we are in entire concurrence, and we earnestly trust, when the proposed International Conference on the Opium Trade is held at the Hague, negotiations as to which are now, we understand, proceeding, that the Government of Great Britain will give due attention to the medical aspects of the question, and will include among her representatives one or more competent medical experts who will, along with their foreign medical colleagues, be able to guide the deliberations of the Conference into the proper channels, and thus secure satisfactory results in framing measures for combating the opium habit in all civilised countries as well as in the Far East.

THE new British Sanatorium for consumptive patients built at Davos under the patronage of Queen Alexandra was opened for their reception last week. There is at present accommodation for 54 patients.

³ Cannon: American Journal of Physiology, 1907, vol. xx., p. 283.

Annotations.

"Ne quid nimis."

THE LATE DR. DALLINGER.

THE death of Dr. Dallinger, F.R.S., has brought into renewed prominence the name of a remarkable man who for some time past has been living withdrawn from public notice, but whose career at the period of his greatest activity brought him much into the arena of scientific discussion and into still greater publicity in the character of an expositor of popular science. Ordained a Weslevan minister he became fascinated by the problem of the origin of life at the time when Darwin's work was fixing public attention upon what must always be the most profoundly interesting of scientific problems. Hundreds of minds were stirred by the new interest awakened by Darwin's writings. but with Dr. Dallinger the interest proved to be more than a mere diversion, it gave a colour to his whole thought and direction to his entire career. Less suspicious than most of his professional brethren, he brought an open mind to bear upon the theory of evolution and entered with zeal into the discussion upon scientific lines of the hypothesis of spontaneous generation. Experiments conducted on the lines of Professor Tyndall's famous tests with optically pure air led him, as they had led his teacher, to the conclusion that life is always, under experimental conditions, derived from antecedent life, and he entered the lists as an opponent of the theory which would derive the organic, in its origin as in its sustentation, from the inorganic world. About the same time he formed the ingenious plan of putting the proof of the modification of the living organism by its environment into an experimental form by training certain selected infusoria to adapt themselves to a vast change in the temperature of the medium in which they had their being. Starting with a normal specimen of Tetramitus rostratus and two other infusorial forms, he kept the stock under observation for a period of nearly seven years, and during that time he gradually raised the temperature of the nutrient medium which they inhabited from the ordinary temperature of the atmosphere to a temperature of 158° F. The infusoria adapted themselves, at certain points with great difficulty but eventually with complete success, to the change, and ultimately Dallinger obtained by cultivation varieties which flourished under conditions of life instantly fatal to the unaltered organisms of the original stock, while they themselves had become incapable of returning to the original habitat. This was the work which secured for Dallinger the warm recognition of scientific men. With the general public he obtained even greater credit for the felicitous way in which he presented the more picturesque aspects of natural history to popular audiences, his lectures on the spider in particular having long enjoyed a great vogue. Dr. Dallinger's scientific work was crowned by the editing of Carpenter's book upon the Microscope, a work of large range and real utility, which, without any pretension to great accuracy, presents an extraordinarily comprehensive view of a very large and very complicated subject, and exhibits on every page the impression of a mind trained by long labour and informed by close and continuous contact with the facts discussed. Many books upon the microscope have appeared since the seventh edition of Carpenter's work, which Dr. Dallinger completely revised and largely re-wrote, but no later book has superseded it. It still holds the field as the vade meoum of the British microscopist, and seems likely long to continue so to do, and to sustain the reputation for

extended knowledge and laborious industry of its distinguished editor.

THE ECONOMY OF INSULATION.

THE amount of heat wasted in domestic service is enormous, and the fact is well worth the attention of engineers. Now and then there is evidence of some attempt having been made to prevent this wastage, but the result, generally speaking, has not been very satisfactory. And yet if insulation could be secured with any measure of success a continuous supply of hot water in the house, even through the night and until the fire is lighted again in the morning, might be at hand. In severe wintry weather, just when hot water is wanted most, the wastage is greatest, and the reservoir which was full of water not far from boiling-point just as we retired to our beds is stone cold in the morning, and the re-heating by the re-lit fire is often a slow process. And yet insulation can be made so perfect on a small scale that a single gas flame will eventually melt platinum, the heat being stored up until it reaches the required intensity. If this principle could be put into practice in our dwelling houses there would be a considerable saving of fuel and heat, and hot water would be available continuously. Great care is taken to insulate the electric wire to prevent leakage of the current, and it is surely an anomaly that similar steps cannot be put into practice in the case of the hot water supply. The undoubted advantages offered should induce some serious attention being given to the subject. The vacuum-jacketed flask, known as the thermos flask, is a good and familiar example of the economy of insulation, and though this method would scarcely be practicable on a large scale there must be other methods which could be made applicable to domestic heating apparatus. This way lies a fortune for the inventor, while the problems ought not to defy ingenuity.

COURAGE AND MEDICINE.

Socrates was of opinion that courage was a preservative against the plague, and he took his walks abroad in Athens during the period of the great epidemic described by Thucydides. The famous Diemerbroeck constantly visited the plague-stricken people of Nimeguen and yet escaped contagion. The manner, indeed, in which medical men have in all ages remained free from infection is one of the puzzles of medical history. Cynics might be inclined to say that chance has at all times had a good deal to do with medical immunity, and that a prosaic habit of mind, which is tantamount to lack of imagination, has been a great help-meet to mere fortuitousness. A kindlier view is that which attributes immunity to moral courage and which recognises in the medical man the pre-eminently plucky individual. Some 90 years ago Campardan of Gers collected some interesting instances of courage exhibited by medical men and by their patients. His book, "Du Courage dans les Maladies," was awarded a prize by the authorities of the Hôpital Saint-Louis, but its subject-manner is often not such as to commend it to the jealous stickler for medical ethics. It would appear, indeed, according to Campardan, that some of the greatest physicians have gone perilously near sheer quackery when appealing to their patients' fortitude. Thus the celebrated Dessault was not above pretending to cut for stone in the case of a Parisian wigmaker, who in his turn pretended not to be afraid of the operation. Dessault saw that the man, who fainted under the knife, would die if actually operated upon. He therefore, when the man came to, showed him a calculus which he said he had extracted from the bladder, but had really picked up from the table close by. But the patient

died under the impression that he had been cut for stone. Pious deception was part of the stock-in-trade of many otherwise most respectable physicians a century ago. Thus Desgenettes, médecin en chef of the army of the East in Napoleon's time, was of opinion that the word peste had better never be mentioned to troops exposed to the infection of plague. But in order to deceive his soldiers and to make them believe that they ran very little risk of infection, he went so far as to dip a lancet into pus from a plague-bubo and to puncture himself thoroughly therewith in the region of the arm-pit. On another occasion, in order to reassure a patient, presumably ill of plague, he drank out of that patient's glass. Was this legitimate courage? "Had I to paint the virtues of the good physician," says Campardan, "I should say 'Medicus est vir probus medendi peritus!'" "Woe unto him," he adds, "who should be satirised by the phrase." It is curious to note how opinion on the ethics of treatment has changed during a century.

MOUTH DISINFECTION.

MUCH attention has of late been directed to the importance of oral sepsis in many cases of chronic ill-health, and much work has been done which has shown the importance of mouth disinfection, without, however, indicating precisely how that disinfection is to be secured. Every practitioner has had cases of pyorrhœa alveolaris, or of persistent infection of the throat by the diphtheria bacillus, in which he has longed for some means by which the resistant microbes may be destroyed, but in which his efforts have proved unavailing. The problem of mouth disinfection is one of great difficulty owing to the large number of microbes present (according to Dr. Piasecki 1 cubic centimetre of saliva may contain 30 to 35 millions of organisms), because of their constant renewal, and on account of the steady withdrawal in the saliva of any drug employed for their destruction. Experience has taught that the value of an antiseptic must be gauged in the conditions which obtain in actual practice, when there are likely to be enormous difficulties in arriving at trustworthy conclusions. In the mouth the problem is complicated by two factors: first, the wide variations in the number of organisms present in normal saliva; and, secondly, the fact that these wide variations may occur rapidly within periods which are not greater than those involved in the experiments for the determination of the disinfection value of a drug. According to the experiments of Dr. Piaseeki, the organisms may be from 20 to 30 times as numerous on some occasions as on others, and many increase as much as 10 times during the period of an hour or two. It is necessary, therefore, to determine a normal bacteria-rate for the saliva of the subjects of an experiment in oral disinfection. A short time ago 1 Dr. Meredith Young, with the assistance of the Manchester Public Health Laboratory, investigated this problem and concluded that formamint lozenges were both an agreeable and efficient means of mouth disinfection, especially in young children. Dr. Piasecki in his paper in THE LANCET of Nov. 6th (p. 1373) has reinvestigated, with different technique and with due regard to the difficulties mentioned above, the value of formamint and of pyocyanase. He finds that formaldehyde in the saliva in such concentration as would result from the sucking of formamint lozenges diminishes the number of organisms present, but hardly to an extent to which any practical value can be attributed. We know, however, that formalin with glycerine swabbed on the tonsil is a very efficient remedy in tonsillitis. Pyocyanase, which is a mixture of proteolytic enzymes obtained from cultures of the bacillus pyocyaneus

and which is used as a spray, was also examined, and the conclusion is reached that it developed a greater bactericidal value than other disinfectants, the value of which had been properly investigated. With both formamint and pyocyanase it was found that if used in too large doses there was an increase in the number of organisms. This is explained as being due to injury to the tissues and normal destructive agencies. It is obvious that further investigations must be undertaken before the daily use of an antiseptic mouth wash by healthy persons can be recommended.

ABYSSINIA IN HEALTH AND DISEASE.

"FOR the moment," writes an Italian correspondent, under date, Rome, Nov. 12th, "European interest hovers round the death-bed of King Menelik, and Triple Alliance and Triple Entente are represented in the imperial antechamber of Addis-Abeba. Of these powers Italy is not the least concerned, her recent past and her immediate future giving her special cause for anxiety as to Abyssinian developments. After her great military reverse on March 1st, 1896, at Adua, the country teemed with Italian prisoners of war, many of them on the army medical staff, whose presence proved a double advantage to their captive compatriots, first for professional tendance, and second for the favourable conditions they succeeded in securing from the victor. Skilled in medicine and surgery and animated with the humane spirit of their office, seconded as these were by the kindly courteous address by which Italian medical men maintain the best traditions of the healing art, they devoted their spare hours to attending the native sick and wounded till their services were in request from the humblest of the natives to the most potent of the chiefs. not excluding King Menelik himself. As a result of this volunteered duty the Italian name was not only respected but beloved in a land previously jealous of its intrusion, and the prestige it had lost on the battlefield was more than retrieved in the ambulance and the sick-room. Reinforced by the Croce Rossa Italiana the sporadic efforts of the army medical staff were concentrated and organised into system, and now Abyssinia dates her start on the highway of hygiene and improved medical practice from the victory that, in turn, made her the debtor of the vanquished. For the last eight years Italy has strengthened her Legation with an efficient consultant. from whose observations of the progress of Abyssinia in the prevention and cure of disease the world is indebted for many reassuring details as to the country and its sanitary future. To his most interesting monograph, first communicated to the Italian Geographical Society, and published under the title of 'Medicina Vecchia e Medicina Nuova in Abyssinia,' the reader is referred for a luminous picture of the 'situation' medically considered. Dr. Lincoln de Castro. the consultant in question, has much to tell us of ancient practice among the άμύμονας Αίθιοπη̂ας (Homer's 'blameless Ethiopians'), but of more present interest is his statistical account of the 'movimento sanitario,' illustrated by the reports of the public ambulance, established by Italy, and rapidly resorted to by the natives, the Ras and the other chiefs, culminating in the appeal for its services from the Negus in person. From September, 1901, to Dec. 31st, 1907 (allowing for 10 months during which the ambulance work was suspended owing to absence of the personnel), the cases under medico-chirurgical treatment were 26,145, in addition to which vaccination was practised on more than 3000 applicants. These figures do not include the calls made to the city and its neighbourhood. nor the obstetric assistance rendered, but take cognisance only of the indigenous patient. The resources of the ambulance were freely drawn upon, not only for attendance, but

also for medicaments and surgical appliances, there being no public pharmacy or 'farmacista libero.' Surgical maladies top the list in the proportion of 30.50 per cent.; next come internal maladies (27 per cent.); then venereal and syphilitic (21 per cent.); ophthalmic diseases follow (12 per cent.); and finally cutaneous maladies (9.50 per cent.). Under each head Dr. Lincoln de Castro cites interesting details, variegated with picturesque 'objectlessons' in faith-healing, which has its votaries in Abyssinia dating from 'hoary tradition,' much more to be excused for their credulity than the twentieth-century fanatic who sins in the face of science and expert opinion. Parasitic disease is common—it being 'no disgrace for an Abyssinian to be filthy and lousy-all the more if he is in mourning, in which case dirt is the synonym of dark or sadcoloured.' A woman dressed in clean garments, according to Dr. Lincoln de Castro, is looked at askance 'because this laudable habit (that of being decently attired) is the prerogative of the "sciarmute," or priestesses of Venus. On malaria, which numbers victims at altitudes of 7000 feet and more, the monograph is specially illuminating; not less so the sections dealing with helminthology, a subject in which Abyssinia has a traditional interest. For the tænia solium and the mediocanellata, the ascaris lumbricoides and the oxyuris vermicularis the European remedy, ethereal extract of the male shield-fern is the favourite, the native kousso having long given way to it, except in regions beyond the European radius. Many details as to the physique, the diet, the tendency to disease among the indigenous population lend practical interest to Dr. Lincoln de Castro's pages, confirming as they do the salutary effects of the white man's intervention in equatorial or Central Africa-an intervention counselled more than 40 years ago by the Capuchin missionary (afterwards Cardinal) Massaia when in the late 'sixties' of last century he advised young Menelik to throw in his lot with the British expeditionary force under Napier of Magdala and give his country the benefit of an alliance which spells civilisation and progress all the world over."

THE LANCET,]

ANOTHER DIAGNOSTIC APPLICATION FOR LUMBAR PUNCTURE.

FRENCH neurologists have of late paid much attention to a group of changes in the cerebro-spinal fluid withdrawn by lumbar puncture from certain cases of spinal disease. The changes are a yellow tinge, liability to massive coagulation. and the presence of lymphocytes together with red blood corpuscles. This syndrome has been so far identified with two diseases only-sarcoma of the spinal dura mater and a form of meningo-myelitis. Of the three features of the syndrome the last, the cytology of the fluid, is the least constant, and some of those who have investigated the matter have considered that the absence of this feature in cases where colouration and clotting were noted indicated the presence of a new growth rather than of an inflammatory lesion. Mesbrezat and Roger, however, describe a case of meningo-myelitis in a man aged 29 years, apparently free from syphilis, in whom a progressive spastic paraplegia was associated with sensory changes in the lower limbs and partial loss of sphincter control. The cerebro-spinal fluid was drawn off repeatedly by lumbar puncture, and showed on each occasion a tendency to clot and a yellow colour; both these changes varied in degree, but neither was ever entirely absent. The characteristic cytological picture was, on the other hand, more often absent than present. The lesson to be learnt is that the presence of lymphocytes with red corpuscles is an inconstant part of the syndrome, and

that it cannot be used to differentiate between the two lesions with which the syndrome has so far been identified. It is not easy at first sight to see why these changes in the cerebro-spinal fluid should be common to two disorders so widely diverse in many ways, and why in each of these disorders it should only be manifested in certain cases. Mesbrezat and Roger, by reference to those cases in which a necropsy has thrown light on the causation of the syndrome, point out that, whether there be new growth or inflammatory change, there is a more or less complete band of meningeal adhesions encircling the cord, converting the subarachnoid cavity below the lesion into a kind of closed lagoon. Hæmorrhages, however small, into such a space will give the contained cerebro-spinal fluid certain abnormal constituents which cannot undergo reabsorption as they do when blood is shed into the normally drained subarachnoid cavity; the consequence is that pigmentation, a high fibrin content, and red corpuscles with or without lymphocytes, remain indefinitely. The syndrome may therefore be taken to prove that the fluid in which it is manifested has been withdrawn from a portion of the subarachnoid space shut off from the main cavity by inflammatory or neoplastic adhesions. According to Rindfleisch, cells with large nuclei may also be found in such a fluid if it has been withdrawn from a case of sarcoma; if this be so, it should serve to differentiate between the two lesions which have so far been indistinguishably identified with xanthochromia and massive coagulation of the cerebro-spinal fluid.

THE ANNUAL DINNER OF THE SOCIETY OF APOTHECARIES OF LONDON.

As the Master, Mr. R. Bligh Wall, said, in response to the toast of "The Society of Apothecaries," which was proposed by the Lord Mayor, after the "Lord Mayor's Day" dinner held at Apothecaries' Hall on Tuesday evening, those gatherings are of particular interest in that they afford a meeting-ground for the ancient and honourable traditions of English medicine with the even more ancient and no less honourable traditions of the Livery Companies of the City of London, and this year's reunion of medical men and civic worthies was in every way worthy of its predecessors. The dinner was excellent, the speeches were admirably short (being finished almost by 10 o'clock), and some very pleasant vocal music, which included the "Laudi Spirituali" grace, was all in keeping with the prevailing spirit of hospitality. After the loyal toasts, the Master proposed "The Lord Mayor, Sheriffs, and Corporation of the City of London," which was responded to by Sir John Knill. Mr. A. T. Norton, the Senior Warden, then gave "The Royal Colleges of Physicians and Surgeons," to which their respective Presidents replied, Mr. Butlin receiving a particularly hearty greeting, as it was the first time he had dined in the hall invested with his present dignity. The Senior Warden referred to the necessity of action on behalf both of his own Society and of the English Royal Colleges in the present crisis if they were not to lose their examining functions, and advocated the establishment of a State University of Medicine as the single method of entering the profession. Richard Douglas Powell, however, pointed out that a one-Faculty University was a contradiction of terms, and that the Royal Colleges were doing their utmost to bring about a working arrangement with the University of London under which their diplomates would become available for a medical degree. The toast of "The Visitors" was proposed by Mr. E. Parker Young and replied to by the Master of the Skinners' Company. Amongst the guests present were Mr. Sheriff Roll, Sir Clifford Allbutt, Sir William Church, Alderman Sir Thomas Crosby, the Master of the Skinners' Company, the Master of the Drapers' Company, the Master

of the Haberdashers' Company, Dr. F. H. Champneys, Mr. J. T. Helby, Chairman of the Metropolitan Asylums Board, Rev. Canon Morris, Mr. Hugh Davies, Sir Shirley Murphy, Sir Hugh Beevor, Bart., Dr. Lewers, Mr. Arbuthnot Lane, Fleet-Surgeon H. W. Macnamara, Dr. Leonard Hill, and the representatives of the *British Medical Journal* and THE LANCET.

INTERSTICE AND CREVICE.

It is not difficult to present cases which prove that the interstice and the crevice can be enemies of health. The man who allows particles of white lead to accumulate and to stay beneath his finger-nails sooner or later suffers from lead poisoning. To him the frequent application of the scrubbing brush may make all the difference between health and disease. The neglect, again, to remove particles of decaying food lodged between the teeth may well give rise to a septic process. Once more the brush must be brought into hygienic service. As is well known, a factor of no little importance in infant feeding is the use of a bottle which can be easily and scrupulously cleaned and which contains, therefore, no crevices which make the cleaning process difficult and which harbour pabulum and provide a breeding ground for disease-producing organisms. The interstices of the common dining fork are similarly hygienically objectionable and require careful attention when the fork is cleaned. The moustache cup is an abomination, the inside surface of the guard being almost inaccessible for cleaning purposes, and the hollow-stemmed wine glass presents a similar objection. Hygienic practice suggests, in fact, that all articles in domestic use which are difficult to clean because of interstice and crevice should be banished. This tenet, however, may more reasonably be supported in the case of articles intended to convey food than in the case of other articles, as, for example, clothes. It would be difficult, for example, to abolish the interstices and crevices of our boots, and yet we have it on scientific authority that the boots of the Members of the House of Commons may be a contributory factor to the seasonal prevalence of influenza in that place. It would appear ridiculous to suggest that the boots be left outside the portal of our homes and offices, although that would clearly be a real remedy which no amount of cleaning on a mat can ever be. The interstices of the outdoor garment obviously afford excellent lodgement for micro-organisms and dust, which the application of the clothes-brush proves day by day, but clothes should be brushed out of doors. There are cases in which the dangers of the interstice and crevice can be avoided. and where they cannot they can be minimised by a regard for cleanly practices.

UTERINE CRISES IN TABES DORSALIS.

REFERENCE was made in these columns some months ago to the extensive field of operation of the pathological process underlying tabes dorsalis, and an illustration was afforded by certain affections of the nose of an obscure nature which on examination turned out to be nasal crises, indicative of a more serious systematised disease of the spinal cord. The importance of the subject from the diagnostic and therapeutic standpoint may be further illustrated by a glance at a communication from Dr. Franz Conzen of the Polyclinic in Leipzig, which appeared in the Neurologisches Centralblatt for January of this year. A healthylooking married woman, aged 33 years, came to the Clinic complaining that for some months she had experienced labour pains although she was not pregnant. It appeared that during her menstrual periods, which were quite regular, but solely on the one or two days when no discharge was visible,

she was attacked by recurring pains, which felt exactly like those she had already experienced at her confinements, pains which seemed to be localised in the uterus and were accompanied by swelling and muscular contractions of the abdomen. In the course of two or three minutes they became unbearable, and at the height of the paroxysm she had a distinct sensation as though the child's head were passing through and distending the vagina. The total duration of these attacks was about four minutes, and they were always followed by general muscular trembling, especially of the lower extremities. The fact that the patient also complained of lightning pains in the limbs was significant, and careful examination revealed double Argyll-Robertson pupils and absent Achilles-jerks, though the knee-jerks were present. The diagnosis of tabes dorsalis was clearly correct. Visceral crises involving the uterus are not unknown. Abadie has described a case of "crises douloureuses de faux accouchement chez une tabétique." They are, however, probably very uncommon. The seat of the pathological process is the eleventh and twelfth dorsal segments of the cord, whence is derived both the motor and the sensory innervation of the uterus. The complex nature of the sensations thus aroused and referred to the uterus and vagina is of considerable interest from a psychological point of view. Muscular trembling during labour, a phenomenon reproduced in these uterine crises, is well known as a normal occurrence; it has been dignified with the name of "dolores conquassantes."

VOLUNTARY WITHDRAWAL FROM THE MEDICAL REGISTER.

WE publish in another column under this heading an interesting letter from a correspondent who quotes the recent decision of the General Medical Council in the matter and invites us to consider that the proposed standing order leaves both the Council and the medical profession insufficiently protected. We think that there may be ground for suggesting that the whole question should be reconsidered afresh, for undoubtedly there are the objections to voluntary withdrawals from the Register. even when no charge is officially known to be pending over the applicant's head, to which our correspondent has drawn attention. The standing order already drafted may be regarded as quite satisfactory so far as it goes, but does it go far enough? Should it be supplemented, for example, by a further order, under which the Council could satisfy itself not only that nothing is known of a kind detrimental to the professional morale of the applicant, but also that in his case there are circumstances exceptional and peculiar to himself which make it quite natural that he should wish to disappear from the Register? Liberty is a great thing, and we hesitate before setting any bounds to it, but it is impossible not to see that an unscrupulous person might do harm by continuing to practise medicine after withdrawal from the Register. He would be a fully qualified practitioner in the ordinary sense of the term, but free to practise on ethical lines totally contrary to the Council's view of right conduct, or to trade upon his possession of medical knowledge and medical diplomas in some other fashion equally detrimental to the true interests of the public. And it is to be remembered that if voluntary withdrawals from the Register are facilitated and the fashion is allowed to become prevalent, inextricable confusion will be set up between these withdrawals and penal erasures. In other words, the sole weapon which the Council possesses against deliberate offenders will be deprived of half its force. We do not think it would be quite as simple as our correspondent appears to believe for the General Medical Council to resist the wishes of a registered medical man to

cease from registration; but his letter brings some important points forward, and the General Medical Council will, we hope, debate them.

DOUBLE RESECTION OF THE INTESTINE.

REMOVAL of a portion of the bowel is now almost a commonplace in surgery, though opinions are still somewhat divided as to the best method by which the two ends of the intestine should be united. A very large number of methods have been devised for this purpose and many ingenious mechanisms have been invented to assist the surgeon, but experience seems to show that the more practice the surgeon has in performing this operation the less is he inclined to rely on these mechanical aids. At present, however, it is somewhat rare for resection of bowel to be performed more than once in the same patient, and therefore the cases recorded in the present number of THE LANCET by Mr. Hugh M. Rigby are of special interest. In the former of these cases the patient, a woman, 31 years old, had a piece of the large intestine removed for carcinomatous growth, and a year later another portion was removed for a recurrence of the growth. In the second case a boy, 9 years old, suffered from internal strangulation by a band which caused gangrene of a portion of the lower ileum measuring 24 feet in length. Mr. Rigby excised this and sutured the ileum to the cocum by lateral anastomosis. A focal fistula followed, the skin wound giving way, and it was resolved to short-circuit the affected portion of the bowel so as to divert the stream of fæcal matter. This was done, the small intestine being divided above its junction with the cæcum; the proximal portion was united by a lateral anastomosis to the transverse colon, and the lower portion of the bowel was invaginated and closed. Later it was decided to excise the short-circuited portion of the large and small intestine, the skin surrounding the facal fistula being removed at the same time. The portion of bowel excised in the second case comprised the hepatic flexure of the colon, the ascending colon, the cæcum, and the attached portion of the ileum. In this case also success followed the operation. We think that Mr. Rigby is to be congratulated on the results of these two cases, and they demonstrate the comparative safety with which extensive portions of bowel can be removed when due precautions are taken. In the second case the excision of so much intestine for the cure of a fæcal fistula is somewhat unusual, but in the circumstances it was fully justified. For the full appreciation of the difficulties of the cases, and of the methods in which those difficulties were met, it is necessary to read Mr. Rigby's paper.

By an inadvertence the name of Mr. Henry William Newton, L.F.P.S. Glasg., who has been the recipient of a knighthood, was omitted from the list of Birthday Honours which we published last week. Sir Henry W. Newton was born in the year 1842, his father being a well-known medical practitioner in Newcastle. He is the "father" of the city council, having entered that body in 1866. He has been a sheriff of Newcastle and has twice held the office of mayor. As a member of the city council he has done excellent work in the interest of the public health, and a few years ago his fellow citizens showed their appreciation of his labours by presenting him with the freedom of the city. We congratulate him in the name of the profession upon the well-deserved honour of knighthood.

THE death is announced of Mr. Michael Castaneda, M.B. Lond., M.R.C.P. Lond., formerly physician to the Spanish Embassy and Italian Consulate, and senior consulting physician to the Italian Hospital in Queen-square.

In connexion with the visit of the King of Portugal to this country His Majesty the King has conferred upon Dr. de Mello Breyner, Physician in Ordinary to King Manuel, the Companionship of the Royal Victorian Order.

A TELEGRAM from the Governor of Mauritius to the Secretary of State for the Colonies stated that 21 cases of plague with 12 deaths were reported on Nov. 12th.

Major Ronald Boss, F.R.S., has been awarded a Royal medal by the Royal Society in recognition of his researches in connexion with malaria.

THE Asylum Officers' Superannuation Bill has received a third reading in the House of Lords.

BRITISH MEDICAL BENEVOLENT FUND.

At the October meeting of the committee 27 cases were considered and grants amounting to £246 made to 22 of the applicants. Appended is an abstract of the cases assisted :--

applicants. Appended is an abstract of the cases assisted:—Widow, aged 40 years, of M.R.C.S., L.R.C.P. Quite unprovided for at husband's death, and at present, owing to a nervous breakdown, is incapable of supporting herself. No children. Voted £10.

Widow, aged 61 years, of M.R.C.S., L.S.A. Practically unprovided for at husband's death a few years ago, and has failed to maintain herself by taking boarders. Children only able to give very slight help Voted £12.

Widow, aged 42 years, of F.R.C.S., who was for many years a teacher at a London medical school. Since husband's death has supported the reself by letting lodgings or acting as housekeeper, but was compelled to give up her last post on account of ill-health. Now proposes to start a small tea-shop. Three children, all in institutions. Voted £15.

Widow, aged 41 years, of L.R.C.S., L.R.C.P. Irel., who practised is West Africa. Quite unprovided for and endeavouring to obtain boarders or lodgers. Four children, of whom two are still at school.

boarders or tougets. About Voted £10.

M.R.C.S., L.S.A., aged 84 years, who practised in London. No income. Children only just self-supporting; receives a little help from relations. Voted £12.

Widow, aged 69 years, of M.R.C.S. Only income £10 a year, and has been admitted by her daughter, whose earnings have so much decreased.

been assisted by her daughter, whose earnings have so much decreased that the help has to be withdrawn. Relieved four times, £50. Voted

been assisted by her daughter, when help has to be withdrawn. Relieved four times, £50. Voted £12.

Widow, agod 55 years, of L.S.A. No income, and dependent on a son earning 55s. a week. Relieved eight times, £90. Voted £12.

Daughter, aged 41 years, of late F.R.C.S. Quite unable to carn a living owing to continued ill-health, and dependent on her mother whose income is £30 a year. Relieved nine times, £84. Voted £12.

Widow, aged 42 years, of L.R.C.P. Edin, M.R.C.S. Quite unprevided for at husband's death from new growth a year ago, and endeavours to support herself by letting lodgings. Slight help from a stepson in the Aferchant Service. Relieved once, £12. Voted £12.

Widow, aged 52 years, of M.B., C.M. Aberd. Income £19 a year and makes a few shillings a week by taking boarders. Three children still at school. Relieved twice, £15. Voted £5.

Widow, aged 62 years, of L.R.C.P. Edin., M.R.C.S. Eng. Is helped by her daughter, a governess, and earns a little by teaching. Relieved 11 times, £37. Voted £5.

Daughters, aged 45 and 37 years, of late L.S.A. Both unable to earn a living on account of persistent ill health. Relieved five times, £30. Voted £12.

Widow, aged 60 years, of M.R.C.S. No income; a few shillings a most allowed by children. Health too feeble to permit of occupation.

Voted \$12.

Widow, aged 60 years, of M.R.C.S. No income; a few shillings a week allowed by children. Health too feeble to permit of occupation. Relieved 11 times, £123. Voted £12.

Daughter, aged 69 years, of late M.R.C.S. Lost her fatner when 3 years old, and has supported herself since the age of 17. After being a governess for many years, took a house and received boarders, but has recently found herself unable to meet expenses. Relieved twice, £19. Voted £5.

Daughter, aged 57 years, of late L.R.C.P., L.S.A. Being very dea and incapable of earning a living is dependent on a sister, a menta nurse, who is unable to earn as much as formerly. Relieved four times? £44. Voted £12.

nurse, who is unable to earn as much as formerly. Relieved four times £44. Voted £12.

Widow, aged 53 years, of M.R.C.S., L.S.A. No income; no children; health very feeble. Relieved six times, £56. Voted £12.

Daughter, aged 38 years, of late F R.C.S. No income, and owing to tuberculous disease of a large joint is only able to do light work occasionally. Receives a small weekly allowance from another charity. Relieved three times, £36. Voted £12.

L.R.C.P., L.R.C.S. Edin, aged 74 years. Has been unable to practise for some years past owing to deafness and ill-health, and is now practically dependent on friends. Relieved three times, £29. Voted £12.

M.D. Aberd., aged 57 years. Is quite incapacitated by lateral sclerosis. Only income two small pensions from charities. Two children, both still at school. Relieved once, £10. Voted £18.

Widow, aged 64 years, of M.R.C.S. Owns a small property in Ireland, but the income has now diminished to a few shillings a week. Children just self-supporting. Relieved ten times, £32. Voted £10.

Daughter, aged 60 years, of late M.R.C.S. No income; slight help from friends. Barns a few pounds yearly by knitting. Relieved five times, £54. Voted £12.

Widow, aged 69 years, of M.D. St. And. Being unprovided for

willow, aged 69 years, of M.D. St. And. Being unprovided for at husband's death established a home for invalids, but was unable to meet expenses; is now dependent on occasional help from friends. Relieved twice, £30. Voted £12.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 15, Wimpole-street, London, W.

THE STANDARDISATION OF DISINFECTANTS.

WITH SPECIAL REFERENCE TO THE DISINFECTANT PREPARATIONS COMMONLY SOLD TO THE PUBLIC.

A CHEMICAL AND BACTERIOLOGICAL INQUIRY.

SECTION II.*

THE BACTERIOLOGICAL EXAMINATION OF CERTAIN DISINFECTANTS.

PART I.—BACTERIOLOGICAL METHODS OF ESTIMATING THE GERMICIDAL EFFICIENCY OF DISINFECTANTS.

No satisfactory method of estimating the comparative germicidal efficiency of different disinfectants, under the varying conditions met with in actual practice, has as yet been devised. The conditions existing in practical disinfection are so numerous and vary so greatly that any single method hitherto suggested fails to meet more than a small proportion of them.

The more satisfactory standard by which to compare one germicidal substance with another is, of course, the comparative power that each possesses of destroying the vitality of a specific micro-organism. Chemical analysis, up to the present, has certainly failed to provide us with any means of determining the true value of a disinfectant, and it was assumed that this was because the problem was physico-chemical, rather than one of pure chemistry. Until the exact chemical composition of the various disinfectants is known and the germicidal value of their constituents is determined, and until, moreover, a definite understanding of the actual germicidal activity of a disinfectant in relation to its chemical and physical composition is arrived at, a chemical analysis, made with the object of estimating the germicidal properties of a disinfectant, must be comparatively valueless. With such knowledge, however, the chemical method may assume far greater importance than it now possesses.

It must be admitted that the bacteriological tests which have been used up to the present are too narrow to include many of the factors which must influence, advantageously or prejudicially, the bacterioidal power of the disinfectant. Amongst such factors may be reckoned the character of the micro-organism to be destroyed; the chemical and physical nature of the fluid medium or nidus in which it exists; the temperature at which the disinfecting process is carried on; the time during which the disinfectant is allowed to act; and the fluid with which it is diluted—distilled water, hard water, sea water, &c. In any experimental test an attempt should be made to introduce those factors which may be supposed to influence the process of disinfection as carried out under natural conditions, but these are so varied in character and degree that it would seem almost impossible to include them all. Some work has already been done in this field of investigation, but much still remains to be accomplished.

The earliest observations of which we have any record are those of Sir John Pringle (1 and 2), who in 1752 described a series of experiments "for making standards whereby to judge of the septic or antiseptic strength of bodies." Taking sea salt as his unit he worked out what might be described as a "sea salt coefficient" for several chemical substances. During the next hundred years numerous experiments with disinfectant substances seem to have been conducted on similar lines. In 1875 Buchanan Baxter (3 and 4) carried out a series of investigations on the action of certain disinfectant materials on impure cultures. Amongst his conclusions

were the following: that "antiseptic" is not synonymous with "disinfectant" power; that the medium in which the infective particles are distributed in disinfection by such substances as potassium permanganate and chlorine is of prime importance, and that no virulent liquid can be considered disinfected by carbolic acid unless it contain at least 2 per cent. of the pure acid. Jalan de la Croix (5), working along similar lines, studied the influence of the medium in which the disinfecting action occurs; he also recognised the importance of the greater resistance of spores.

With the introduction of pure cultures, as obtained and used by Koch (6), experiments were carried out which, although characterised by greater scientific accuracy, were lacking, perhaps, in those broader features of the older and rougher experiments, which caused them to conform more closely to the conditions that would be met with in practical disinfection. In these experiments, made in 1881, he used cultures of B. prodigiosus, B. pyocyaneus, and B. anthracis (both free from spores and as sporing forms); he soaked threads in a culture of the special organism, and afterwards dried them and exposed them for various periods to the action of the disinfectant to be tested. These threads were then washed and arranged at intervals on the surface of a solid nutrient medium and incubated to see if growth occurred alongside them. The use of the solid medium had the disadvantage that the remains of the disinfectant tended to adhere to the bacteria and to prevent growth, instead of being immediately dispersed and diluted as would be the case if the thread was introduced into a fluid medium. In 1887, to get over this difficulty, one of us (7) used silk threads which, after being thoroughly dried, were soaked in a culture or emulsion of a micro-organism, with or without These threads were then placed for varying periods in solutions of different strengths of the disinfectant They were then thoroughly washed to be tested. in distilled water to remove such of the disinfectant as had not been fixed; the threads were then trans-ferred to a fluid nutrient medium. Accounts of similar experiments were published by Fraenkel in 1889 (8) and in 1890 by Behring (9). In 1888 Sternberg (10) described a method he had used in 1880: "The time has been constant -usually two hours-and the object has been to find the minimum amount of various chemical agents which would destroy the test organism in this time. A certain quantity of a recent culture, usually 5 cubic centimetres, has been mixed with an equal quantity of a standard solution of the germicidal agent. Thus 5 cubic centimetres of a 1 in 200 solution of carbolic acid would be added to 5 cubic centimetres of a recent culture of the typhoid bacillus, for example, and after two hours' contact one or two loopfuls would be introduced into a suitable nutrient medium to test the disinfection. In the case in question the results obtained would be set down as the action of carbolic acid in the proportion of 1 to 400." This was evidently the predecessor of the drop method.

The next modification was that involving the use of a small quantity of bacterial emulsion made either from a broth oulture or from a gelatin or agar culture emulsified in distilled water, with a large quantity of the disinfectant, thus reducing to a minimum the amount of foreign material in the mixture. In 1886 Wynter Blyth (11) added measured quantities of emulsion in distilled water to known quantities of the disinfectant, and, after allowing this disinfectant to act for a given time, he transferred a drop of the mixture to melted gelatin, thus plating it out by Koch's isolation method. Krönig and Paul in 1897 (12) adopted an entirely original plan. They coated small garnets of uniform size with an emulsion in water of a culture containing sporulating anthrax bacilli. These were then dried and exposed to the action of the disinfectant solution. They were then rinsed and the organisms after being washed off into sterile water were plated and counted. Their experiments led these observers to consider the action of disinfectants upon bacteria, as a chemical reaction between the bacterial In 1897 Defries (13) protoplasm and the disinfectant. allowed small measured quantities of broth culture to dry in thin films at the bottom of test-tubes. Disinfectant dilutions were then added and allowed to act for certain times. They were then poured away, and after each tube had been rinsed culture medium was introduced; in this the organisms surviving in the film could grow. In 1903 Rideal

^{*} The parenthetical figures occurring throughout this Section have reference to the bibliography at the end of the Section. The first Section was published in The LANCET of Nov. 13th, 1909, p. 1454.

number of factors concerning which we have at present no accurate data. Chemical methods, by themselves, have hitherto given us little or no light on any of the points that have to be settled, and the information derived from the application of bacteriological methods is essentially sketchy and incomplete.

Of all bacteriological methods yet published the Rideal-Walker method has obtained the greatest vogue. sight it appears simple to carry out and if successful it gives definite information on certain points; it has been officially adopted by Government departments and many makers now state the "carbolic coefficient" figure of their special brand of disinfectant in their advertisements and on the labels on the bottles. Many sanitary authorities have fixed the price per unit of coefficiency as found by their analysts as the basis on which to buy disinfecting fluids for use in public We decided, therefore, that in order to departments. make a preliminary comparison between the members of any series of the disinfectants in common use we should, in the first instance at any rate, have to utilise the Rideal-Walker method as the one that was in most general use and the one that would give results most likely to be generally understood and therefore likely to meet most the immediate practical requirements of the employer of disinfectants on a large scale. We had previously employed this method sporadically, with somewhat disappointing results, but we realised that some practice might be needed to perfect the manipulation of a method in which much must depend on the acquisition of a certain degree of technical skill by anyone attempting to put it into practice. The results of our more prolonged and continuous series of experiments were again disappointing. Though the experiments were conducted with due care, and the details of the method, as described from time to time by the authors, were followed as closely as possible, the tables of results showed many discrepancies; not only did tubes show growth out of their natural sequence of time and dilution, but when coefficients were calculated at the nearest estimate the coefficient figure so obtained for the same sample of disinfectant varied so much, that it became clear to us that in our hands, at any rate, this was not a satisfactory method for the present purpose.

After four months' practice with the modified method, hereafter described, we again took up the Rideal-Walker method with the object of determining whether, with the further dexterity and technical skill we had acquired, we were able to obtain better results, and, incidentally, of making out if possible wherein lay the cause of the considerable difference which undoubtedly obtained between the coefficients claimed by the manufacturers and the figures we obtained by our modified method. In the series of experiments devised to test these points the same disinfectant was taken on each occasion, and this time the method as described in "The Bacteriological Examination of Disinfectants," by William Partridge, was followed in every detail. A series of 11 consecutive tests were made. From the results of these tests it was possible to obtain definite coefficients in three instances only; in these three instances the coefficient varied within very narrow limits—between 8.1 and 8.5—figures which corresponded very closely with the results obtained by the use of the modified method we had used in the rest of our experiments. Amongst the remaining eight experiments it was possible to obtain two very doubtful coefficients, which might be read according to the bias of the observer. The other six provided little information of any kind. On examining this series of tests and our other experiments carried out by the Rideal-Walker method, and comparing the results obtained from them with those obtained by our modified method, we gained the impression that the high carbolic acid coefficients (20 to 40, &c.) claimed by manufacturers, and often set out in strong contrast to the coefficient allowed by them for the disinfectants manufactured by their rivals, are only to be explained on some such grounds as the following:

1. A standard organism not having been decided upon and different disinfectants reacting differently towards different types of organisms, each manufacturer naturally chooses the coefficient found with the organism which gives the highest figures to his own fluid. Major C. E. P. Fowler (19) tabulates a series of coefficient figures obtained with a well-known disinfectant acting upon different organisms from which we getter that acting upon healths.

and Ainslie Walker (14) introduced a method by which they proposed to determine, and to state in definite numerical terms, the value of any disinfectant. Using carbolic acid as a standard, they classified other disinfectants as having certain units of coefficiency in terms of this acid. They laid down certain standard conditions as being essential to the attainment of successful results by this method. Carbolic acid of known strength is to be used; cultures are to be grown in definite media and for a definite time (24 hours). Loops used for inoculating the organism must be of standard size, and all apparatus should Taking the disinfectant to be tested, four different dilutions of suitable strength are made. A carbolic acid control, or standard, of a suitable dilution is also prepared. A volume of five cubic centimetres of each of these dilutions is introduced each into a sterile test tube. drops of an emulsion of bacteria are taken from a filtered 24 hours' growth of B. typhosus in broth of a standard formula, and introduced at half-minute intervals into the five tubes of the disinfectant. At the end of $2\frac{1}{2}$ minutes a sample of each of the mixtures is taken in a platinum wire loop and introduced into a test tube containing five cubic centimetres of sterile broth. Half a minute is thus allowed for this process for each tube and the tubes are inoculated in the same order as that in which the emulsion was transferred to the antiseptic. This procedure is repeated after 5 minutes, 7½ minutes, 10 minutes, 12½ minutes, and 15 minutes. The broth tubes thus inoculated with "the sample" are put to incubate at blood heat for 48 hours; they are then examined for growth.

The results of this examination may be charted, and if suitable dilutions have been chosen the comparative germicidal properties of the disinfectant of unknown strength and the carbolic acid of known (standard) strength may be seen at a glance and a numerical coefficient of the disinfectant, to carbolic acid taken as unity, may be deduced; for example:—

TABLE II.—Baoillus Typhosus, 24 hours' Broth Culture at 37°C., Room Temperature 68°F. (19/8/09).

Dis- infectant.	Dilu- tion.		ere e	min xpos lisini	ed t		Subculture.				
iniectant.	tion.	21	5	71	10	121	15	Period of incubation.	Tempera- ture.		
Cyllin	1-1000	+	0	0	0	0	0				
,,	1-1100	+	+	+	0	0	0				
,,	1-1200	+	+	+	+	+	+	48 hours.	37° C.		
,,	1-1300	+	+	+	+	+	+				
Phenol	1-120	+	+	0	0	0	0	l			

+ = Growth in subculture. 0 = No growth in subculture.

From this table it will be seen that cyllin in a dilution of 1-1000 kills bacillus typhosus in 5 minutes, but not in $2\frac{1}{2}$; 1 in 1100 kills in 10 minutes, but not in $7\frac{1}{2}$ minutes. Phenol in a dilution of 1-120 kills the same organism in $7\frac{1}{2}$ minutes, but not in 5. From these figures a coefficient is obtained by dividing the figure denoting the strength of the disinfectant by that giving the strength of the control carbolic acid, which kills in the same time; in this example it is necessary to strike an average between $\frac{1}{1}\frac{9}{2}$ and $\frac{1}{1}\frac{1}{2}$ —that is to say, between $\frac{3}{2}$ and $\frac{9}{2}$ · $\frac{1}{2}$ 8 · 7.

Modifications of the Rideal-Walker method have been suggested and used by several observers, mainly with the idea of attempting to bring the conditions into line with those met with in various disinfecting processes. Foreign substances of standard composition have been introduced into the "mixture." These foreign substances, by their presence during the act of sterilisation, undoubtedly influence the comparative bactericidal power of different types of disinfectants. Walker and Sommerville (15) have suggested the addition of starch, Fowler (16) of urine, Wynter Blyth (17) of milk, Martin and Chick (18) of a 3 per cent. ground and dried-up fæces emulsion. All these observers have found that the introduction of foreign material tends to greatly reduce the bactericidal power of any disinfectant used.

It is evident, then, that any series of experiments devised known disinfectant acting upon different organisms from to determine the exact value of a disinfectant must include a which we gather that, acting upon bacillus typhosus. this

disinfectant is 11 or 12 times as active as carbolic acid; upon staphylococcus pyogenes aureus, nine times; upon bacillus pestis, 34 times; upon bacillus coli communis, 11 · 4 times; and upon meningococcus, 54 times.

- 2. Sufficient care has not been taken to carry out a carbolic acid control for each experiment, and to do this with a freshly prepared sample of carbolic acid of recognised strength. It appears possible to us that some observers have used the same carbolic acid control as the standard for many tests, carried out on different days, and under different conditions, not recognising, for example, the vital importance of such an influence as temperature.
- 3. In some cases observers may have been satisfied to obtain coefficients from results showing irregularities, the bias of the observer tending to lower or raise the coefficient as the case might be.
- 4. Experimental errors generally seem to tend in the direction of raising the coefficient.

With regard to the Rideal-Walker test, then, we came to the following conclusions:—

(1) Accurate results may be obtained.

- (2) To obtain such results great care and attention to detail and constant practice are necessary.
- (3) The test should always be carried out by one who is in such constant practice.
- (4) It should be carried out at a standard temperature, and we suggest that the temperature of the fluids used should not vary more than 3° F. from 65° F. (62° to 68° F.). A water bath may be used for the maintenance of this standard temperature.
- (5) One type of organism should be agreed upon and used in testing all disinfectants required for the same general purposes.
- (6) Where the disinfectant is to be used in plague or cholera centres or for special surgical or other similar work the special micro-organism to be destroyed should be used in the test.
- (7) A carbolic acid solution freshly made up from a sample of known strength must be used as the control in each experiment.
- (8) All the other standard requirements of the method, such as size of loop, special culture medium, age of culture, equality of time intervals, &c., must be rigidly complied with.

Our results closely resemble those obtained by Major Fowler in testing this method on behalf of the Disinfectant Standardisation Committee appointed by the Royal Sanitary Institute (20), and Lieutenant-Colonel Firth and Professor Macfadyen in their report on this investigation appear to have arrived at conclusions very similar to our own.

Our unsatisfactory experiences of the test performed in the orthodox way led us to devise a certain modification by which we hoped to obtain an extended and more definite picture of the comparative germicidal power of disinfectants. These modifications were chiefly concerned with: (1) the number of dilutions employed and the number and duration of the time intervals allowed in each experiment; (2) the organism and the medium used for its sub-culture; (3) the amount of the "sample" of the "mixture" taken after the disinfectant has acted on the micro-organism; and (4) the method of determining the coefficient.

1. The number of dilutions and time periods.—In the first place we increased the number of time periods at which the test was carried out and thus obtained "samples" in which the disinfectant had been acting up to 30 minutes. This, of course, necessitated an increase in the number of dilutions so as to ensure that at the first time period of 2½ minutes and at the last of 30 minutes both positive and negative results might be shown. Between these two extremes a curve indicating the line of demarcation between positive and negative results could thus be drawn.

In most instances the grading of the various disinfectant solutions was by intervals of about 10 per cent., and to keep our curve within the limits of the charted results it was often necessary to work with as many as 12 dilutions—i.e., to incoulate 12 tubes within 2½ minutes. This could not be done in the ordinary way, but was easily accomplished with the assistance of the time-saving device described below.

The carbolic acid was tested side by side with the disinfectant of unknown strength, a corresponding number of dilutions being made in order to obtain the same "curve of demarcation"; this curve could be compared with that obtained with the disinfectant and a coefficient thus deduced. 2. The organism employed and the medium in which it is cultivated.—As most of the disinfectants tested are to be used for sanitary purposes, it seemed desirable to select one of the organisms of the typhoid-colon group on which to carry out the test. The fact that for bacillus coli communis we have a specific culture medium, McConkey's bile salts medium, which by a colour change (blue to red) indicates very clearly the growth of that organism, led us to adopt the bacillus coli communis, with McConkey's medium for sub-cultures, in all our experiments.

The use of the typhoid bacillus is after all merely a fetich giving an undeserved feeling of confidence in the coefficient figure. Without a special reaction, such as that obtained with McConkey's medium, falsification of the results by accidental contamination is very likely to occur. Moreover, there is the additional disadvantage that work with the typhoid organism is attended with unnecessary danger. Bacillus coli communis as a test organism, in addition to the fact that it is slightly, but only slightly, more resistant than the typhoid bacillus to the action of carbolic acid, has the following advantages: (1) it is non-pathogenic; (2) a culture of very constant biological characters may be obtained by carrying on a culture every 24 hours in broth of the same standard composition; and (3) if McConkey's bile salts medium is used for sub-cultures the risk of misleading results from accidental contamination is practically eliminated.

3. The "sample" of the "mixture" taken after the action of the disinfectant on the mirro-organism.—In going over our results obtained by the Rideal-Walker method we came to the conclusion that their irregularity might be due, in part at any rate, to the fact that the loopful of the mixture taken for sub-cultures, being so small, might very easily fail to include any living bacteria when but few remained in the The plating-out experiments of Martin and Chick (18) go to show that in the case where the action of the disinfectant has just failed to prevent growth, this growth is set up by a very few remaining organisms. order, therefore, to take a larger quantity, and so a fairer sample, at each inoculation we made use of small platinum spoons which held at least three times as much as a standard loop; the extra amount of disinfectant conveyed at the same time was immediately well diluted by being shaken in a large quantity (10 cubic centimetres) of the sub-culture medium.

4. The method of determining the coefficient.—Here again we have found it expedient to introduce a modification. In the Rideal-Walker method the carbolic acid coefficient is found by dividing the figure indicating the dilution of the disinfectant by that expressing the dilution of the carbolic acid which takes an equal time to kill all the organisms, the time taken varying from 2½ minutes to 12½ minutes.

In our method we first take the figure representing the percentage composition of the weakest dilution of the disinfectant which kills at 2½ minutes, and divide this by the figure representing the percentage composition of the weakest dilution of the carbolic acid which also kills at 2½ minutes; we thus obtain a coefficient for the 21 minutes period; a coefficient for the 30 minutes' period is obtained in the same way. We then take the mean of these two figures as the true coefficient. The accuracy of the points which provide the data for obtaining our coefficient is confirmed by the regularity of the intervening curves forming the "lines of demarcation." The occurrence of positive results on the negative side or negative results on the positive side may be looked upon as "faults," and these faults, if few in number and obviously of accidental origin, may be neglected. In any case, they cannot influence the result. We suggest that by this method—(1) we obtain a fairer comparison between disinfectants which act quickly and those which act more slowly; (2) experimental error is at once made evident; and (3) a more extensive picture of the germioidal power of a disinfectant is exhibited.

PART II.—THE MODIFICATION OF THE RIDEAL-WALKER METHOD.

The organism for the test.—Bacillus coli communis was used throughout the whole of the experiments; broth was sown and the culture allowed to grow for 24 hours at 37°C. The broth is prepared in the following way. Mince 1 pound of fat-free bullock's heart meat and allow it to macerate in cold water for two or three hours. Cook slowly over a small gas fiame for two or three hours more, then boil and filter, and add water up to a litre. Add 10 grammes each, of sodium

chloride and peptone (Witte), and standardize the broth to an acidity of +1.5 (phenol-phthalein). To obtain an emulsion from the 24 hours' culture, the mouth of the testtube was sealed in a flame, and the tube then well shaken to break up the growth. Lastly, the shaken culture was filtered through a double layer of Swedish filter paper. By these means the larger clumps were eliminated and an emulsion having biological characters as constant as possible was

The carbolic acid used as control.—We made use of samples from a large bulk of absolute phenol, great care being taken that the crystals when weighed should be as dry as possible, since rapid lowering of the percentage by weight of phenol present takes place when deliquescence occurs. The closeness of the results obtained with the various control tests afforded evidence that little or no variation had occurred through any lack of attention to this detail. The original chemical test of our carbolic acid was supposed to indicate that the bulk was of such strength that 1.1 gramme might be reckoned as I gramme of pure phenol; the dilutions were, therefore, made on this basis. More elaborate tests made at a later stage showed, however, that it would be more just to consider that a dry sample of our crystalline carbolic acid consisted practically of 100 per cent. of pure phenol; all our calculations, therefore, have been made on that basis, the formulæ 1·1-100, 1·1-110, 1·1-120, &c., being converted platform and is now cool and ready for use; this occurs each

into percentages in order to express our results in sufficiently accurate figures.

The dilutions were invariably freshly made, as it was found that after 24 hours they lost some of their bactericidal power, even though kept corked and in the dark (see results of

experiments).

The disinfectant dilutions.— These dilutions were made with sterile distilled water; in the case of thick, syrupy disinfectants a quantity of never less than 5 cubic centimetres was taken to make up the stock generally a 1 per cent. solution. From this stock such dilutions were made as broad preliminary tests showed to be necessary. As little delay as possible was allowed between the making of the dilutions and the carrying out of the test. The dilutions chosen, following the Rideal-Walker method, were generally graded so that the increase of water in each dilution was about 10 per

cent. of the amount contained in the strongest—thus, 1-100, 1-110, 1-120, &c., or 1-200, 1-220, 1-240, &c. This gradation, though perhaps the most quickly made, and giving figures in every-day use, introduces a complication which it would be well to avoid; for, as the dilutions get weaker, the intervals between successive dilutions become less, the progression being geometrical instead of arithmetical. We recommend, and in future shall use, dilutions which increase by a regular arithmetical percentage.

Special apparatus used in the method. - To contain the disinfectant dilutions for the purposes of "seeding" bacteria, instead of test tubes, glass specimen pots 2½ inches high and i inch in diameter were used. These were arranged in a row in holes in a wooden board or in a water bath specially prepared to receive them, and though they were left uncovered it was found that the results were not vitiated by contamination owing to the specific composition of the medium used for the secondary cultures. Against each specimen pot was a letter indicating the dilution it contained. For the purposes of "seeding" the disinfectant, and also conveying "samples" of the mixture to the secondary culture tubes, specially constructed platinum spoons were used. To a glass rod was fixed a stout platinum wire, which at its distal end was soldered to the edge of a tiny platinum cup—a half sphere of eight millimetres in diameter. The object of the use of this spoon was to render it possible to convey more fluid at a time than could be carried in an ordinary platinum loop. It was found by a series of weighing experiments that the spoon took up about 0.08 cubic centimetre of water, while a loop would take up less than a third as much. These spoons were made so strong that they could be used as stirring instruments, so that effectual mixing could be ensured at the same time that the material was introduced. As they were somewhat thick and so required a considerable time to become heated to redness and then in which to cool it was found necessary to have four in use, in series, and to employ a simple automatic apparatus, with the help of which they could be sterilised and cooled, each in turn. This apparatus consists of a double wheel and a delivery frame (see Fig. 1). On the circumference of the wheels are cut pairs of oblique notches in which the handles of the spoons may rest while the platinum cup is being heated in the flame of a Bunsen burner standing at the side of the wheel; there are six pairs of the notches, and three of them will hold spoons in whatever position the wheel rests. As each spoon after use is placed in position in a pair of these notches and brought into the flame the wheel revolves, moving the spoon previously in the flame into a position where it can cool; another spoon is moved still further from the flame,

time a spoon is introduced, so that, automatically, every time one is put into the flame another is delivered, sterilised and cooled. The use of this apparatus has resulted in a great saving of time and has enabled us to work with numbers of dilutions that without it could not have been

attempted. The secondary culture tubes .-For these, McConkey's bile salts medium was used. This medium encourages the growth of bacillus coli communis at the expense of other organisms. As the glucose is fermented the acid formed turns the blue litmus red and gas escapes as visible bubbles. It is pre-pared according to the following formula: sodium taurocholate, 5 grammes; glucose,

5 grammes; peptone, 20 grammes; Merck's litmus puriss (5 per cent.), 100 cubic centi-metres; distilled water to a litre. Ten cubic centimetres of this was placed in each test

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Fig. 1.

Apparatus for the sterilisation and cooling of a series of platinum cups. (This apparatus, together with the special inoculating spoons, may be obtained from Messrs. Baird and Tatlock of Cross-street, Hatton-garden, E.C.)

tube and the test tubes were arranged in racks; each rack contained the set of tubes to be inoculated after one of the time periods and each tube was labelled with a letter corresponding to the pot of disinfectant from which it was to be inoculated and a figure for the time during which the bacilli therein would have been under the influence of the disinfectant.

Preliminary tests.—Preliminary tests of the unknown disinfectant were first performed with dilutions at wide intervals in order to find out with what strengths a complete critical curve could probably be obtained—that is to say, one which was composed of the results obtained with at least one dilution which was strong enough to kill the bacillus coli communis in two and a half minutes and with one, at least, which was not strong enough to kill after 30 minutes. These preliminary tests were only done at the two and a half and five minutes' intervals and at 25 and 30 minutes, as from these sufficient data for our purpose could be obtained.

The method of conducting the experiments.—The series of dilutions of the unknown disinfectant were first tested, and then, immediately, the series of carbolic controls, or Very often a double series was carried out: vice versa. first one disinfectant, then the carbolic control series, and then another disinfectant, one after the other. After the various dilutions had been made up 5 cubic centimetres of

each were placed in order in a labelled specimen pot. The emulsion was now prepared and placed ready to hand, as were also the racks containing the tubes of secondary culture medium, and the sterilising apparatus on which the spoons were arranged. A stop-watch was started, and one after the other the pots of disinfectant were "seeded" with spoonfuls of emulsion, beginning at the strongest and finishing with the weakest; each seeding took altogether from 10 to 12 seconds, so that if there were as many as 12 to be "seeded" the whole process would occupy nearly the whole of the time available (2½ minutes). In taking out the seeding material the spoon should always be withdrawn from the fluid at the same speed, somewhat quickly. Unless this point is carefully attended to unequal, and often too small, quantities of the seeding material will be held in the spoon. A few trial samples should be taken and carefully measured or weighed until the experimenter is satisfied that at the speed at which he has to work he can take equal samples regularly and consistently. At the end of $2\frac{1}{2}$ minutes samples were taken from each pot in turn, again beginning at the strongest, and placed in the secondary culture tubes lettered to correspond; thus each pot was sampled after 2½ minutes; as a matter of experience the timing went very regularly after a little practice. The same process was repeated after 5 minutes, after $7\frac{1}{2}$ minutes, 10 minutes, $12\frac{1}{2}$ minutes, 15 minutes, 20 minutes, 25 minutes, and 30

Immediately after the unknown disinfectant series had been worked through the carbolic control series was begun. The pots were filled in the same way with the dilutions which experience showed were likely to give the required results: these dilutions lay between certain limits which had to be slightly modified in accordance with any rise or fall in the temperature of the room but it was not usually necessary to use more than seven or eight of these dilutions in the test. They were inoculated in the same fashion as were the disinfectant dilutions; at $2\frac{1}{2}$ minutes and at 5 minutes samples were taken from the stronger dilutions, and at 25 and 30 minutes from weaker dilutions; the beginning and end of a control curve were thus obtained.

It will be noticed on going over the tables that certain tubes were omitted; this was done simply on the ground of economy, as the result of the preliminary experiments showed us that these particular tubes would fall outside the line of the critical curve. In cases where tubes were omitted at the beginning of each time period an allowance, which would amount to about 12 seconds for each tube omitted, was made when taking samples; thus each tube was inoculated after its proper interval.

The temperature of the room.—This was always noted, and as it was found to seriously influence the result expressed as a coefficient (see results) all tests were done when the temperature was between 62° and 67° F. Tests that were carried out during a heat wave in August, when the room temperature rose to 72° F., showed a coefficient for two disinfectants 20 per cent. lower than at a temperature of 62° F., this being due to the great increase of germicidal activity acquired by the carbolic acid control as the result of a slight rise in temperature. For certain experiments carried out at a time when the temperature of the room fell below 62° F. a water bath with a standard temperature (64° F.) was used.

Incubation.—The tubes were collected in wire baskets and incubated at blood temperature for 48 hours. If regular observations were taken something like the following was found. After about 12-14 hours some of the tubes of media would be seen to be assuming a purple tinge which fairly rapidly turned to pink and in about two hours would be bright red and show by bubbles the formation of gas. This change, as might be expected, occurred first in the tubes in which the bacilli had been exposed to the power of the weaker dilutions of the disinfectant for the shortest periods.

During the next ten hours other tubes would show growth, and it was remarkable how regularly the curve showing positive results spread during this period in the direction of the stronger dilutions and the longer times. These time observations were, if possible, filled in on the result charts, and were of the greatest value as showing whether the experiment was proceeding satisfactorily and in conformity with other experiments. An example of this is seen in Table XIV., in which it will be noted that the numbers increase regularly from right to left and from above downwards. This delay in the appearance of growth after samples are treated by stronger dilutions for a longer time depends,

no doubt, on the fact that fewer bacteria, probably those that are more resistant, remain alive, and consequently require a longer time in which to multiply and to give evidence of their presence by the formation of sufficient acid to turn the medium red.

Tabulating the results.—On filling in a table with the results of the experiment—a plus sign (+) where growth had occurred and a naught (0) where the medium had remained sterile—if the experiment had been successful—a curve could be drawn by joining together the 0 signs indicating the points at which lethal action of each dilution was complete. After the disinfectant dilutions had been allowed to act for 2½ minutes, only the strongest had killed all the bacteria; in 5 minutes perhaps one or two weaker dilutions of the disinfectant were effective, and so on until in half an hour all but the very weakest dilutions had killed the bacteria that were introduced. At the commencement of the curve, therefore, the "dilution" factor was of first importance, at the end, the "time" factor. The importance of these individual factors comes out still more markedly owing to the approximation of the dilutions, as they get weaker in a geometrical progression.

The carbolic acid coefficient.—When the two curves of disinfectant and carbolic acid control results were obtained the coefficient was deduced as follows. The figure representing the percentage strength of the weakest lethal dilution of the carbolic acid control was divided by the figure representing the percentage strength of the weakest lethal dilution of the disinfectant being tested. This was done both at the 2½ minutes' line and at the 30 minutes' line and a mean of the resulting figures was taken as the carbolic acid coefficient.

PART III.—RESULTS OF EXPERIMENTS.

CARBOLIC ACID.

(1) Absolute Phenol.

After practice had led us to obtain and expect consistent results in the experiments carried out by this modified method, we decided that it was first essential to test pure carbolic acid thoroughly, using as many dilutions as convenient in order to obtain a definite idea as to what strength should be used in the control tests. The results of these experiments are given in the following tables, which represent two tests performed in sequence with the same dilutions, culture of organisms, &c.:—

TABLE III.—Absolute Phenol.

	Percentage dilutions.												
Minutes.	1.22	1.10	1.00	0.917	0.846	0.786	0.733	0.687	0-647				
24	0	0	+	+	+	+	+	+	+				
5	0	0	0	+	+	+	+	+	+				
74	0	0	0	0	+	+	+	+	+				
10	0	0	0	0	0	+	+	+	+				
124	0	0	0	0	0	0	+	+	+				
15	<u></u>)	0	0	0	0	0	+	+	+				
20	0	0	0	0	0	0	+	+	+				
25	0	0	0	0	0	0	0	+	+				
30	0	0	0	0	0	0	0	+	+				

Absolute phenol.

	Percentage dilutions.												
Minutes.	1.22	1.10	1.00	0.917	0.846	0.786	0.733	0.687	0-647				
24	. 0	0	+	+	+	+	+	+	+				
5	, o	0	0	0	+	+	+	+	+				
74	0	0	0	0	0	+	+	+	+				
10	. 0	0	0	0	0	+	+	+	+				
121	0	0	0	0	0	0	+	+	+				
15	0	0	0	0	0	+	+	+	+				
20	0	0	0	0	0	0	+	+	+				
25	0	0	0	0	0	0	+	+	+				
30	0	0	0	0	0	0	+	+	+				

4/6 09. Room temperature, 61° F.; + signifies growth; 0 signifies no growth.

Oertain points are brought out very clearly in these tables: firstly, the two tables resemble each other closely both in the position and form of the curve forming the "line of demarcation," secondly, irregularities and "misplaced" signs are practically absent. At each time-period there is a definite point on one side of which the dilutions have all been strong enough to kill, whilst on the other they have been too weak to do so. Similarly, for each dilution, the results show definitely at what time-period all the bacteria are dead. An exception will be noted to this last statement in the second series where a sample from the 0.786 per cent. mixture shows no growth at the 12½ minutes period, yet does so at 15 minutes; this is, of course, an imperfection, but only such as may be expected in a biological test, and the coefficient being determined in the way described above the results are not affected.

From these tables it is possible to work out a coefficient of carbolic acid against itself which should, of course, be unity.

The coefficient =
$$\frac{\left(\frac{1 \cdot 1}{1 \cdot 1} + \frac{0 \cdot 733}{0 \cdot 786}\right)}{2} = \frac{1 \cdot 00 + 0 \cdot 932}{2} = 0.966.$$

The error is therefore 0.034, and this may be taken as likely to occur in all our experiments, but the results are sufficiently exact for practical purposes. At a room temperature of 61° F. the dilutions 1·1 per cent., 1·0 per cent., 0·917 per cent., and 0·846 per cent. were sufficient, therefore, to give the demarcation point at the 2½-minute period and 0·786 per cent., 0·733 per cent., 0·687 per cent. and 0·647 per cent. for the 30-minute period. These dilutions, therefore, were generally used in the control tests, but as the weather became warmer and the temperature of the fluids used increased, it was found necessary to employ in addition weaker or stronger dilutions in order to include the points necessary for obtaining a coefficient.

Wishing to find out how the bactericidal power of the carbolic acid control would be affected by keeping, we performed a similar test with the same dilutions of phenol, after they had been kept, corked and in the dark, for 24 hours; this test also made in duplicate gave the following result :-

TABLE IV .- Absolute Phenol (Kept Diluted 24 Hours).

Minutes.	Percentage dilutions.												
minutes.	1.22	1-10	1.00	0.917	0.846	0.786	0.733	0.687	0.647				
2 <u>}</u>	0	0	+	+	+	+	+	+	+				
5	, 0	. 0	, 0	+	+	+	+	+	+				
74	0	. 0	0	0	+	+	+	+	+				
10	0	0	0	0	+	+	+	+	+				
124	0	0	0	0	+	+	+	+	+				
15	0	0	0	; 0	0	+	+	+	+				
20	0	. 0	0	0	0	0	+	+	+				
25	0	0	0	0	0	+	+	+ '	+				
30	0	0	0	0	0	0	+	+	+				

Absolute phenol (kept diluted 24 hours).

Minutes.	Percentage dilutions.												
minutes.	1.22	1.10	1.00	0.917	0.846	0.786	0.733	0.687	0.647				
24	0	0	+	+	+	+	+	+	+				
5	0	0	0	+	+	+	+	+	+				
71	0	0	0	0	+	+	+	+	+				
10	0	0	0	0	+	+	+	+	+				
124	0	0	0	0	0	+	+	+	+				
15	0	0	0	0	0	+	+	+	+				
20	0	0	0	0	0	0	+	+	+				
25	0	0	0	0	0	0	+	+	+				
30	0	0	0	0	0	+	+	+	+				

5/6/09. Room temperature 62° F.; + signifies growth; 0 signifies no growth.

Here, again, we notice a close resemblance between the two tables: the curves indicating the line of demarcation are not without their imperfection (in the 0.786 per cent. dilution column in each instance), but as the coefficient works out at

$$\left(\frac{\frac{1 \cdot 10}{1 \cdot 10} + \frac{0 \cdot 786}{0 \cdot 846}}{2}\right) = \frac{1 \cdot 00 + 0 \cdot 929}{2} = 0.969 \text{ there is again}$$

only the same extremely low experimental error, 0.031. Apparently, also, the phenol loses very little of its bactericidal power if kept diluted only 24 hours, but we considered that this was sufficient to compel us to use freshly made dilutions for each experiment.

The influence of the temperature at which the disinfecting fluids are used can be studied by an examination of the 40 to 50 control tests carried out with carbolic acid; it will be seen that, roughly, the disinfecting power of the fluid increases as the temperature rises.

(2) Crude Carbolio Acid (Beall and Son, Chemists, Cambridge).

It was considered of interest to test this substance which, though at one time very cheap, has lately, owing to recent legislation, risen in price. A sample was purchased from a chemist.

Labelled—"CARBOLIC ACID (POISON)."
"For the disinfection of drains, cesspools, etc. and for the treatment of cattle diseases."
"To destroy all bad odours generated by the decay of Animal refuse, etc., etc. Mix one pound of the acid with ten gallons of soft water (warm if possible), stir well together and thoroughly rinse the pen, stable, or cowshed. Drains, stables, cesspools, etc., may be cleansed in the same manner.
With the view of impregnating the atmosphere of the pen, stable, etc., and of destroying all missma, place about the buildings, out of reach of the cattle, some of the undiluted acid mixed with a little sawdust or surface earth."

Physical characteristics. - A clear brownish fluid, which dissolves in water with some difficulty, and even after much shaking there are still some oily drops on the surface.

Chemical composition .- Per cent. : Phenols, 82.65; water, 2.80; inert bodies, neutral oils (by difference), 14.55—100.00.

Results of bacteriological tests.—The following table shows the results of a test :-

TABLE V .- Crude Carbolio Acid.

		Dilutions.											
Minutes.	1-300	1-400	1-500	1-600	1-700	1-800	1-900	1-1000					
	0.333	0·250	0.200	0.166	0.143	0·125	0.111	0.100					
24	0	0	+	+	+								
5		0	0	+	+	+							
7½		0	0	+	+	+							
10			0	+	+	+	+						
121			0	+	+	+	+						
15				+	+	+	+	+					
20				0	+	+	+	+					
25				0	+	+	+	+					
30				0	+	+	+	+					

Carbolic acid control.

M	Percentage dilutions.											
Minutes.	1.10	1.00	0.917	0.846	0.786	0.733	0.687	0.647				
21	0	0	+	+								
5	0	0	+	+								
25					0	0	+	+				
30				•••	0	0	+	+				

16/7/09. Room temperature 67°F.; + signifies growth; 0 signifies no growth; ... signifies not tested.

The coefficient is therefore-

$$\left(\frac{\frac{1\cdot00}{0\cdot250} + \frac{0\cdot733}{0\cdot166}}{2}\right) = \frac{4\cdot0 + 4\cdot4}{2} = 4\cdot2$$

(3) Calvert's No. 5 Carbolic Acid.

Labelled-"FOR DISINFECTING PURPOSES."

"This acid is highly concentrated and will arrest all kinds of putre-factive change and destroy ALL THE LOWER FORMS of insect or vegetable

life.

It must be WELL MIXED with warm water, in proportion of one ounce Acid to two quarts of water. The solution thus made is of sufficient strength to purify drains, water-closets, urinals, ash-pits, stables, cowsheds, etc., to cleanse rooms infested with insects, also to destroy weeds on garden walks, or bad odours and green moss in cellars or yards.

Half a pint of the SOLUTION added to any vessel used in the sick-room will prevent injurious effluvia or infection therefrom.

To prevent the spread of contagious diseases when prevalent, the floor should be DAILY sprinkled with the SOLUTION and ½ lb. well mixed with 10 lbs. of wet sand placed on plates in every room. A sheet should be hang over the door of the sick-room, and kept well saturated with the shove SOLUTION.

above Solution.

From dead bodies all infection will be prevented and all effluvia destroyed, by wrapping them in sheets asturated with the SOLUTION."

"N.B.—This acid is guaranteed (by Trade Mark on Capsule and Label) to be full strength and free from Tar Olls that are always in so-called Crude Carbolic acids which are not reliable disinfectants."

Physical characteristics.—An oily brown fluid insoluble in cold water except in weak dilutions, when it forms a clear solution.

Chemical composition.—Per cent.: Phenols, 93.26; water, 6.00; neutral oils, by difference, 0.74—100.00.

Results of bacteriological tests.—The following table shows the results of a test :-

TABLE VI.—Calvert's No. 5 Carbolic Acid.

	Dilutions.												
Minutes.	1-200	1-250	1-300	1-350	1–400	1-450	1-500	1-550	1-600				
	0.500	0.400	0.333	0-286	0-250	0-222	0.200	0.182	0.166				
21/2	0	0	16	15	15	15							
5	0	0	0	15	15	15							
71		0	9	164	16	15	15						
10	1	0	0	16	154	15	15						
12₺			0	16	15	15	15	15					
15			0	17	16	15	15	15					
20			0	18	161	15	154	15					
25	 		0	24	164	181	154	15	15				
30		1	0	24	17	154	154	15	15				

Carbolic acid control.

	Percentage dilutions.											
Minutes.	1.10	1.00	0.917	0.846	0.786	0.733	0.687	0.647				
2 <u>1</u>	0	17	16	16	15							
5	0	0	17	16	16							
25				0	0	16	16	15				
30	٠			0	0	17	16	16				

30/9/09. Room temperature, 64°F.; the figures signify growth; 0 signifies no growth; ... signifies not tested. The figures also indicate roughly the number of hours that clapsed between the inoculation of, and the appearance of growth in, the tubes of McConkey's medium.

The coefficient is therefore-

$$\left(\frac{\frac{1\cdot 10}{0\cdot 400} + \frac{0\cdot 786}{0\cdot 333}}{2}\right) = \frac{2\cdot 7 + 2\cdot 4}{2} = 2\cdot 5.$$

KRYSYL. (Drum Sample.)

Labelled-"A NEW PHENOL DISINFECTANT.

Offers many advantages over carbolic acid.

Krysyl is non-caustic and is perfectly soluble with water, forming a milky, opalescent, non-separable mixture, whereas carbolic acid sinks to the bottom and consequently exerts but little effect.

Krysyl is regularly supplied to some of the largest municipal corpora-tions in the world as well as various Foreign Governments, and will be found one of the best and cheapest disinfectants and germicides on the

Krysyl will be found invaluable in warding off attacks of infectious disease such as small-pox and scarlet fever, and the daily use of an

efficient disinfectant in the house is certainly sonducive to the general

DIRECTIONS.—One part to from 50 to 100 parts of water, well stirred or, say, one wineglassful of Krysyl to a quart of water will form a disinfectant fluid suitable for use in closets, lavatories, sinks, drains,

Physical appearance.—A dark-brown, thick fluid, forming in solution with water, a milky emulsion.

Chemical composition.—Per cent: Phenols, 14·16; resins, fatty acids, &c., 15·22; water, 12·00; soda, 2·20; neutral oils, 56·42—100·00.

Results of bacteriological tests. - The weakest lethal dilution after $2\frac{1}{2}$ minutes' action was 1-100 (1 per cent.) in one experiment; 1-125 (0.8 per cent.) in two experiments; 1-150 (0.666 per cent.) in one experiment. The weakest lethal dilution after 30 minutes action was 1-175 (0.571 per cent.) in one experiment; 1-200 (0.5 per cent.) in one experiment; and 1-225 (0.444 per cent.) in one experiment. The following table shows the result of a test:-

TABLE VII. - Krysyl.

					Dilu	tions.				
1-50	1-75	1-100	1-125	1-150	1-175	1-200	1-225	1-250	1-275	1-300
 2.0	1.33	1 00	0.80	0.666	0·571	0.500	0.444	0.400	0.363	0.333
0	0	0	0	174	17					
	0	0	0	0	Θ	17				
		0	0	0	0	17	17			
١			0	0	0	18	174			
	١			0	0	18	18	17		
ļ	l	١		0	0	19	174	17	17	
	l	ł		0	0	0	174	174	17	
			ł	0	0	0	174	17½	17	17
				0	0	0	0	174	17	17
	2 0 0 	20 133 0 0 0	2/0 1/33 1/00 0 0 0 0 0 0 0 0	20 133 100 080 0 0 0 0 0 0 0 0 0 0	2.0 1.33 1.00 0.80 0.666 0 0 0 0 0 174 0 0 0 0 0 0 0 0	8 1 2 8 8 8 9 9 1 1 1 1 1 1 1 1	2.0 1.33 1.00 0.80 0.666 0.571 0.500 0 0 0 0.666 0.571 0.500 0 0 0 0.666 0.571 0.500 0 0 0 0.666 0.571 0.500 0 0 0 0.17 0 0 18 0 0 18 0 0 19 0 0 0 0 0 0	S. I. I. S.	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	S. I. S. I.

Carbolic acid control.

		Percentage dilutions.											
Minutes.	1.00	0.917	0.846	0.786	0.733	0.687	0-647	0-601					
21	0	164	16	154	154								
5	0	0	161	16	16			·					
25				0	0	0	18	16					
30				0	0	0	20	161					

20/8/09. Room temperature 67°F.; ... signifies not tested. The figures in the table show that growth has occurred and indicate how many hours elapsed between the inoculation of, and the appearance of growth in, the McConkey medium.

The coefficient is therefore—

$$\frac{1 \cdot 00}{\frac{0 \cdot 80}{2} + \frac{0 \cdot 687}{0 \cdot 444}} = \frac{1 \cdot 2 + 1 \cdot 5}{2} = 1 \cdot 3.$$

ZOTAL.

Labelled-"Burgoyne's miscible disinfecting fluid.

THE MOST POWERFUL MISCIBLE FLUID DISINFECTANT IN THE MARKET. For hospitals, ships, and all domestic purposes.

MISCIBLE IN WATER.

PLEASANT TO USE."

"Owing to the concentrated form of this fluid, it will be found cheaper to use than any other Disinfecting Fluid in the Market.

DIRECTIONS FOR USE.—The proportions we name below may be altered, according as the necessity may arise, to increase or decrease the strength of the Diluted Fluid.

of the infection. Wash the Floors and Woodwork with a one in one hundred solution, and sprinkle Passages and Corridors with a similar solution. Half fill a few saucers with Zotal and place them about the rooms. Infectious cases may be more completely isolated by hanging a blanket saturated with Zotal outside the door."

Physical characters.—A thick dark-brown fluid, making in solution with 1-100 distilled water a primrose-yellow emulsion

Chemical composition.—Per cent.: Phenols, 10.00; resins fatty acids, &c., 35 42; water, 21 60; soda, 2 49; neutral oils, 30 49—100 00.

Results of bacteriological tests.—The table shows some imperfect results in the 1-175 (0.571 per cent.) column; these, however, do not affect the coefficient.

TABLE VIII. - Zotal.

		Dilutions.														
Minutes.	1-100	1-125	1-150	1-175	1-200	1-225	1-250	1-275	1-300	1-325	1-350					
	1.00	0.800	0.666	0.571	0.500	0.444	0.400	0.363	0.333	0.307	0.286					
2½	0	16	154	15	15	15	15									
5		0	24	164	15	15	15	15								
72		0	0	20	17,	15	15	15		٠	•••					
10			0	0	20	154	15	15	15		١					
124			0	18	0	17	15	15	15							
15				17	0	16	154	15	15	15						
20			;	0	0	0	1 5	15	15	15						
` 2 5					0	0	161	154	15	15	15					
30					0	0	16	151	15	15	15					

Carbolic acid control.

Minutes.			Perc	entage	dilut	ions.		
Almutes.	1.10	1.00	0.917	0.846	0.786	0.733	0.687	0.647
2 <u>4</u>	0	174	16	154	154		i	-
5	0	0	18	17	154			
25				0	0	171	154	16
30 .				0	24	174	16	16

29/8/09. Room temperature 64° F.; ... signifies not tested. The figures in the table show that growth has occurred and indicate the number of hours that elapsed between the inoculation of, and the appearance of growth in, the McConkey medium.

The coefficient is therefore-

$$\frac{1 \cdot 10}{1 \cdot 00} + \frac{0 \cdot 846}{0 \cdot 444} = \frac{1 \cdot 1 + 1 \cdot 9}{2} = 1 \cdot 5.$$

COOK'S "COFECTANT" FLUID.

Labelled-" THE DESINFECTANT OF HIGH AND REGULAR GUARANTEED

OBEFICIENT.

(Rideal-Walker method against B. typhosus.)

A Powerful Germicide and Deodorant.

Non-toric and Absolutely Safe for General Use."

"FOR GENERAL DOMESTIC PURPOSES: 'Cofectant' being a highly concentrated fluid, will admit of being diluted to any degree in warm or order after."

cold water.

DIRECTIONS FOR IUSE.—For general purposes 1 tablespoonful to an ordinary bucket of water; for drains, sinks, cesspools, 2 tablespoonfuls."

Physical characters.-A thick, dark fluid, making in dilution (1-500) with water a brownish-white emulsion.

Chemical composition. —Per cent. : Phenols, 66.27; resins, fatty acids, &c., 24.66; water, 6.40; potash, 2.67; neutral oils. 0.00-100.00.

Results of bacteriological tests.—All these came out very close together. The weakest lethal dilution at 24 minutes was 1-600 (0·166 per cent.) in two experiments; and 1-700 (0.143 per cent.) in two experiments. The weakest lethal dilution at 30 minutes was 1-1200 (0.083 per cent.) in one experiment; and 1-1300 (0.077 per cent.) in three experiments. The following table shows the result of a test with chis disinfectant.

TABLE IX .- Cofectant.

						Dilui	ions.					
Minutes.	1-500	1-600	1-700	1-800	1-900	1-1000	1-1100	1-1200	1-1300	1-1400	1-1500	1-1600
	0.200	0.166	0 143	0·125	0·111	o. 100	0 0 91	0·083	o·077	0.071	0·066	0·062
2,	0	0	0	+	+	, +	+	+				
5		0	0	0	+	+	+	+	+			
7₺		0	0	0	0	+	+	+	+			
10			0	+	0	0	+	+	+	+		•••
124			0	0	0	0	0	+	+	+		•••
15				0	0	0	0	+	+	+	+	
20				0	0	0	0	0	+	+	+	
25					0	0	0	0	0	+	+	+
30		···	···		0	0	0	0	0	+	+	+

Carbolic acid control.

Minutes.	Percentage dilutions.										
Minutes.	1.37	1.22	1.10	1.00	0.917	0.846	0.786	0.733			
24	0	0	0	+	+						
5	0	0	0	+	+		•••				
25	,			0	0	+	+	+			
30				0	0	+	+	+			

18/9/09. Room temperature, 64°F.; + signifies growth; 0 signifies no growth; ... signifies not tested. Taking into consideration the whole "line of demarcation," it is obvious that the misplaced positive result in the 1-800 (0:125 per cent.) column is a contamination; it does not after the confident. affect the coefficient

The coefficient is therefore -

$$\frac{1 \cdot 10}{0 \cdot 143} + \frac{0 \cdot 917}{0 \cdot 077} = \frac{7 \cdot 7 + 11 \cdot 9}{2} = 9 \cdot 8.$$

JEYES' FLUIDS .- A. Cyllin (bulk sample). B. Cyllin (Medical). C. Joyes' Fluid I. (sold by Chemists). D. Jeyes' Fluid No. 2 (sold by Grocers).

(A) Cyllin.—A sample from a half-gallon tin was tested.

Labelled-"JEYES' SPECIAL FLUID CYLLIN DISINFECTANT. GUARANTEED RIDEAL-WALKER CO-EFFICIENT 17."

"CYLLIN is supplied in concentrated form, and, for general use must be diluted with water (see directions for use). Its germleidal value has been proved by exhaustive experiments on vigorous cultures of the plague organism to be 30 times that of Carbolic Acid (pure Phenol) and over 80 times that of Formalin (40 per cent. Formic Aldehyde). See Public Health, June, 1904.

Public Health, June, 1904.

All the strengths recommended in the directions for use of CYLLIN allow for the further dilution with inert matter which takes place when the disinfectant is applied. At a strength of 1-400 even the highly resistant organism of pus (staphylococcus p. aureus) has been found by an eminent bacteriologist to be destroyed in five minutes (see British Medical Journal, 10 January, 1903, and LANCET, 21 March, 1903). Professor Fraenkel, in comparing CYLLIN with three of the leading disinfectants on the Continent, reports "we are justified in saying that CYLLIN takes the most prominent place, owing to its bactericidal properties, amongst all the substances here tested, and in all probability amongst all substances of the organic serier"; and further valuable testinony as to the bactericidal value of CYLLIN is supplied by Dr. Sommerville, whose recent experiments on the typhoid organism (B. typhosus) prove CYLLIN to be seventeen times more efficient as a true disinfectant than pure Carbolic Acid.

CYLLIN does not contain Carbolic Acid or any of its homologues, and is

CYLLIN does not contain Carbolic Acid or any of its homologues, and is free from the poisonous and irritant action of these agents.

Cyllin should be tested bacteriologically. Chemical analysis is not reliable means of ascertaining its value.

In consequence of the presence of Lime in varying proportions in ordinary tap-water, clean, soft-water should, if procurable, be used for dilution.

Directions for use:

FOR GENERAL HYGIENIO PURPOSES. Cesspools, Sinks, Lavatories and Urinals mix with water 2 teaspoonfuls to 1 quart," &c., &c. "Spittoons 1 temspoonful to 1 pint."

" FOR INFECTIOUS DISEASES.

Utensils and Floors, spray for walfs, i teaspoonful to 1 quart. Bath for soiled sheets, I tablespoonful to I gallon," &c., &c.

Physical characters. —A dark thick fluid, making a whitish emulsion with water.

Chemical constitution.—Per cent.: Phenols, 40.41; resins and fatty acids, 31.23; water, 10.40; soda, 2.24; neutral oils, 15.72—100.00.

TABLE X. - ('yllin (Bulk Sample).

	Dilutions.												
Minutes.	1-500	1-600	1-700	1-800	1-900	1-1000	1-1100	1-1200	1-1300	1-1400	1-1500		
	0.200	0 166	0.143	0. 12 5	o."i11	0. 100	0.091	0.083	0 077	0.071	0·066		
24	0	0	17	17	16	16	16						
5	0	0	0	0	0	174	17						
7₺	١	0	0	0	0	17	19	174		٠			
10	1	0	0	0	0	0	0	19					
121			0	0	0	0	0	0	0				
15		ļ	0	0	: 0	0	0	0	0				
20				0	0	0	0	0	0				
25				. 0	0	0	0	0	0	17			
30				•••	0	0	0	0	0	0	25		

Carbolic acid control.

361	Percentage dilutions.										
Minutes.	1.10	1.00	0.917	0.846	0.786	0.733	0.687	0.647			
2½	0	17	16	16	15						
5	0	0	17	16	16						
25				0	0	16	16	15			
30	·			0	0	17	16	16			

30'8'09. Room temperature, 63° F.; ... signifies not tested. The figures in the table show that growth occurred, and also indicate the number of hours that elapsed between the inoculation of, and the appearance of growth in, the McConkey medium.

The coefficient therefore is-

$$\frac{1 \cdot 10}{0 \cdot \overline{166}} + \frac{0 \cdot 786}{0 \cdot \overline{071}} = \frac{6 \cdot 6}{2} + \frac{11 \cdot 1}{2} = 8 \cdot 8.$$

(B) Cyllin (Medical).

Labelled-"CYLLIN FOR MEDICAL AND SURGICAL USE (MEDICAL). RIDEAL-WALKER COEFFICIENT, 200.

For general medical and surgical use a strength of 1 in 200 is recommended (one teaspoonful to a pint of water).

When required for use in contact with a delicate mucous membrane-as a douche, &c. -1 in 400 is to be preferred."

Physical characters.—A dark-brown thick fluid, making in dilution with distilled water a whitish emulsion.

Chemical composition.—Per cent.: Phenols, 32.08; resins and fatty acids, $35 \cdot 11$; water, $6 \cdot 40$; potash, $1 \cdot 48$; neutral oils (by difference), $24 \cdot 93 - 100 \cdot 00$.

Results of bacteriological tests.—We made use of this disinfectant to a large extent in our preliminary experiments, taking it as an example of a typical coal-tar disinfectant. The results obtained in numerous experiments were very close. After 2½ minutes action the weakest lethal dilution was 1-300 (0·333 per cent.) in two experiments; 1-400 (0·250 per cent.) in two experiments; 1-500 (0·200 per cent.) in three experiments; and 1-600 (0·166 per cent.) in three experiments. At 30 minutes the weakest lethal dilution was 1-1100 (0.091 per cent.) in seven experiments; and 1-1000 (0.100 per cent.) in three experiments. These experiments were done under varying conditions of room temperature, age of growth, &c. In many cases phenol control experiments were not carried out as we wished in these cases simply to obtain the curve of the antiseptic itself. The following table shows the result of a typical experiment with this antiseptic.

TABLE XI. - Cyllin (Medical).

	Dilutions												
Minutes.	1-400	1-500	1-600	1-700	1-800	1-900	1-1000	1-1100	1-1200	1-1300	1-1400		
	0 250	0 200	0·166	0.143	% 0·125	0.111	0.100	0.091	0 033	0.077	0-0 7 1		
24	0	0	0	16	16	144	14						
5	0	0	0	0	0	18	14						
71		0	0	0	0	. 0	17	14		٠			
10		0	0	0	0	16	141	14		١			
124			0	0	0	0	16	14 5	14	14			
15			0	0	0	0	0	144	14	14			
20		i '		0	0	0	0	145	14	14	14		
2 5				0	0	0	. 0	14,	14	14	14		
30	! 	···· .		0	0	0	0	14	14	14	14		

Carbolic acid control.

Minutes		Percentage dilutions.												
Minutes.	1.10	1.00	0.917	0.846	0.786	0.733	0-687	0.647						
2½	0	0	18	144			l							
5	, 0	0	0	0										
2 5	•			•••	0	0	0	18						
30					0	0	0	16						

5/7/09. Room temperature, 67° F.; ... signifies not tested. The figures in the table show that growth occurred and indicate the number of hours that elapsed between the inoculation of, and the appearance of growth in, the McConkey medium.

The coefficient therefore is-

$$\frac{1 \cdot 00}{0 \cdot 166} + \frac{0 \cdot 687}{0 \cdot 100} = \frac{6 \cdot 0 + 6 \cdot 8}{2} = 6 \cdot 4.$$

(O) Jeyes' Fluid (Chemists-Black label).

Labelled-" JEYES' FLUID DISINFECTANT."

It does not poison, burn, or stain.

"JEYFS' FLUID is far more efficacious than Carbolic Acid and is Non-poisonous."

"Certified by highest Scientific Authorities to be 'a true Germicide, a true Disinfectant and a true Antiseptic.

NOTE.—To comply with the order in Council f July 31st, 1900, this preparation is labelled POISON. The compound is as manufactured for over 20 years and is absolutely safe and FREE FROM CARBOLIC ACID." " Directions for use:

For general hystenic purposes: Drains, Closets, Urinals, mix with water, 1 teaspoonful to ½ pint. Shops, factories, schools, 1 teaspoonful to 1 pint, &c., &c.

For injectious diseases: Utensils and floor, 1 teaspoonful to 1 pint,

(D) Jeyes' Fluid No. 2 (Grocers-Brown label).

This has the same label and directions as Jeyes' Fluid (Black label) except that it is printed in brown, and instead of the note with regard to the Poisons Act has printed on it: "This Disinfectant is guaranteed exempt from the conditions of the Poisons Act." The dilutions recommended are the same. It has exactly similar physical characters.

Chemical composition .- Jeyes' Fluid (Chemists-Black label). Per cent.: Phenols, 17.80; resin, fatty acids, &c., 20.19; sods, 1.60; water, 6.40; neutral oils, 54.01.
100.00. Jeyes' Fluid No. 2 (Grocers—Brown label). Per cent.: Phenols, 5·13; resin, fatty acids, &c., 23·21; soda, 1·38; water, 22·40; neutral oils, 47·88—100·00.

Physical characters.—Both fluids are dark brown, thick, syrups, which, with water, form whitish emulsions and resemble each other closely.

Results of bacteriological tests. - In the case of Jeyes' Fluid (Chemists) the weakest lethal dilutions, under varying conditions, were, after 2½ minutes 1-125 (0 800 per cent.) in two experiments; after 30 minutes 1-300 (0.333 per cent.) in one experiment. In the case of Jeyes' Fluid No. 2 (Grocers) the weakest lethal dilutions were after 24 minutes 1-50

per cent.) in two experiments; and after 30 minutes 1-100 (1 per cent.) in two experiments; 1-110 (0.909 per cent.) in one experiment; and 1-120 (0.833 per cent.) in one experiment. The following tables represent the tests carried out with these two disinfectants.

TABLE XII. - Jeyes' Fluid (Black label).

						Dilut	dons.					
Minutes.	1-76	1-100	1-125	1-150	1-175	1-200	1-225	1-250	1-275	1-300	1-325	1-350
Ä	1.33	1.00	0·800	0· 66 6	0·571	0·500	0-444	0· 40 0	0.363	0.333	0.307	0·286
24	0	0	0	151	15	144	144		·			
5	0	0	0	0	24	15	144					
7≱	0	0	0	0	17	24	15				ļ	
10		0	0	0	0	0	0	15	144			
121		0	0	0	0	0	0	17	15	15	,	
15			0	0	0	0	0	24	15	144	141	!
20			0	0	0	0	0	0	154	15	144	,
25				0	0	0	0	0	0	154	141	144
30				0	0	0	0	0	0	0	14½	144

Carbolic aci i control.

Minutes.		Percentage dilutions.											
minutes.	1.10	1.00	0-917	0.846	0.786	0.733	0.687	0.647					
24	0	164	15	144									
5	0	0	154	15									
25					0	154	154	15					
30		۸.,			0	23	154	15					

1/7/09. Room temperature, 63° F.; ... signifies not tested. The figures in the table show that growth has occurred and indicate the numbers of hours that elapsed between the inoculation of, and the appearance of growth in, the McConkey medium.

TABLE XIII. - Jeyes' Fluid No. 2 (Brown label).

	Dilutions.												
Minutes.	1-40	1-50	8-1	1-70	1-80	1-90	1-100	1-110	1-120	1-130	1-140		
	½ 5	2.0	1.66	1.42	1 25	1.11	1.00	0 909	0.833	% 0·768	0.714		
24	0	0	16₫	14	14	14			·				
5	0	0	0	23	164	14							
71	0	0	0	0	23	154	15						
10		0	0	0	0	23	15	14					
124			0	0	0	0	23	15	14				
15				0	0	0	23	15≱	15	14			
20					0	0	0	23	23	15	14		
25					0	0	0	23	0	154	144		
30	•••	•••			0	0	0	0	0	23	144		

Carbolic acid control.

350		Percentage dilutions.										
Minutes.	1-10	1.00	0.917	0.846	0.786	0.733	0.687	0-647				
24	0	154	15	144								
5	0	0	154	15								
25					0	154	154	15				
30)				0	23	15↓	15				
	1	1		{								

1/8/09. Room temperature, $63^{\rm o}$ F.; ... signifies not tested. The figures in the table show that growth has occurred and indicate the number of hours that elapsed between the inoculation of, and the appearance of growth in, the McConkey tubes.

The Jeyes' fluids were tested against each other with an intervening phenol control:-

$$\begin{array}{l} \text{Jeyes' Fluid (Chemists)} \\ -\text{Black label) car-} \\ \text{bolic acid coefficient} \end{array} \} = \frac{ \frac{1 \cdot 10}{1 \cdot 00} + \frac{0 \cdot 786}{5 \cdot 333} }{2} = \frac{1 \cdot 1 + 2 \cdot 3}{2} = 1 \cdot 7$$

LAWES' FLUID.

Labelled-"THE TRUE DISINFECTANT. Used by H.M. Government. THE PERFECTION OF PURIFIERS."

"Directions for use: Mix 1 large teaspoonful of Fluid with 1 pint of water or quarter pint of Fluid with 3 gallons of water and use solution as follows. For household Cleansing purposes, flushing sinks, w.c.'s, drains, &c. For spraying or sprinkling about the rooms to purify the air."

"FOR DISINFECTING NIGHT STOOLS AND CESSPOOLS mix double strength."

Physical characters. - A dark brown fluid, forming with distilled water a greenish-grey opalescent liquid.

Chemical composition.—Per cent.: Phenols, $28\cdot 20$; resins and fatty acids, $25\cdot 73$; sods, $2\cdot 60$; water, $13\cdot 60$; neutral oils, $29\cdot 87-100\cdot 00$.

Results of bacteriological tests.—The weakest lethal dilution after 2½ minutes was 1-140 (0.714 per cent.) in one experiment; and 1-225 (0.444 per cent.) in two experiments. The weakest lethal dilution after 30 minutes was 1-280 (0.357 per cent.) in one experiment; and 1-350 (0.286 per cent.) in two experiments.

TABLE XIV .- Lawes' Fluid.

Minutes.	1-140	1-160	1-180	1-200	1-220	1-240	1-260	1-280	1-300	1-320	1-340	1-360
M	0.714	0.625	0 555	0 · 500	0 · 454	0.416	0·384	7. 0·357	0 333	0.312	0 294	0 277
21	0	24	18	16	134	13	13	124				
5	0	0	0	18	17	134	13վ	13				
74	0	0	0	0	19	154	16	134			•••	
10		0	0	0	0	18	15₄	14	134			
124			0	0	0	19	16	154	134			
15				0	0	19	19	15₫	15₺	134		
20	l				0	0	0	18	144	134		
25	l					0	0	0	17	144	131	13
3 0		¦	•••				0	0	17	144	134	13₺

Carbolic acid control.

	Percentage dilutions.									
Minutes.	1.10	1.00	0.917	0.846	0.786	0.733	0.687	0-647		
21	0	0	16	16						
5	, 0	0	0	174		ļ				
2 5				···	0	0	18₺	18 <u>‡</u>		
30	1				0	0	0	18∄		

30/6/09. Room temperature, 63° F.; ... signifies not tested. The figures in the table show that growth has occurred and indicate how many hours elapsed between the inoculation of, and the appearance of growth in, the McConkey's medium. This chart is an excellent example of the confirmation obtained of the correctness of the "line of demarcation" by these figures, showing how long a time elapsed before growth was noticed. Note how regularly the figures increase in the columns from right to left and from above downwards.

The coefficient of this disinfectant is, therefore—

$$\frac{\frac{1 \cdot 00}{0.714} + \frac{0.687}{0.357}}{2} = \frac{1.4 + 1.9}{2} = 1.65.$$

A previous test gave a coefficient of 2.1 (estimated).

McDougall's M.O.H. Fluid.

Labelled—"McDougall's M.O.H. disinfecting fluid (soluble in water in all proportions): Guaranteed carbolic coefficient 17 when tested against B. typhosus by the Rideal-Walker method.

This fluid is the most powerful germicide and bactericide known and has a guaranteed minimum carbolic coefficient of 17 when tested by the Rideal-Walker method against active typhoid germs. It is therefore from 17 to 40 times as powerful as pure carbolic acid according to the disease organisms against which it is used and is invaluable for destroying germs of All infective diseases.

Specially recommended for hospitals, sanitary authorities, public institutions, municipalities, sick-rooms, &c.

This liquid is non-corrosive, guaranteed free from mercury, and will not injure clothes, blankets, sheets, &c.

Directions for use: The following proportions are suggested as being suitable for the various purposes indicated, but the fluid may be used either weaker or stronger, according to circumstances.

To mix: Simply pour cold water into the Fluid and stir well. A strong mitky solution will be obtained. Don't use boiling water.

For general disinfecting purposes, sprinkling or spraying walls and seors of schools, disinfecting clothes, utensils, &c., 1 part to 400 or 500 parts of water or I teaspoonful to 3 or 4 pints water.

For flushing drains, sewers, urinals, and all places where the solution will at once become further diluted-I part to 50 or 100 of water, or 4 teaspoonfuls to from I pint to 2 pints water.

The most powerful Germicipe known. Although such a powerful Germicide and Bactericide, this fluid has little or no effect on the hands in its diluted form, and has a relative toxicity coefficient of 13, that its 70 SAY, a solution of M.O.H. fluid doing the same disinfecting work would be 13 times less poisonous than carbolic acid."

Physical characters.—A dark brown fluid. making a pinkish-This fluid is the most powerful germicide and bactericide known and

Physical characters.—A dark brown fluid, making a pinkishwhite emulsion with distilled water.

Chemical constitution.—Per cent.: Phenols, 47.13; resins and fatty acids, 33.54; potash, 2.10; water, 5.6; neutral oils, 11 · 63-100 · 00.

Results of bacteriological tests.—The weakest lethal dilution after $2\frac{1}{2}$ minutes' action was 1-700 (0 143 per cent.) in two experiments; and 1-600 (0.166 per cent.) in another experiment. The weakest lethal dilution after 30 minutes action was 1-1200 (0.083 per cent.) in one experiment; and 1-1300 The following (0.077 per cent.) in another experiment. table shows the result of a test :-

TABLE XV .- McDougall's M. O. H. Fluid.

		Dilutions.												
Minutes.	1-500	1-600	1-700	1-800	1-900	1-1000	1-1100	1-1200	1-1300	1-1400	1-1500			
	0·200	0. 166	0. 143	0· 12 5	0 111	0·100	0· 0 91	0.083	0.077	0.071	0.066			
21/2	0	0	0	24	17	15	14	,	•••					
5		0	, 0	0	0	0	30	16						
71			0	0	0	0	0	24	16	1				
10	١			0	0	0	0	0	172	16				
124					0	. 0	0	0	24	15	15			
15						0	0	0	17	16	15			
20	ļ					l	0	0	17	15	15			
25	١					1	0	0	16	15	15			
30							0	0	17	18	14			

Carbolic acid control.

351		Percentage dilutions.									
Minutes.	1.10	1.00	0.917	0.846	0.786	0.733	0.687	0.647			
21	0	0	17	16							
5	0	0	0	24							
25					0	0	18	15			
30					0		19	17			

Room temperature, 63° F.; ... signifies not tested. The figures in the table show that growth has occurred and also indicate the number of hours that elapsed between the inoculation of, and the appearance of growth in, the McConkey's medium.

The coefficient is therefore-

$$\frac{1.00}{0.143} + \frac{0.733}{0.083} = \frac{7.0 + 8.8}{2} = 7.9$$

IZAL.

Labelled—"Non-poisonous.

N.B.—For internal use a special 'Medical Izal' is supplied, with

directions, dose, &c.
An antiseptic of greater power than pure carbolic acid:
Officially adopted by His Majesty's Government.
Shake the bottle.

Shake the outle.

DIRECTIONS FOR USE: For disinfecting discharges and all contagious or infected matter:—Dilute one tablespoonful of Izal with ten pints of water; mix thoroughly with material to be disinfected.

Linen or clothes should be immersed in a mixture of Izal of above

strength.
In cold weather, if congealed, warm the bottle and SHAKE WELL

BEFORE USING."
"Mixes equally well in salt, brackish, and fresh water," &c., &c.

Physical characters.—A thick whitish emulsion; when diluted it forms a milky fluid.

Chemical composition. —Per cent.: Phenols, 41.35; water, $47 \cdot 14$; soda, $0 \cdot 10$; non-resinous emulsifiers (gelatin), $11 \cdot 41$; neutral oils, traces— $100 \cdot 00$.

Results of bacteriological tests.—The tests on izal presented difficulties which were not met with in testing other disinfectants; the results obtained were apparently more liable to be influenced by such factors as the temperature of the room and the time elapsing between the preparation of the dilutions and the carrying out of the experiment. For that reason it was necessary to test this disinfectant many times. During these tests a different sample was sent to us, which appeared to be stronger, and in tests of these two samples we found that the weakest lethal dilution after $2\frac{1}{2}$ minutes' action was: 1-500 (0.2 per cent.) in two experiments; 1-550 (0.182 per cent.) in one experiment; 1-600 (0.166 per cent.) in three experiments; 1-700 (0.143 per cent.) in four experiments; and 1.900 (0.111 per cent.) in one experiment. The weakest lethal dilutions after 30 minutes' action was: 1-700 (0.143 per cent.) in one experiment; 1-800 (0.125 per cent.) in two experiments; 1-1000 (0.100 per cent.) in three experiments; 1-1100 (0.091 per cent.) in three experiments; and 1-1200 (0.083 per cent.) in two experiments. The coefficients found in certain of these experiments were 5.8, 6.5, 6.7, and 8.4, the last one being found by using the dilutions immediately after they were made up; in the case of the others there might be an interval of half to one hour between the preparation of the dilutions and the beginning of the test. This marked variability was not met with in connexion with the testing of any other disinfectant. The following is a good average result:

TABLE XVI.-Izal.

	Dilutions.													
Minutes.	1-700	1-800	1-900	1–1000	1-1100	1-1200	1-1300	1-1400	1-1500	1-1600				
Ä	0.143	0.125	0.111	0.100	0.091	0 083	0.077	0.071	0.066	0 062				
21	0	+	+	+	+	+	+	+						
5	0	•0	0	+	+	+	+	+						
7₺		0	0	+	+	+	+	+	+					
10		0	0	0	+	+	+	+	+					
124			0	0	+	+	+	+	+	+				
15			0	0	+	+	+	+	+	+				
20				0	+	+	+	+	+	+				
25					+	+	+	+	+	+				
30					+	+	+	+	+	+				

Carbolic acid control.

Minutes.		Percentage dilutions.									
	1.22	1.10	1.00	0.917	0.846	0.786	0.733	0-687			
2½	0	0	0	+							
5	0	0	0	0		 .					
25		0	0	0	0	0	+	+			
30		0	0	0	0	0	+	+			
	ı	1	i	1	1	1	1	l			

22/8/09. Room temperature, 64° In no growth; ... signifies not tested.

The coefficient is therefore— Room temperature, 64° F.; + signifies growth; 0 signifies

e coefficient is therefore—
$$\frac{1 \cdot 00}{0 \cdot 143} + \frac{0 \cdot 786}{0 \cdot 100} = \frac{7 \cdot 0 + 7 \cdot 8}{2} = 74$$

PEARSON'S ANTISEPTIC.

Physical characters. - A thick brown fluid, making with

water, in a dilution of 1—500, a dirty-white emulsion.

Chemical composition.—Per cent.: Phenols, 20.70; resins, fatty acids, &c., 17.35; soda, 3.87; water, 8.00; neutral oils, 50·08—100·00.

Results of bacteriological test. - The following table shows the result of a test:

TABLE XVII. — Pearson's Antiseptic.

		Dilutions.												
Minutes.	1-100	1-150	1-200	1-250	1-300	1-350	1-400	1-450	1-500	1-550	1-600			
	1.00	0·666	0.500	0 400	0.333	0·286	% 0 250	0·222	0.200	0·182	0 166			
2بے	0	0	0	+	+	+	+	Ī			-			
5		0	0	0	0	+ '	' + '	. ••• ;	· · · ·					
71		0	0	0	0	+	+	+	!	'				
10			0	0	0	0	0	+		/				
124			0	0	0	0	0	+	+	• • • •				
15				0	0	0	0	+	+ ,	+				
20				0	0	0	0	+	+	+				
25					0	0	0	+ 1	+	+	+			
30			ا ا	}	0	0	0	0 '	+ !	+	+			

Carbolic acid control.

		Percentage dilutions.									
Minutes.	0.917	0.846	0.786	0.733	0.687	0.647	0.601	0.579			
24	0	+	+	+	+		·				
5	0	0	0	0	+		١				
25				0	0	0	0	+			
30				0	0	0	. 0	. +			
			:		ı		İ	į.			

19/8/09. Room temperature, 66° F.; + signifies growth; 0 signifies no growth; ... signifies not tested.

The coefficient is therefore-

coefficient is therefore—
$$\frac{0.917}{0.500} + \frac{0.601}{0.222} = \frac{1.8 + 2.7}{2} = 2.2.$$

KEROL.

Labelled—"The Perfect Non-Poisonous disinfectant.
This preparation is guaranteed to be from 10 to 35 times more active than carbolic acid according to the organism selected.
Kerol is strongly recommended for the disinfection of the organisms of Tuberculosis (Consumption), Typhoid, Diphtheria, Plague, and other infections diseases. or Tuberculosis (Consumption), Typnoid, Diphtheria, Plague, at infectious diseases.

Non-poisonous, Non-corrosive, Free from Carbolic acid.

Absolutely unsurpassed in germicidal efficiency.

Directions for Use.

For infectious diseases.

Night commodes... 1 teaspoonful to 1 pint." "Soiled linen 1 ,,
Spray for walls 1 ,, to 1 gall. to 1 quart. Floors and utensils 1 to 1 ,,

FOR GENERAL SANITARY PURPOSES.

Lavatories, urinals, sinks, &c. ... 1 teaspoonful to 1 pint. Schools, factories, shops, offices, &c. 1 tablespoonful to 1 gall."

Physical characters .- A thick brown fluid, making, in dilution with distilled water, a whitish emulsion.

Chemical composition.—Per cent: Phenols, 40.56; resins, fatty acids, &c., 19.14; soda, 1.41; water, 2.40; neutral oils, 36.49—100.00.

Results of bacteriological tests.—The weakest lethal dilution after 2½ minutes' action was 1-500 (0.200 per cent.) in five experiments; and 1-800 (0.125 per cent.) in one experiment. The weakest lethal dilution after 30 minutes' action was 1-1100 (0.091 per cent.) in one experiment; 1-1200 (0.083 per cent.) in one experiment; and 1-1300 (0.077 per cent.) in three experiments. Coefficients estimated from these figures came out exceedingly closely. The following table shows the result of a test:

TABLE XVIII. - Kerol.

						Dilut	ions.					
Minutes.	1-400	1-500	1-600	1-700	1-800	1-500	1-1000	1-1100	1-1200	1-1300	1-1400	1-1500
	0.250	0.200	0.166	0.143	0 125	o îî1	0. 160	0 0÷1	o.083	0. 0 77	0.071	0.066
2}	0	0	18	175	17	17	17	17				
5		. 0	0	19	20	175	17	17	17	• •••		٠
7.		0	0	0	0	0	171	17	17		١	
7½ 10		0	0	0 0	0	0 0	17½ 0	17 17	17 17	 17	l !	
_		0 		-	-	-	-			 17 17	 	
10		0 	0	0	0	0	0	17	17			
10 12↓		0	0	0	0	0	0	17 17 ½	17 17	17		
10 12½ 15		0	0	0 0	0 0	0 0	0 0 18	17 17½ 18	17 17 17	17 17 17	 17	

361	Percentage dilutions.									
Minutes.	1.22	1.10	1. 0	0-917	0.846	0.786	0.733	0.687		
2½	0	0	175	17	17					
5	0	0	0	17	17		•••			
25	l			0	18 չ	17₺	17	17		
30				0	20	172	17	17		

4/10 09. Room temperature, 64° F.; 0 signifies no growth; ... signifies not tested. The figures in the table show that growth occurred and not use a moon temperature, 64° F.; 0 signifies no growth; ... signifies not tested. The figures in the table show that growth occurred and indicate the number of hours that elapsed between the inoculation into, and the appearance of growth in, the tubes of the McConkey's medium.

The coefficient in this case is, therefore-

$$\frac{1 \cdot 10}{\frac{0 \cdot 20}{2} + \frac{0 \cdot 917}{0 \cdot 091}}{2} = \frac{5 \cdot 5}{2} + \frac{10 \cdot 0}{2} = 7 \cdot 7.$$

THE SANITAS PREPARATIONS. (A) Sanitas Okol. (B) Sanitas-Bactox. (C) Sanitas Disinfecting Fluid.

(A) Sanitas · Okol.

Labelled—"Sanitas-Orol disinfectant. Shake well and only use freshly made and thoroughly mixed dilutions.
Germicidal Coefficient 20-22 according to the Rideal-Walker method of standardisation. Sanitas-Orol is not intended for internal administration, but it is not poisonous when diluted in accordance with the printed instructions.

printed instructions.

Directions for use: For general Disinfecting Purposes and in cases of Scartet Fever, Diphtheria, Small-Pox, Typhoid, and all infectious diseases mix 1 part with 500 or 1000 parts of water and apply by spray (preferably): add a teaspoonful to a gallon of water for washing the hands, face, &c.; and for washing floors, clothes, &c., add a tablespoonful to every gallon of water required, &c., &c.

For use IN WATER-CLOSETS; pour two or three drops into the pan every time the closet is used."

Physical characters. - A thick coffee-coloured emulsion. When diluted (1-500) with distilled water it forms a muddybrown emulsion on which there is a slight oily scum and in which, after standing an hour or two, a sediment is noticed.

With hard water a precipitate forms and falls to the bottom.

Chemical composition. Per cent.: Phenols, 48.50; non-resinous emulsifier, 5 90; soda, 0.20; water, 38.5; neutral oils, 6.90 -100.00.

Results of bacteriological tests.—The weakest lethal dilution after 2½ minutes' action was 1-600 (0.166 per cent.) in one experiment; and 1-700 (0.143 per cent.) in another experiment. The weakest lethal dilution after 30 minutes' action was 1-1400 (0.071 per cent.) in one experiment; and

1-1500 (0.066 per cent.) in another experiment. The following table shows a test carried out with this disinfectant:-

TABLE XIX.—Sanitas-Okol.

	Dilutions.													
Minutes.	1-700	1-800	1-900	1–1000	1-1100	1-1200	1-1300	1-1400	1–1500	1-1600				
Min	0.143	0.125	0.111	0.100	0.091	0.083	0.077	0.071	0.066	0 %2				
2⅓	0	+	+	+	+		i							
5	0	0	0	+	+	+			ļ					
71	0	0	0	0	+	+	+							
10		0	0	0	+	+	+	+	٠					
12]			0	0	0	0	+	+						
15				0	0	0	+	+	+	ļ				
20					0	0	0	+	+	+				
25						0	0	+	+	+				
30	i			l			0	+	+	+				

Carbolic acid control.

		Percentage dilutions.									
Minutes.	1.10	1.00	0.917	0.846	0.786	0.733	0.687	0.647			
	0	+	+	+							
5	0	0	0	+							
25					0	+	+	+			
30					0	+	+	+			

29/6/09. Room temperature, 63° F.; + signifies growth; 0 signifies no growth; ... signifies not tested.

The coefficient is, therefore-

$$\frac{\left(\frac{1 \cdot 10}{0 \cdot 143} + \frac{0 \cdot 786}{0 \cdot 077}\right)}{2} = \frac{7 \cdot 7 + 10 \cdot 2}{2} = 8 \cdot 9.$$

(B) Sanitas-Baotex.

(B) Sanitas-Baotex.

Labelled—"The new homogeneous germicide. Guaranteed coefficient from 20 to 21 as determined by the standardised B. typhosus test. 1/- bottle makes 50 gallons efficient disinfectant. 'Sanitas-Baotox' forms a milky emulsion when mixed with water and is condiently recommended for destroying the germs of all infectious diseases; also can be had in drums and casks, also in the form of Powder, Sawdust, Soap.' &c.

"Directions for use: For infectious diseases: Night commodes and spittoons—mix with water 1 teaspoonful to 1 pint. Utensils and floors, spray for walls, &c.—mix 1 teaspoonful to 1 quart," &c.

"For general use: Street watering—mix with water 1 to 500 or 1000 parts; Lavatories, Drains, Cesspools, Sinks, Urinals—1 teaspoonful to 1 pint, &c., &c."

Physical characters. - A dark-brown thick fluid, making in dilution (1 to 500) a whitish emulsion.

Chemical composition. - Per cent. : Phenols, 39.70; resins, fatty acids, &c., 16.70; potash, 1.88; water, 6.00; neutral oils, 35.72—100.00.

TABLE XX.—Sanitas-Bactox.

						Dilut	ions.					
Minutes.	1-500	1-600	1-700	1-800	1-900	1-1000	1-1100	1-1200	1-1300	1-1400	1-1500	1-1600
	0.200	0· 16 6	0·143	0.125	0·111	o·100	0.091	0.083	o. 077	0· 67 1	o.066	0· 062
24	0	171	17	16	16	154	151	15;				
2 <u>1</u> 5 7 <u>1</u>		0	0	19	16	16	16	154	154			
7,		0	0	0	19.	174	16	16	16		·	·
10			0	0	20	20	16,	164	16	16		
121		•••	0	0	0	0	19	174	16	16		!
15				0	0	0	0	19	16 <u>1</u>	16	15₫	
20				0	0	0	19	0	19	19	16	
25					0	0	0	0	0	22	16	16
30				•••	0	0	0	0	0	0	16	16

_				 =
	Carbolia	aid aan	trol	

	Percentage dilutions.												
Minutes.	1.22	1.10	1.00	0.917	0-846	0.786	0-733	0.687					
24	0	17	16	16	16								
5	0	0	17	16	16								
25				20	16	16	16	16					
30				0	16	16	16	16					

15/9/09. Room temperature, 64° F.; ... signifies not tested. The figures in the table, while indicating that growth has occurred, show how many hours elapsed between the inoculation of, and the appearance of growth in, the McConkey's medium.

The coefficient is, therefore-

coefficient is, therefore—
$$\frac{1 \cdot 22}{0 \cdot 200} + \frac{0 \cdot 917}{0 \cdot 071} = \frac{6 \cdot 1 + 12 \cdot 9}{2} = 9 \cdot 5.$$

(C) Sanitas Disinfeoting Fluid.

(C) Sanitas Disinfecting Fluid.

Labelled—"Sanitas Disinfecting Fluid.

Labelled—"Sanitas Disinfecting Fluid. The Standard disinfectant for Sickness and Household use.

This ideal preparation is colourless, fragrant, non-poisonous, and does not stain linen. Being absolutely non-poisonous, it is the only disinfectant which may with safety be administered internally. Its active principles are those which are naturally generated in Pine and Bucalyptus Forests and include Peroxide of Hydrogen, Thymol, and Soluble Camphor. Sanitas Fluid is not merely an effective Germicide, but it is also an oxidising agent, and consequently acts as an air purifier owing to the nascent oxygen which it gives off.

For general use in the house and sick Rooms: Mix with four parts of water, sprinkle about the uncarpeted floors, and spray into the atmosphere, &c., &c.

For use in water-closets: Invert the cork and pour a little of the Fluid into the pan every time the closets are used."

Physical characters.—A clear greenish fluid: in dilution

Physical characters. - A clear greenish fluid; in dilution with distilled water no change is observed.

Chemical composition.—200 c.c. oxygen in 100 c.c.; 2.8

thymol, camphor, &c.; 0.18 soda.

Results of bacteriological tests.—The strongest non-lethal dilution after acting $2\frac{1}{2}$ minutes was 1-2 (50 per cent.) in one experiment; and 1-4 (25 per cent.) in another experiment. The strongest non-lethal dilution after acting 30 minutes was 1-5 (20 per cent.) in one experiment; and 1-8 (12.5 per cent.) in another experiment. The following table shows the result of a test :-

TABLE XXI.—Sanitas Fluid.

	Dilutions.														
Minutes.	1-1	1-2	1-3	1-4	1-5	1-6	1-7	1–8	1-9	1-10					
Mir	% 100	%	33.3	½ 5	½	16.6	14.3	12.5	17.1	扬					
21	0	26	19	16											
5	0	. 0	19	18											
7,	0	0	20	17	15										
10	0	0	26	18	17	15									
121	0	0	0	18	17	15	15		1						
15	l	0	0	19	17	15	17	15							
20			0	19	18	16	16	15	15						
25		l		23	19	17	16	15	15	15					
30					19	17	14	14	14	16					

Carbolic acid control.

Percentage dilutions.												
1.10	1.00	0.917	0.846	0.786	0-733	0-687	0-647					
0	0	16	16									
0	0	0	174									
1	١			0	0	184	184					
				0	0	0	184					
	0 0	0 0 0 0	1·10 1·00 0·917 0 0 16 0 0 0 	0 0 16 16 0 0 0 17½ 	1·10 1·00 0·917 0·846 0·786	1·10 1·00 0·917 0·846 0·786 0·733	1·10 1·00 0·917 0·846 0·786 0·733 0·687					

30/6/09. Room temperature, 63° F.; ... signifies not tested. The figure in the table indicate that growth has occurred, and show the number of hours that elapsed between the inoculation of, and the appearance of growth in, the McConkey's medium.

This table of results is not a good one, as there are no negative tubes in the 30-minute series. However, an approximate result (which is all we thought necessary in this case) can be obtained by estimating the coefficient from the weakest non-lethal dilution thus :-

e weakest non-lethal dilution thus:
$$\frac{0.917}{50} + \frac{0.647}{20} = \frac{0.018 + 0.032}{2} = 0.025$$

Labelled—"ANTISEPTIC AND DISINFECTANT.
Water soluble in any proportion.
The constituency and pure quality of this preparation is warranted by permanent control and endorsement of the following members of Universities and Veterinary Colleges: Professor Dr. Schotellius, Freiburg; Professor Dr. Engler, Karlsruhe; Professor Arnold,

Hanover.

According to the Pharmacy Act this preparation must be labelled 'Peison,' but if used as directed, no possible harm can result.

Directions for use: Lysol may be dissolved in either hot or cold water. To obtain perfectly clear solutions, employ soft or distilled water. Hard water w'll, on account of its lime, &c., turn the solution turbid, which, however, has no effect on its efficacy.

For the treatment of wounds in man and beast 1 per cent.

For general disinfecting and cleansing purposes 1-5 per cent."

Physical characters.—A brown thick fluid which forms a

Physical characters.—A brown thick fluid which forms a clear pale yellow solution in distilled water; in hard water the solution is turbid. The solutions lather on shaking.

Chemical composition.—Per cent.: Phenols, 50.96; fatty acids, 28.12; potash, 2.52; water, 18.40; neutral oils, 0.00—100.00.

Results of bacteriological tests.—The weakest lethal dilution after 2½ minutes' action was found to be 1-120 (0.833 per cent.) in one experiment; and 1-140 (0.714 per cent.) in two experiments. The weakest lethal dilution after 30 minutes' action was 1-240 (0.416 per cent.) in three experiments. The results obtained with this disinfectant were extremely regular and consistent. The following is an example of a test:—

TABLE XXII. - Lysol.

ě	l	Dilution.													
Minutes	1-100	1-120	1-140	1-160	1-180	1-200	1-220	1-240	1-260	1-280					
2	1.00	0.833	0.714	0·625	0.555	0.500	0.454	0.416	% 0·384	0.357					
21	0	0	0	+	+										
5		0	0	+	+	+	•••								
7₺			0	0	+	+	+	•	•••						
10			0	0	+	+	+								
124				0	0	+	+	+							
15				0	0	+	+	+	•						
20					0	0	+	+	+						
2 5					0	0	+	+	+	•••					
30			 .		•••	0	0	0	+	+					

Carbolic acid control.

Minutes.	Percentage dilutions.											
Minutes.	1-10	1.00	0.917	0.846	0.786	0.733	0.687	0.647				
24	0	+	+	+								
5	0	0	0	+	•••							
25					0	+	+	+				
30					0	+	+	+				

29/6/09. Boom temperature, 63° F.; + signifies growth; 0 signifies no growth; ... signifies not tested.

The coefficient is, therefore-

coefficient is, therefore—
$$\frac{1 \cdot 10}{0 \cdot 714} + \frac{0 \cdot 786}{0 \cdot 416} = \frac{1 \cdot 5 + 1 \cdot 9}{2} = 1 \cdot 7$$
ar coefficients obtained with this disinfermation.

Other coefficients obtained with this disinfectant were: June 18th, 1909—Coefficient = 1.5 and 1.7 (estimated) from an experiment performed in duplicate.

TRIKRESOL.

A purified coal-tar disinfectant often used for the preservation of sera, &c.

Physical characters.—A colourless oily fluid, soluble only to a small degree in distilled water.

· Chomical composition.—Phenols, 100 per cent.

Results of bacteriological tests.—The weakest lethal dilution after 2½ minutes' action was 1-200 (0.5 per cent.) in one experiment; and 1-250 (0.4 per cent.) in a second experiment. The weakest lethal dilution after 30 minutes' action was 1-350 (0.286 per cent.) in one experiment; and 1-400 (0.25 per cent.) in a second. The following gives the result of a test :-

TABLE XXIII .- Trikresol.

	Dilutions.													
Minutes.	1-200	1-250	1-300	1-350	1-400	1-450	1-500	1-550	1-600					
	0.50	0.40	0·333	0.286	0.250	0.222	0.200	0.182	0·166					
21	0	0	+	+	+	+								
5	0	0	0	+	+	+	•••							
7½	0	0	0	0	+	+	•••							
10		. 0	0	0	+	+	+							
124		0	0	0	+	+	+							
15			0	0	+	+	+	+						
20			0	0	0	+	+	+						
2 5			0	0	+	+	+	+	+					
30			0	0	0	+	+	+	+					

Carbolic acid control.

Minutes.	Percentage dilutions.											
minutes.	1.00	0-917	0.846	0.786	0.733	0.687	0.647	0.601				
24	0	+	+	+								
5	0	0	0	+								
25					0	0	0	+				
30					0	0	0	+				

22/8/09. Room temperature 62° F.; + signifies growth; 0 signifies no growth; ... signifies not tested.

The coefficient is, therefore-

$$\frac{1.00}{\frac{0.4}{2} + \frac{0.647}{0.250}} = \frac{2.5 + 2.5}{2} = 2.5.$$

GENERAL DISINFECTANTS.

Certain other chemical disinfectants were tested by the same method, but in view of the fact that the conditions of the test are so far removed from those of natural disinfection, the results are in no way comparable with those obtained in the experiments with coal-tar disinfectants, and are merely of technical interest. We have not thought it necessary, therefore, to reproduce the charts of results.

1. Perchloride of mercury.—This germicide showed a very high coefficient due to the fact that albumin was not present in the media in which disinfection took place. Moreover, the bacteria were not washed after the action of the disinfectant and, as other observers have shown, the slight combination occurring between the albumin of the bacterial cell and the perchloride of mercury was able to prevent growth. The coefficient worked out as follows:-

At
$$2\frac{1}{2}$$
 minutes = 2000 (circa).
,, 30 ,, = 6000 (circa).
Mean = 4000

2. Chloride of lime.—A particularly pure sample was obtained and tested. The coefficient was as follows:—

At
$$2\frac{1}{2}$$
 minutes = 45
,, 30 ,, = 93
Mean = 69

3. Formalia (formaldehyde 40 %).—This disinfectant differed from all others that we tested in so far that the time elapsing between the inoculation of the sub-culture tubes and the appearance of growth in them was much prolonged. This confirms the work of other observers which tends to show that formaldehyde may be regarded more in the light of an "antiseptic" than of a "disinfectant." The carbolic acid coefficient is low :-

PART IV .- SUMMARY OF BACTERIOLOGICAL EXPERIMENTS.

The disinfectants which we have tested may be classified as follows:-

TABLE XXIV.

LIST OF COEFFICIENTS (PURE PHENOL).

	· 	1	Coefficients.	
A. Coal-tar di	sinfectants forming emulsions with water :	At 2½ minutes.	At 30 minutes.	Mean
	COFECTANT	7.7	11.9	9.8
	SANITAS-BACTOX	6.1	12.9	9.5
	Sanitas-Okol	7.7	10.2	8.9
_	CYLLIN (from bulk)	6.6	11.1	8.8
1	McDougall's M.O.H. Fluid	7.0	8.8	7.9
	KEROL	5 · 5	10.0	7.7
	IZAL	7.0	7.8	7.4
	CYLLIN (Medical)	6.0	6.8	6.4
	PEARSON'S ANTISEPTIC FLUID	1.8	2.7	2.2
	JEYES' (Chemists')	1.1	2.3	1.7
2	LAWES FLUID	1.4	1.9	1.6
2	ZOTAL	1.1	1.9	1.5
	Krysyl	1.2	1.5	1.3
	JEYES' No. 2 (Grocers')	0.55	0.94	0.75
3. Coal-tar di	sinfectants forming clear solutions with water :-			
	CRUDE CARBOLIC ACID	4.0	4.4	4.2
	CALVERT'S No. 5 CARBOLIC	2.7	2.4	2.5
	Trikresol	2.5	2.5	2.5
	LYSOL	1.5	1.9	1.7
•	SANITAS DISINFECTING FLUID	0.018	0.032	0.025

For the purposes of classification we have divided the coaltar disinfectants into two groups—those forming an emulsion and those forming clear solutions when mixed with distilled The former class can clearly be divided into two quite distinct groups, one with high carbolic coefficients, the other with much lower coefficients. In the stronger group this coefficient is between 6.4 and 9.8, and in the weaker between 0.75 and 2.2.

We do not, of course, pretend to insist that the order in which we have arranged the disinfectants in these groups gives an exact indication of their relative germicidal value, even under the limited conditions of our test. Moreover, we have chemical evidence that there must be variations from time to time in the composition of different batches of certain brands of disinfectants, and therefore, naturally, of their germicidal activity. Far less, therefore, can we claim that such an order holds good under the varying and little understood conditions obtaining in practical disinfection.

Though every care has been taken to maintain all the con-

course, that whereas it is impossible to insist upon the correct arrangement of the individual members of the stronger group, those contained in the second or weaker group may probably be more justifiably arranged in our table in the relative order of their germicidal power.

It must be borne in mind that this order is in terms of an artificial set of conditions, but we believe that it may be regarded as giving a rough indication of the value of these disinfectants in destroying the germs of disease under the conditions of natural disinfection.

When we come to compare those disinfectants which form emulsions in dilution with those which form more or less clear fluids, we have to bear in mind that we are now confronted by a physico-chemical problem with which at present we are not prepared to deal. It will be seen that the coefficient figures of the latter group (Group B) lie about midway between those of the stronger and those of the weaker group of disinfectants which form an emulsion on dilution.

Though every care has been taken to maintain all the conditions as uniform as possible, it is clear that any slight variation of temperature, altered resistance of bacteria, or other interfering factors which cannot be eliminated from a biological experiment might be sufficient to alter the figure obtained for the numerator from the carbolic control, with the consequence that the resulting coefficient figure might be increased or diminished by a few units in the first place of decimals.

Owing, however, to the general correspondence of the results obtained in between 45 and 50 tests of carbolic acid, and the closeness of the coefficient figures arrived at when the same disinfectants have been tested several times (as has been the case with most of them), we are satisfied that there is a wide interval as regards the germicidal power between the disinfectants of the stronger group and those of the weaker.

We find, when we come to consider the disinfectants in the weaker group, that the proportionate differences between them are certainly much greater than is the case in the stronger group. Indeed, it may be stated, very generally of

Journal, London, 1906, vol. vi., p. 6. (17) Wynter Blyth: Analyst, 1906, vol. xxi., p. 150. (18) Martin and Chick: Journal of Hygiene, Cambridge, 1908, vol. vili., p. 654. (19) Fowler, C. E. P.: R.A.M.C. Journal, London, 1907, vol. ix., p. 55. (20) Firth, Lieutenant-Colonel R. H., and Macfadyen, Professor Allan: Report of the Disinfectant Standardisation Committee appointed by the Royal Sanirary Institute, Journal of the Royal Sanitary Institute, London, 1906, vol. xxvil., p. 17

[The pressure put upon our columns this week by the publication (with tables) of the bacteriological results compels us to reserve for next week a further article dealing with the deductions of both chemical and bacteriological experiment besides certain important practical considerations.]

SOME CONSIDERATIONS OF MEDICAL EDUCATION.

IV.1

The Royal Colleges and the Preliminary Scientific Education of the Student.—Compulsory Registration of the Medical Student.

THE feeling left on the minds of those interested in medical education by the important proceedings at the General Medical Council in reference to the position of the English Royal Colleges and the preliminary scientific studies must have been a mixed one. Every member of the Council seemed to be agreed that there was hardly time for the medical student to do what was expected of him in five years, yet the claim of the Colleges to cut this period, apparently all too short, down to four and a half years was made with much force and backed by sound arguments. The weak spot in those arguments was that although the official curriculum might—at any rate, in theory—be shortened by six months, the amount of time actually spent in the preliminary subjects became unlimited. Subject to a boy being able to scrape together enough general knowledge to pass at some time or another a preliminary examination in arts, he might, if he liked, commence the study of chemistry, physics, and biology at 14 or 15. The difference of opinion between the Council and the Colleges raised several questions, such as the following: (1) Whether instruction given to schoolboys for an indefinite period of time, and while they are still carrying on their ordinary study of the humanities. is as efficient as studies forming part of a definite scientifie curriculum entered upon when general education is complete; (2) whether the Council ought to allow any corporations to admit students to their professional examinations who have received such instruction, even though the character of the instruction appears in some instances to be better than would be obtainable at certain of the medical schools; and (3) whether, as the action of the corporations might lead to an actual shortening of the curriculum for some students, the possibilities of such shortening of the curriculum ought not to be obvizted by the compulsory registration of the medical student in such a way that, however adequate his preliminary scientific instruction, no course should count as part of the statutory time of five years unless commenced upon or after the day of registration.

At the same meeting of the Council Sir John Batty Tuke made the third of these questions the most important one by introducing a motion founded on a Bill which he was prepared to introduce into the House of Commons for compulsory registration of medical students. The discussion of this motion was practically a continuation of the previous debate, inasmuch as compulsory registration of the medical student would naturally bring all the schools and institutions at which any training was received under the immediate jurisdiction of the General Medical Council.

Sir John Batty Tuke was able to say that the Bill would receive the support of the Privy Council. He used in favour of it the very forcible argument that the registration fees of the medical student of £1 per head would amount in the. aggregate to the useful sum of £1700 per annum, possibly £2000, and as at that date the finances of the General Medical Council were in a disadvantageous position any scheme by which the risk of a small annual deficit could be transformed into the certainty of an annual balance perforce commended itself to the Council. John Batty Tuke also argued that registration of the student would enable the General Medical Council to ensure that a course of study had been carried out for five years from a certain date by all students upon a plan that commended itself to the central authority. It would guarantee a proper preliminary examination and give the General Medical Council due discretionary power with regard to all places at which preliminary medical studies were carried out. In fact, it would enable the General Medical Council to occupy the position which it sought when desiring to have jurisdiction over the institutions sanctioned by the different corporations. He admitted that the Royal Colleges would lose the right of nomination of schools at which the arts and preliminary scientific studies would be pursued. Sir Victor Horsley seconded Sir John Batty Tuke's motion, holding it right that the autonomous interests of licensing bodies should be relegated to a secondary place in comparison with the general interests, public and professional, in a properly standardised scheme of medical education for the country. Dr. Norman Moore, representing the Royal College of Physicians of London, opposed the motion in uncompromising terms attributing to the Council a growing desire for money and power, which was felt to be a rather picturesque way of describing a situation whose real meaning was that the Council desired to live up to its ideals as the central authority in medical education and at the same time to pay its financial way. The admitted needs of the Council being introduced to Dr. Norman Moore's notice he said that his own solution for that difficulty was the non-payment of the members of the General Medical Council, a line along which argument was not pursued. Sir Henry Morris opposed the motion on behalf of the Royal College of Surgeons of England in a more convincing manner. It was perfectly clear that he was speaking in defence of the great corporation which he represented on the Council, but he took his stand rather upon the point that Membership of the Royal College of Surgeons of England had for many years been the qualification sought and prized by the mass of the medical profession in England. so that a protection of the privileges of the College meant the protection of the interests of the medical profession upon whose education the College had spent, and successfully spent, such an infinity of time and trouble. He characterised the attitude of his College as one of "defence not defiance." Dr. E. H. Bennett, the representative of the University of Dublin (Trinity College), took the same line in opposing the motion, but many other speakers, whether representing universities or colleges, or speaking on the particular issue or more generally, were found in Sir John Batty Tuke's camp. The present President of the Council, Sir Donald MacAlister, then representing the University of Cambridge, supported Sir John Batty Tuke's motion in a speech in which he described the General Medical Council as the only existing "inter-university board in the kingdom," and he thought that constitutional power should be given to the Council to maintain a plan of students' registration. Sir William Turner, at that time President of the Council and the representative of the University of Edinburgh, regretted the tendency of the Colleges to flaunt their charters in the face of the Council. His own University, he said, had undertaken not to allow unregistered

 $^{^1}$ Nos. I., II., and III. were published in The Lancer of Oct. 23rd (p. 1232) and 30th (p. 1301), and Nov. 13th (p. 1459), 1909, respectively.

students to proceed to qualification, and his strong support of the motion had undoubtedly much to do with the fact that it found favour with the meeting by 22 votes against 6 dissentients.

The compulsory registration of the student was not, however, destined to take place, as most of our readers know. Representations having been made to the Privy Council in an adverse sense by the University of Oxford and by the English Royal Colleges the Privy Council suggested that the General Medical Council should refer the matter to those bodies for further consideration. Sir Victor Horsley, at the next session of the Council, protested against such a course being taken, as it placed the Council in a false position, and ignored the fact that the Council was in itself by its very constitution a conference of the licensing bodies. Sir John Moore then brought forward a motion that the Council should request their views upon the subject from all the licensing bodies and should inform the Privy Council that this had been done. To this motion Dr. J. Y. Mackay proposed the following amendment :-

(1) That the Lord President of the Privy Council be informed that in the opinion of the Medical Council it would not be expedient at the present stage to confer with the Royal Colleges on the subject of the resolution of May 30th, 1904.

(2) That before proceeding further in the matter a memorandum be prepared setting forth the grounds on which the Council is acting in reference to the resolution, and giving the specific proposals which the Council thinks should be embodied in the contemplated Bill.

The amendment being carried the chances of registration again looked rosy. As the Council had come very deliberately to the conclusion that registration of the medical students was a properly progressive move, and as registration would place increased powers in the hands of the Council, it was right that the medical profession should know exactly what were the conditions, for example, as to standardisation, duration, and locale of preliminary study which the Council would recommend. But Dr. Mackay's amendment, when put forward as a substantive motion, was defeated by the following amendment proposed by Sir Christopher Nixon:—

That a reply be sent to the Privy Council, stating that this Council now sees great difficulties from opposition by certain licensing bodies in asking the Lord President to introduce a Bill giving to the General Medical Council statutory power to establish and maintain registers of medical and dental students, and to impose a fee not exceeding £1 for registration therein. The General Medical Council will be prepared at the proper time to offer an alternative proposition which it hopes may be approved of by the Lord President.

The Council, it will be seen, thus definitely withdrew all intention of asking the Privy Council to introduce a Bill giving to the General Medical Council statutory powers of registration over students. In fact, the Council came to the conclusion that the compulsory registration of students was impossible. It would require an Act of Parliament, and as the acquisition of powers under such an Act would be strenuously opposed by the Royal Colleges no such legislation would ever find a place on the statute book. The last part of Sir Christopher Nixon's successful amendment contemplated an increased registration fee to qualified medical men, a tax which would not be received with any gratitude by the medical profession. This proposition to raise the registration fees of practitioners took the debate frankly over to the fiscal side. The original idea was to standardise the medical education of the country throughout the kingdom and incidentally to raise money. The proposal to tax medical practitioners more highly left the question of medical education out entirely. The question of the compulsory registration of the medical student, however, is practically at an end. It is true that the suggestion has since been made that medical students should pay a registration fee of 5s., but as such a fee would be voluntary and as the collection of it would cause a disproportionate amount of trouble the proposal came to nothing.

(To be continued.)

THE MOTOR EXHIBITION AT OLYMPIA.

BY C. T. W. HIRSCH, M.R.C.S. ENG., L.R.C.P. LOND.

II.

In addition to the exhibits described in THE LANCET of last week the following short digest of a few further perambulations at Olympia may prove of interest.

The Arrol-Johnston Co. have an attraction on Stand 51 in the car which was used in the Shackleton Expedition to the South Pole. Their 15 h.p. car makes its first public appearance at this show, and is in every way up to date—engine, flywheel, clutch, and gearbox all mounted as a single unit, accelerator pedal between clutch and brake pedals, high-tension magneto and coil and accumulator ignitions, gear-driven pump lubrication, with an easily detached oil filter. Four brakes are fitted, one inside of each wheel, those on the front wheel being made under the Allen-Liversidge patent.

The Austrian Daimler Motor Co., Limited, show on Stand 1 a 20-30 and a 15 h.p. petrol car, as well as one of their "Cedes" electric broughams. In the electric vehicle the motors are inside the rear wheels, thus eliminating a very considerable wastage of current, and being fixed solid within the wheels the motors take the place of the hubs and revolve round the central magnets, thus giving an increase of power for a comparatively low consumption of current. They are capable of travelling 20 miles an hour, and can do about 50 miles on one charge.

On the stand of Messrs. Crossley Brothers, No. 108, the Cowey Engineering Company show a pneumatic suspension which does away with the use of ordinary springs, substituting therefor a set of four cylinders filled with air at pressure and attached to the frame, while the piston rods are coupled to the axles. By an arrangement as the load increases extra air enters the cylinders, rolling when turning a corner being overcome by specially mounted transverse radius rods. If this invention answers solid tyres may again become fashionable and possible.

Enfield Autocars are on Stand 86. The new features of the 10-12 h.p. model are the adoption of thermo-syphon circulation and magneto ignition. One of these shown is fitted with a "racy" two-seated body, smartly finished in French grey. The 18-22 h.p. has now a channel underframe instead of the tubular pattern, and the back axle has an inspection door. Among other noticeable features are a new type of carburettor and improved foot-brake and steering connexions. In the Enfield "16" an entirely new model is introduced, which should certainly claim attention. It is a four-cylinder, with a bore of 86 mm. and a stroke of 108 mm., and has four speeds, gate-change, and magneto ignition.

The Lanchester Motor Co., Limited, are on Stand 72. Their cars in the early days can scarcely be said to have acquired a reputation for simplicity, though they were always known for quality. Those now shown, which include a 20 h.p. double landaulette and a phaeton of like power, prove that simplicity is undoubtedly now to be numbered among other Lanchester qualities. The starting handle, which was hitherto detachable, is now permanently attached to the front axle. Dual ignition is fitted. A feature which adds to comfort is a supplementary spring device built into the seat under the cushion.

The Talbot Stand, 52, like last year, is conspicuous for its display of handsome trophies -testimonies to the successes achieved by these cars at hill-climbs and other contests. From what I hear from happy owners they give satisfaction, and I trust shortly to be able to make a more intimate acquaintance with them, and thus to be in the position of writing after a personal test. The car which the company advocate for doctors is their 12 h.p., with four cylinders cast in pairs, 80 mm. bore by 120 mm. stroke, lubrication by pump, with a large sump in crank-case carrying sufficient oil for 250 miles. Two independent ignitions are fitted, and there are four speeds working in a gate, with the usual bevel The little points seem to have been thought of, live axle. and the shackle pins are all case-hardened and fitted with lubricators. The body has the now popular high side doors to the driver's seat and there is (what so many drivers desire) a clear dash.

The Thames Ironworks Shipbuilding and Engineering Co., Limited, show on Stand 77 four types of "Thames" cars The 8 h.p. single-cylinder victoria has variable friction transmission. The 12 h.p. two-cylinder coupé is of the unit construction type, and the rear axle is driven by propeller shaft worm-gear. This car is suitable for a doctor's use, as the driving seat can be completely protected by closing the very roomy body. A landaulette is mounted on a similar chassis and is of the usual type, capable of being completely opened, and a folding canopy is arranged over the driver's seat, and can be folded away, if not needed, in a receptacle on the dashboard.

The Riley Cycle Co., Limited, have on Stand 146 six specimens of their 9 h.p., 10 h.p., and 12–18 h.p. cars. Their speciality is a two-cylinder engine having its cylinders set at 90 degrees, which is claimed to give a perfect balance of moving parts. Their detachable wheels are also shown.

Messrs. Rolls-Royce show on Stand 57 three examples of

Messrs. Rolls-Royce show on Stand 57 three examples of their six-cylinder 40-50 h.p. cars. The double-limousine is most luxuriously appointed, and contains every accessory for comfort. An interesting display is a number of parts of the chassis in the rough and finished state.

On Stand 95 Messrs. Martini, Limited, are exhibiting a 10-12 h.p. chassis, a 10-12 h.p. two-seater complete with hood, screen, lamps, &c., and a 13-16 h.p. chassis. All are fitted with four-cylinder engines, with the valves arranged diagonally in the cylinder head, and operated by a single cam shaft driven by skew gearing from a vertical spindle in front.

Lancia Cars, Stand 18, are of 20 h.p. and are built on the most modern lines, with the gearbox in close proximity to the engine. Two of the bodies by Messrs. John Maythorn are bound to attract attention on account of their fine appearance.

At one time there were on the road probably more Humber cars than any other make, and one of their most popular types was described in The Lancer of April 11th, 1908. On Stand 48 this firm have their 1910 stud, which is confined to three models—an 8 h.p. two-cylinder and a 12 and 16 h.p. four-cylinder.

On Stand 41 the Gladiator Company show three 12-14 h.p. cars. This car has been improved only in detail, the general construction remaining the same as in the 1909 type. Specially designed valve tappets are employed to eliminate noise. On the larger models a new type of carburettor is fitted. On one chassis a fine single landaulette by Thorn is mounted.

The British Motorloc Syndicate, Limited, are on Stand 142. They are the pioneers of the "unit system," and show four of their 14-16 h.p. cars. The special points are parallel engine suspension, thus enabling easy access to the big ends, and all the wheels are fixed by hexagons.

Messrs. Berliet Motors, Limited, have on Stand 135 one 12 h.p. and two 15 h.p. cars. They have forced-feed lubrication, multiple disc clutch, and thermo-syphon cooling. One of the 15's has a light phaeton body by Messrs. Max Graddon, detachable wheels, and a light aluminium windscreen, while another has a landaulette body by Alford and Alder.

Messrs. Bedford Motors, Limited, claim that they have the cheapest four-cylinder car on the market. It is 15-18 h.p., with planetary gearing, dual ignition, and cardan shaft drive. The valves are mounted on top of the cylinder castings and are operated by long push-rods and rocking levers.

Personally, I do not consider that the mushroom valve is a cause of much trouble. Still, those who are in search of a car without these parts can find one in addition to those shown by the Daimler and Minerva companies. Valveless cars are shown by a company of that name on Stand 93. The engine has two vertical cylinders side by side, joining in a common combustion chamber at the top. In one cylinder there is a slot which admits the charge, in the other cylinder another slot through which the exploded charge escapes. The pistons operate two crank shafts which revolve in opposite directions, and are geared together, so that the pistons move up and down in unison. An ordinary automatic carburettor is fitted. When the pistons ascend they compress an explosive charge, which is ignited by a single sparking plug in the ordinary way, the pistons are driven down, the exhaust slot is uncovered, and the exploded gases are thus got rid of. At the time the pistons compress a charge, a vacuum is created in the crank-case, which is airtight, but has a guarded passage leading to the outside

air, and as a result of this vacuum air is drawn into the crank-case, where it is carburetted, and, as the slot becomes uncovered, is passed into the cylinder head, compressed, and exploded. Thus the cycle of operations is repeated, one charge being compressed and exploded while the next is prepared in the base chamber. The first charge is supplied by turning the handle in the ordinary way. Every time the engine fires, the two connecting rods, crank shafts, and flywheels are accelerated in opposite directions, and as the pistons are balanced by weights on the crank shafts there is freedom from vibration and smooth running. This engine provides for an impulse to both pistons at every revolution, thus ensuring great engine flexibility. A cross shaft driven by one of the crank shafts drives the magneto and oil and water pumps. From the second flywheel the power is transmitted by an ordinary leather cone clutch to a gearbox, and thus on to a live axle. This car was subjected to a 1000 miles' trial under the Royal Automobile Club's observation, which was completed with only one stop of one minute to lubricate one of the universal joints. It certainly appears to be well designed, original, and yet free from complications.

In patrolling the main and side arteries of the Show the visitor will be impressed with the number of cars with small engines, mostly four cylinder, but some, like the 20 h.p. Standard, 16 h.p. La Buire, 30 h.p. Napier, and 15 h.p. Delaunay-Belleville, with six cylinders. Many of the small fours are wonderfully cheap and for the price marvellously good. Still these bargains (and I admit that some of them are certainly bargains) are not good for all with a slender purse. It is not merely the purchase price but also the upkeep that must be taken into consideration. These cheap four cylinders are very tempting. In fact, a purchaser who merely wants a car for his practice is apt to reason that a good single cylinder will cost complete not far short of £180 or £200; then why not give another £50 and have a four-seater four cylinder with all the latest improvements? Certainly it is alluring, only the general practitioner with a small income should also remember that the running cost, repairs, and tyres of the small two-seater is about half, if as much, as those of the cheap four cylinder. Probably some of the manufacturers have also thought of these points, for another feature in the Show is the reappearance of the "One Lung Car." The Rover, De Dion, Jackson, and Sizaire-Naudin people have always built these cars, and they continue to do so, and among others the Swift and Austin have now entered this field. So those who, anyway to begin with, want a single cylinder will find a fair number to choose from. The general tendency is to cast the small four cylinders en bloc with the valves all on one side. High-tension magneto seems the prevailing form of ignition, and is deservedly so, as being more simple and more reliable than the low tension with its make-and-break mechanism and the tappets. The Silent Knight type of so-called valveless machine has rather put the ordinary poppet valve manufacturer on his mettle, and hence the improvement in valve tappets and cams, as well as in some instances, as on the Napier, the complete encasement of not only the cam shaft, but also the valve and tappet guides. Certainly these improvements make for silence. On a few cars the overhead valve tappets are fitted, but this is the exception.

Partly, I presume, as a result of the 4-inch race, and also because of the new tax on horse-power, which will probably be estimated by the Royal Automobile Club's rulethat is, by the bore, irrespective of the stroke-long-stroke engines are the rule, as with the same bore a longer stroke gives a greater horse-power. But it must be remembered that this increase of stroke means longer and heavier crank shafts and connecting-roos, increase of thrust of the pistons on the sides of the cylinder, as well as increase in weight of clutch shaft and transmission gear. On the smaller engines thermosyphon cooling, with pipes of very large proportion, is the fashion, and this innovation certainly seems to have the merit of success. The lubricator boxes on the dash-board are vanishing, and in their place is a small indicator that shows if the pump lubricator in the crank case is working. The innovation has much in its favour, only care should be taken that the pump can be removed easily from the crank case in case it requires attention. The leather-faced cone clutch, I am glad to see, is not dead, though perhaps the multiple disc type has a few more adherents. Carburettors of a simple type are luckily still popular. In fact, on the new Darracq the mixture-making apparatus is simplicity itself, and the jet can be removed in a second without any dismantling. Multiple jets, however, claim more followers. The gate-change has, to the advantage of all, come to stay. To the maker it means shorter shafts in the gearbox, and to the owner greater ease in changing gears. In transmission the chain is vanishing, and now the Panhard are producing cardan shafts with live axles. A large number of cars, including some of the Napier, Wolseley, Thames, New Engine Co., as well as the Lanchester and Dennis, who always favoured this method, now have worm drive in place of bevel. Of course, in both types the thrust is an objection, but in a well-designed worm, where there is a big surface always in contact, and the movement is more sliding than rolling as in the bevel drive, the balance of favour is certainly with the worm.

The springing of the car has certainly improved, and the three-quarter elliptic is deservedly popular. As to bodies and coachpainting, the "Long Acre" part of the show is crowded with fine specimens of British and foreign work, and all will note with pleasure that the native builder compares favourably with the continental. High side doors and a curved overhanging dash are the rule, and will certainly add to comfort if the approaching winter is at all severe. I rather hoped to see more cars with front wheel brakes, but probably that will come in due course.

Most car owners now have pits, so as to be able to get underneath their automobile for periodical examination of the steering gear, axles, &c., and doubtless many a serious accident might have been averted if these "vitals" of a car were examined more often. Those who do not possess a pit will appreciate the auto-creeper—an appliance shown by Tom Norton, Limited, of Llandrindod Wells, which is justly called the chauffeur's friend and tailor's enemy. It is made of wood, runs on castors, and consists of a sort of tray on which the chauffeur can lie down comfortably, there being a pad for the head. Resting thus he can pull himself under the car, and make any adjustments or inspections. On the same stand (No. 184) are shown the Norton stoves, which are specially designed for heating private motor garages. Of course, in frosty weather glycerine can be added to the water in the radiators and cylinder jackets, or it can be emptied every night. The latter process is troublesome, as it is not easy to make sure that every drop of water is got rid of, and then, should a hurried call come, it is even more worry to fill up with water and to be certain that an air lock does not interfere with the water circulation. So on the whole warming of the garage is the easiest and safest procedure in frosty weather, and as the Norton stove is sanctioned by the leading fire insurance companies it is certainly worthy of inspection.

THE HEALTH OF THE NAVY.1

THE Statistical Report on the Health of the Navy for 1908, issued in September, shows a continuous improvement in the general health of the fleet, as compared with the preceding five years. It deals with a total force of 109,210, of whom a large majority—viz., 74,030—were serving in our own seas, in this point presenting a contrast with the military forces, about half of these constantly serving abroad.

The health returns are satisfactory, showing lower ratios of cases of sickness and injury, invaliding and mortality, also a slight diminution in the average loss of service for each man as compared with the previous quinquennial average. For the whole force the average sick-rate was 28.32 per 1000, showing the substantial decrease of 2.58 in comparison with the previous five years. The average loss of service was 10.36 days for each person, being 0.92 less than the previous average. The highest ratio of men sick daily occurred, as before, in what is called the Irregular List—that is, the crews of vessels on passage to or from foreign stations and of vessels on the west coast of America; it amounted to 48.02 per 1000. Next to this comes the Home Station, with a daily ratio of 34.72. On the China Station the ratio was 29.04 and in the

East Indies 28.68. All the other fleets had a lower figure than the average, the Channel Fleet having the lowest, 22.64. It is to be noted that this year what has been hitherto called the Home Station is divided into "Home Station" and "Home Fleet," the depôts and training ships being grouped under the former heading. This seems to be an improvement, as there is considerable difference between the circumstances of such service and the ordinary sea-going conditions.

The relative importance of the principal diseases that prevail in the Royal Navy is best seen by considering the ratios per 1000 of cases admitted and of daily sick. For all causes together 692 cases per 1000 of strength were treated, and 28 per 1000 were sick every day. The most important group of affections was that of venereal diseases, which accounted for 122 admissions and 8 daily sick per 1000 of strength; for digestive diseases the cases were 102 and the daily sick 3 per 1000; diseases of the connective tissue and skin and of the respiratory system, with 82 and 75 admissions per 1000 came next in importance.
The most prevalent single affection (except gonorrhosa) was influenza, for which there were 33 admissions per 1000; but it was not of a severe type, the daily number of sick from this cause being 0.77 per 1000. Local injuries, as might be expected, were frequent, causing 141 admissions per 1000, and 4.65 constantly sick. All of these ailments, however, have affected the service less in 1908 than in the preceding five years period, except influenza and venereal disease, in the former case the increase being probably fortuitous. It is regrettable that syphilis, chancroid, and gonorrheea are still so prevalent, showing little signs of diminution; primary syphilis and chancroid, indeed, have fallen from 34 to 27 admissions per 1000; but secondary syphilis has risen from 26 to 28, and generative from 61 to 67 cases per 1000, as compared with the five years 1903-07. most serious causes of death from disease were pneumonia (47 deaths, or 0.43 per 1000), and tuberculosis (37 deaths, or 0.33 per 1000). Enteric fever caused 20 deaths, or 0.18 per 1000 of strength. The chief causes of invaliding were tuberculosis (268 cases, 2.45 per 1000) and diseases of the digestive system (277 cases, 2.53 per 1000), affections of the teeth and hernia. On comparing the statistics of the different commands, it is seen that the East India Station suffered most; the case-rate was 1090, the constantly sick-rate 29, and the death-rate 7.55 per 1000, while the invaliding was as high as 45 per 1000; the number of men on the station was, however, only 1720. Of the 13 deaths that occurred, 2 were due to wounds in action and 2 to malaria. The healthiest commands were the Atlantic Fleet (601 cases of sickness and 2 deaths per. 1000), and that at the Cape (607 cases and 0.87 deaths per 1000); the Channel and Mediterranean Fleets were nearly as healthy with 616 and 610 cases per 1000, and 2.12 and 2.04 deaths per 1000 respectively.

Turning now to some of the most important diseases, we find that 3643 cases of influenza were admitted to treatment, 4 died and 1 case was invalided; it prevailed in all the commands, except in the East Indies, but was most rife in the Channel Fleet, the Home Station, and the Home Fleet. There were 75 cases of diphtheria, occurring not only at home, but also in the Atlantic Fleet, North America and West Indies, East Indies, and Australia; there were 3 deaths. There were 151 cases of enteric fever, with 20 deaths; the disease was present in every command, except that of the East Indies. Nine cases occurred on H.M.S. Vivid, but it is stated that they all contracted the disease while on leave (Home Station); 4 cases occurred on H.M.S. Donsgal and 6 on H.M.S. Leander (Home Fleet). H.M.S. Soylda had eight cases, five of which were contracted at Bermuda, and one (a medical officer) by apparent infection from a previous case. The other cases were all isolated ones. No general cause appears to have been in operation.

Only in two commands do fresh admissions appear as due to Malta fever. In the Mediterranean, with an average strength of 9780, there were 6 fresh admissions (0·61 per 1000); in the preceding five years the average annual admission-rate was 14·67 per 1000, while 0·34 died and 10·22 were invalided. The daily sick ratio is now 0·09 per 1000, or actually not quite one single sailor constantly in hospital on an average. No death occurred, and the invaliding was 0·3 per 1900, as compared with 10·22, the

Sens, Fetter-lane, E.C. Price 8d.

quinquennial average for 1903-07. From a strictly utilitarian point of view the improvement is best shown by the statement that during the year the "number of days lost" to the Service was 1000; five years ago (1903) it was 30,541. Malaria showed the comparatively high admission-rate of 7 per 1000, due principally to the East Indies Station, where there were 435 admissions, chiefly in Bombay, on board H.M.S. Perseus; the men lived in the Sailors Home, where they were supplied with mosquito nets, but worked on board ship every day; and it is noted that mosquitoes swarmed there and bit all day long. We cannot help wondering whether, if the anopheles was recognised (as it surely must have been), attempts were made to exterminate the pest; or failing that, to protect the men by the use of some culicide, or by giving quinine. This may have been done; but all that is said is that "the year had been an exceptionally severe one, as regards malaria, all over India. This is emphatically nil ad rem. Tuberculosis was accountable for 37 deaths and 268 invalidings, being still the most serious and fatal morbid condition in the Navy; the ratios per 1000 were 3.08 cases, 0.33 deaths, and 2.45 men invalided, each item, however, showing a slight improvement on the pre-ceding quinquennium. The Mediterranean Fleet and the Irregular List showed the greatest prevalence; but the numbers are not large enough to suggest any reason for this incidence, though in each case the average of the previous five years was exceeded. Pneumonia was the cause of more deaths (47), but only occasioned 7 invalidings. Rheumatic fever caused 6.5 admissions per 1000, and an invaliding ratio of 0.74; there were 712 cases in all, with only 1 death

It is worth noticing that in the whole Navy the cases of alcoholism numbered not more than 113-i.e., 1.03 per 1000; 2 deaths occurred and 2 men were invalided for this cause. A large number of cases of respiratory disease were admitted (74.56 per 1000), but they were mostly trivial, coming under the head of "catarrh." Under digestive Under digestive system there were 102 per 1000 admissions, with 2.53 invalidings and 0.23 deaths; tonsillitis and sore-throat accounted for a large proportion of the cases, and a large number (2723) are lumped together under the head of "diseases of the intestines "—a designation conveying, perhaps, an irreducible minimum of information. The invalidings for digestive disease, 2.53 per 1000, were more numerous than for any other class, but it is not possible to discover what were the causes, except that 24 cases of hernia were invalided after refusing operation. Local injuries caused 141 per 1000 admissions and 4.65 daily sick, leading to 1.21 invalidings and 0.13 deaths. General injuries were not more numerous than usual (2.14 cases as compared with the quinquennial average of 2.83 per 1000), but of the actual 234 casualties 115 were fatal, 98 being cases of drowning, 15 multiple injury and burns and scalds, 1 heat-stroke, and 1 disappearance of an officer on the West Coast of Africa. occurred in action off the Makraan coast of Baluchistan, while patrolling for arms-running dhows. Deaths by violence in all amounted to 1 · 19 per 1000, which, considering the enterprise and disregard of danger that characterise the British Navy, appears to be a very low figure. Of the 98 deaths by drowning 58 were due to the Gladiator and Tiger disasters.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

An ordinary meeting of the Council was held on Nov. 11th, Mr. BUTLIN, the President, being in the chair.

The following resolution was carried:-

That the Council do hereby express their great regret at the death of Mr. Henry Hugh Clutton, who for the last seven years has been a member of the Council and taken an active part in the affairs of the College. While recording their sorrow at the loss of so useful a colleague the Council would take the opportunity of saying that Mr. Clutton will long be remembered by them with affection and esteem on account of his attractive disposition and his interest in all that concerned the welfare of the College. The Council also desire to express their deep sympathy with Mrs. Clutton and family in their anxiety during the long illness which has now terminated in his death.

It was resolved to issue diplomas of Membership to 99 successful candidates.

The SECRETARY reported that the by-laws relating to the admission of women and other matters have been signed by

the Secretary of State for Home Affairs, the Lord Chancellor, and the Lord Chief Justice.

It was resolved to adopt the form of the diplomas to begranted to women which had been recommended by the President and Vice-Presidents.

A letter was received from Sir T. Rudolf Smith, Bart., thanking the Council for their resolution of sympathy on the death of his father, the late Sir Thomas Smith.

The PRESIDENT reported that the Bradshaw lecture will be delivered by Mr. F. R. Cross on Friday, Dec. 10th, at 5 P.M., and that the subject of the lecture will be "The Brain Structures concerned in Vision and the Visual Field." The President stated that Mr. Bernard Pitts's period of office on the Court of Examiners will expire on Dec. 8th next, and that the vacancy thus occasioned will be filled up at the ordinary meeting of the Council on Dec. 9th.

The SECRETARY announced the notices of motion for the annual meeting of Fellows and Members on Nov. 18th.

Looking Back.

THE LANCET, SATURDAY, Nov. 19th, 1881.

(In this issue of THE LANCET no fewer than 44 pages are taken up with a History of the Rise, Progress, Ravages, &c., of the Blue Cholera in India, supplemented by a special map of the Progress of the Cholera. From this long account we can only cull the following excerpt.)

Even though the general immunity were confirmed, the force of the habitual exposure of medical men to insalubrious effluvia, and the consequent insusceptibility they must gradually acquire, should be taken into consideration. Moreover, of all men, physicians and medical attendants are accustomed to view disease with the greatest equanimity; and who is there who will doubt the efficacy of this counter-influence? Once for all, then, we have to repeat that even though the general immunity were fully proved, it would not disprove the contagious nature of cholera, it would only show that the individuals exposed were not susceptible of its effects. Let us, for example, view the malady in some other place than in an hospital. The medical attendants and the bystanders escape. Have they not been exposed to the same causes, whatever be their kind, as the patients they visited? Moreover, one of the main champions of anti-contagionism boldly declares that there is no latent period in the operation of the poison; in other and simpler words, that seizure is instantly consecutive on exposure. But suppose we cast all these facts overboard, and once more contemplate the phenomena of typhus fever, why, according to Mr. Searle and the other disclaimers* at the Egyptian Hall, every medical attendant who treated a case of fever should perish.

* "Mr. WHITLAW declared, that the disorder all over the world arose from eating bad RICE and RYE, which a destructive worm infected, and which carried off 20,000 people in New York !!!"

THE CHILDREN'S HOME HOSPITAL, ABERFOYLE.-This institution, of which the Duchess of Montrose is the honorary president, has for its main object the provision of open-air treatment combined with rest for children suffering from external or surgical tuberculosis. The work of the hospital is carried on in connexion with, and is supplementary to, that of the Glasgow hospitals. The sixth annual report, dated August, 1909, states that the total number of children received during the last 12 months was 55, and there remained in the home on July 31st, 1909, 23 patients. The total working expenses of the home for the year were £615 17s. 3d., and the statement of accounts shows a deficit of £101 16s. 4d. The report contains an appeal for a sum of £5000 for the purpose of building a new home outside the village of Aberfoyle. More open space is required for outdoor treatment where the patients would be less at the mercy of the dust from the main road, by the side of which the home is at present situated.

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THE JOHN HERBERT WELLS FUND.

THE following is the second list of subscriptions promised to or received by this fund, but it does not include all subscriptions which have been received at this office or by the Earl of Dalhousie and Mr. Julian G. Lousada, the honorary secretaries and treasurers of the fund. Further subscriptions will be gratefully received by these gentlemen at 16, Old Broad-street, E.C., or by ourselves at this office:

Broad-street, E.C., or	bу	ou	rse	lves at this office:—		
A	£	8.	d.		£	8.
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Mr. H. Stansfield Collier		0	Ŏ	Mr. A. Burke	2	2
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Sir Malcolm Morris, K.C.V.O.)	50	0	0	Mr. A. E. Clayton Wood- house	2	2
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Anonymous	1	0	0	Mrs. Denison	1	0	0
Mrs. Agnes A. Bannister	1	0	0	A. B	1	0	0

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 8097 births and 4353 deaths were registered during the week ending Nov. 13th. The annual rate of mortality in these towns, which had been equal to 12.0 and 13.3 per 1000 in the two pre-ceding weeks, further rose to 13.8 in the week under notice, and exceeded the rate recorded in any week since the middle of May. During the first six weeks of the current quarter the annual death-rate in these towns averaged 12.7 per 1000, and in London during the same period the rate did not exceed 12.5 per 1000. The lowest annual rates of mortality recorded in the 76 towns last week were 2.0 in Work Hartlands 5.0 in Buddies 5.0 in Work Hartlands 5.0 in Buddies 5.0 in Particular 5.0 in Work Hartlands 5.0 in Buddies 3.9 in West Hartlepool, 5.0 in Reading, 5.2 in East Ham, and 5.4 in York; the rates in the other towns ranged upwards, however, to 19.2 in Burton-on-Trent, 20.3 in Bootle, 23 · 1 in Stockport, and 24 · 2 in Hanley. In London the recorded death-rate last week rose to 13.9 per 1000. The 4353 deaths registered in the 76 towns last week showed a further increase of 173 upon the numbers returned in the two preceding weeks, and included 261 which were referred to the principal epidemic diseases, against numbers declining steadily in the 11 preceding weeks from 849 to 283; of these 261 deaths, 68 resulted from diarrhea, 48 from whooping-cough, 44 from scarlet fever, 41 from diphtheria, 40 from measles, and 20 from "fever" (principally enteric), but not one from small-pox. The 261 deaths from these epidemic diseases last week were equal to an annual rate of 0.8 per 1000, which was lower than the rate from these diseases in any previous week of this year. No death from any of these epidemic diseases was registered last week in Croydon, Tottenham, Norwich, Wolverhampton, or in 14 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 2.2 in Preston, Bolton, and Smethwick, 2.7 in Newport (Mon.) 3.5 in Rhondda, and 6.1 in Hanley. The deaths attributed to diarrhea in the 76 towns, which had declined in the 11 preceding weeks from 675 to 110, further decreased to 68 last week; the highest death-rates from this cause last week were 1.3 in Devonport and 2.3 in Rhondda. The fatal cases of whooping-cough, which had been 42 and 31 in the two preceding weeks, rose to 48 last week; they caused annual rates equal to 1 · 1 in St. Helens and 1 · 3 in Plymouth. The 44 deaths from scarlet fever showed a further increase upon recent weekly numbers, and included 14 in London and its suburban districts, 7 in Manchester, 4 in Birmingham and Smethwick, and 3 in Liverpool. The 41 fatal cases of diphtheria showed a further slight decline from the numbers in recent weeks; 13 occurred in London and its suburban districts, 4 in Manchester and Salford, 3 in Birmingham and Smethwick, and 2 both in Bristol and Nottingham. The 40 deaths from measles showed a decline of 3 from the number in the previous week, but caused annual rates equal to 1.1 in Hornsey, 1.3 in Newport (Mon.), 1.4 in Ipswich, and 5.3 in Hanley. The deaths referred to "fever" last week were Hanley. 20, against 16 and 19 in the two previous weeks; 4 occurred in Bolton (equal to an annual rate of 1.1), 3 in Manchester and Salford, 3 in Leeds, and 2 both in Nottingham and in Liverpool. The number of scarlet fever patients under treatment in the Metropolitan Asylums and London Fever Hospitals, which had declined from 2810 to 2696 on the four preceding Saturdays, had further fallen to 2624 on Saturday last; 284 new cases of this disease were admitted to these hospitals during last week, against 284 and 336 in the two preceding weeks. The Metropolitan Asylums Hospitals contained 4 small-pox patients on Saturday last. Of the 1285 deaths registered in London last week, 288 were referred to pneumonia and other diseases of the respiratory system, against numbers increasing from 167 to 230 in the four preceding weeks; these 288 deaths were, 1 0 0 however, 3 below the corrected average number in the corre-1 0 0 sponding week of the five years 1904-08. The causes of 35, or

0.8 per cent., of the deaths registered last week in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death registered last week were duly certified in Manchester, Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Hull, Nottingham, Leicester, Salford, and in 50 smaller towns; the 35 uncertified causes of death in the 76 towns last week included 8 in Liverpool, 6 in Birmingham, and 4 in South Shields.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 794 births and 566 deaths were registered during the week ending Nov. 13th. The annual rate of mortality in these towns, which had been equal to 12.9 and 15.3 per 1000 in the two preceding weeks, further rose to 15.8 in the week under notice. During the first six weeks of the current quarter the annual death-rate in these Scotch towns averaged 13.7 per 1000, and exceeded by 1.0 the mean rate during the same period in the 76 largest English towns. The annual death-rates last week in these Scotch towns ranged from 8.5 and 12.9 in Perth and Aberdeen, to 17.6 in Paisley and 18.0 in Glasgow. The 566 deaths from all causes in the eight towns last week showed a further increase of 19 upon the numbers returned in the two preceding weeks, and included 66 which were referred to the principal epidemic diseases, against 34 and to an annual rate of 1.8 per 1000; the mean rate from the same diseases last week in the 76 English towns did not exceed 0.8 per 1000. The 66 deaths from these diseases in the Scotch towns last week included 22 from measles, 16 from diarrhea, 10 from scarlet fever, 7 from diphtheria, 6 from "fever," and 5 from whooping-cough, but not one from small-pox. The 22 fatal cases of measles in the eight towns were within two of the number in the previous week; 21 occurred in Glasgow. The 16 deaths attributed to diarrhosa exceeded by 3 those returned in the previous week, and included 7 in Edinburgh, 5 in Glasgow, and 2 in Dundee. The 10 fatal cases of scarlet fever showed a considerable increase upon recent weekly numbers, including 7 in Glasgow and 2 Edinburgh. The deaths from diphtheria, which had been 4 and 13 on the two previous weeks, declined last week to 10, of which 4 occurred in Glasgow, and 2 in Aberdeen; 5 of the 6 deaths referred to "fever," and 3 of the 5 fatal cases of whooping-cough were returned in Glasgow. The deaths referred to diseases of the respiratory organs in the eight towns, which had been 68 and 108 in the two preceding weeks, further rose last week to 115, but were 11 below the number registered in the corresponding week of last year. The causes of 18, or 3.2 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0.8 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,142,308 persons, 564 births and 420 deaths were registered during the week ending Nov. 13th. The mean annual rate of mortality in these towns, which had been equal to 14.8, 16.4, and 17.4 per 1000 in the three preceding weeks, further rose to 19.2 in the week under notice. During the first six weeks of the current quarter the annual death-rate in these Irish towns averaged 16:4 per 1000, whereas the mean death-rate during the same period did not exceed 12.7 in the 76 largest English towns, and 13.7 in the eight principal Scotch towns. The annual death-rate last week was equal to 21.7 in Dublin (against 13.9 in London, 17.5 in Belfast, 20.5 in Cork, 12.1 in London-derry, 20.5 in Limerick, and 21.4 in Waterford; the mean rate in the 16 remaining smaller Irish town districts last week was equal to 17.9 per 1000. The 420 deaths from all causes in the 22 town districts last week showed a further increase of 39 upon the numbers in the three preceding weeks, and included 20 which were referred to the principal epidemic diseases, against 26 and 21 in the two previous weeks; these 20 deaths were equal to an annual rate of 0.9 per 1000; in the 76 English towns the rate last week from the same diseases was 0.8, and in the eight Scotch towns was 1.8 per 1000. The 20 deaths from these epidemic diseases in the Irish towns last week included 9 from diarrhoa,

5 from whooping-cough, 3 from "fever," 2 from diphtheria, and 1 from scarlet fever, but not 1 either from measles, or smallpox. The 9 deaths attributed to diarrhoea showed a further decline from recent weekly numbers, but included 4 in Dublin and 2 in Belfast. The 5 fatal cases of whooping-cough corresponded with the number in the previous week; 4 occurred in Belfast, and 1 in Dublin. Of the 3 deaths from enteric fever 2 were recorded in Belfast and 1 in Dublin. A fatal case of diphtheria was returned both in Dublin and in Belfast. The deaths resulting from pneumonia and other diseases of the respiratory system, which had been 50, 60, and 86 in the 3 preceding weeks, further rose to 88 in the week under notice. The causes of 16, or 3.8 per cent., of the deaths in these Irish towns last week were not certified by a registered medical practitioner or by a coroner; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0.8 per cent., and in the eight Scotch towns the proportion was 3.2 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

The following appointments are notified:—Fleet-Surgeons: V. G. Thorpe to the Terrible and J. F. Hall to the Terrible, for medical charge on passage home from Colombo. Staff-Surgeons: M. P. Jones to the Hogue, on commissioning; M. C. Langford to the President, additional, for service at Medical Department, Admiralty; A. W. B. Livesay to the Devenshire; and J. O'Hea to the Terrible and to the Powerful, on recommissioning. Surgeons: W. K. D. Breton to the Terrible and to the Powerful, on recommissioning; H. C. Devas, A. A. Sanders, K. H. Hole, H. F. Briggs, and W. Miller to the Viotory; H. W. Nicholls, R. P. M. Roberts to the Wildfire; G. F. Syms, M. P. Fitzgerald, J. Hadwen, J. S. Orwin, and J. Barrett to the Vivid; G. A. Jackson and A. G. Malcolm to the Pembroke, all additional, for disposal.

The undermentioned Staff-Surgeons have been promoted to the rank of Fleet-Surgeon in His Majesty's Fleet: James William Wilcocks Stanton, Thomas Dufour Halahan, John Christopher Durston, Morris Charles Langford, Percy Hamilton Boyden, Alfred Hutton Jeremy (dated Nov. 14th, 1909).

The undermentioned Surgeons have been promoted to the rank of Staff-Surgeon in His Majesty's Fleet: Ernest Fitzgerald Ellis (dated Feb. 11th, 1909), Pierce Leslie Crosbie (dated Sept. 23rd, 1909).

ARMY MEDICAL SERVICE.

Surgeon-General William Donovan, C.B., retires on retired pay (dated Nov. 17th, 1909).

ROYAL ARMY MEDICAL CORPS.

Colonel E. Butt has been appointed Principal Medical Officer, Presidency and Assam Brigades, vice Colonel J. G. Harwood, retired. Lieutenant-Colonel R. H. Firth, in charge of the School of Army Sanitation, Aldershot, has been gazetted Brevet-Colonel, under the terms of the Royal Warrant (Articles 35 and 307), for distinguished services of a scientific nature in connexion with sanitation. Lieutenant-Colonels H. Carr, J. V. Salvage, and Major R. F. E. Austin on arrival from England have been appointed to command the station hospitals at Jullundur, Ferozepore, and Jutogh respectively. Lieutenant-Colonel T. Daly and Major H. N. Dunn have been appointed to command the Station Hospitals at Dalhousie and Dagshai respectively from March 1st, 1910.

INDIAN MEDICAL SERVICE.

Colonel R. W. S. Lyons has been appointed Officiating Principal Medical Officer, Kohat Brigade. The services of Captain Macrae have been placed temporarily at the disposal of the Jail Department of Eastern Bengal and Assam. Captain E. W. C. Bradfield has been appointed to the permanent medical charge of the 31st Lancers. Captain A. E. J. Lister, at present in permanent medical charge of the 5th Cavalry, has been selected to succeed Major K. Cameron, R.A.M.C., as staff surgeon, Army Headquarters, Indian Major Bruce Seton, secretary to the Director-General, Indian Medical Service, has been selected as the Government of India representative on the Simla Municipal Committee, vice

Colonel Watkins. Captain R. McCarrison has been appointed agency surgeon at Gilgit. Captain Hepper has been posted to Peshawar as plague medical officer. Lieutenant James is provisionally promoted Captain. The services of Captain K. S. Singh have been placed at the disposal of the Government of the Punjab.

SPECIAL RESERVE OF OFFICERS. Royal Army Medical Corps.

Supplementary List:—The undermentioned Lieutenants to be Captains: Robert A. O'Donovan (dated Sept. 24th, 1909) and Robert J. Stirling (dated Oct. 1st, 1909).

TERRITORIAL FORCE.

Royal Army Medical Corps.

3rd Home Counties Field Ambulance: Hector Graham Gordon Mackenzie to be Lieutenant (dated Oct. 20th, 1909).

1st North Midland Field Ambulance: Henry Gray Woodhouse Dawson to be Lieutenant (dated Oct. 7th, 1909).

1st London (City of London) Sanitary Company: Lieutenant Ralph H. B. Carthew resigns his commission (dated Oct. 14th, 1909).

Attached to Units other than Medical Units.—Captain John Rowan to be Major (dated Dec. 27th, 1908).

DEATHS IN THE SERVICES.

Deputy-Surgeon-General James Edward Scott, late A.M.D., on Nov. 7th, in Dublin, aged 84 years. He entered the service in June, 1847, was promoted surgeon in February, 1856, and surgeon-major in June, 1867. He served with the Rifle Brigade in the Kaffir war of 1852-53, including the expedition beyond the Kei in August, 1852, and the final clearing of the Waterkloof (medal). He embarked with the Rifle Brigade, and served throughout the Eastern campaign of 1854-55 as surgeon of the 41st Regiment (medal with four clasps, the Fifth Class of the Order of the Medjidieh, and the Turkish medal). He retired in 1879.

THE RED CROSS SOCIETY IN ESSEX.

The Lord Lieutenant of Essex has been asked by the Red Cross Society to form a branch of the society in the county of Essex, the immediate object of which is to organise voluntary aid detachments for service in the county with the Territorial Forces in the event of invasion. Lord and Lady Warwick have been appointed Presidents of this branch of the Red Cross Society, Colonel R. B. Colvin will act as county director pro tem., and there will also be an honorary secretary. A large number of ladies and gentlemen are being invited to become vice-presidents, and to subscribe for local requirements. Voluntary aid detachments are needed to complete the organisation of the Terri-torial Royal Army Medical Corps, and it is proposed to raise one or more detachments (male and female) in each police division of the county, and where local recruiting committees for the county Territorial Forces already exist. The following are qualified to join voluntary aid detachments at once:—1. Registered medical practitioners of both sexes. Fully trained hospital nurses.
 Trained pharmacists.
 Those of either sex possessing first-aid and home-nursing certificates of the St. John Ambulance Association. The St. John Ambulance Association will give instruction and grant certificates in the last-named subjects in localities where their branches are formed-viz., Leyton, East Ham, Becton, Walthamstow, Ilford, Barking, Manningtree, and Colchester. In other places where no branch exists they will grant certificates to persons presenting themselves for examination on payment of a fee of 1s. per head. It is hoped that the Essex Educational Committee may arrange lectures on the above subjects. A voluntary aid detachment will consist of men and women under their own officers. The officers of the women's portion will be men but they will have also lady super-intendents. A detachment will number at least 88 persons, i.e., 18 officers and four women officers, 48 men and 18 women, or 66 men and 22 women all told. Each detachment will be divided into two half-detachments composed of men and women. Each detachment should be selfsupporting, and it is estimated that a small fee will be required from members of voluntary aid detachments to provide the necessary equipment and fees, which will be supplemented from the funds of the Essex Red Cross Branch. Detachments will be mobilised when occasion requires and members receive the pay of their respective ranks. Application should be made to either Colonel Colvin, C.B., Hunting.

Monkhams, Waltham Abbey, or Lady Warwick, at Easton Lodge, Dunmow.

THE JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

In the November issue of this journal Lieutenant-Colonel R. J. S. Simpson, C.M.G., R.A.M.C., continues his interesting medical history of the South African War. Among the other articles is one by Colonel T. M. Corker, A.M.S., who writes on War Training. In his introduction he says: "The suggestion that knowledge of military strategy on our part is uncalled for and unnecessary has been most unacceptable to our officers in the past. There is no phase of our work more important than that which yields positive proof of the great part the corps plays in the success of military operations-by clearing the area of conflict of the wounded that would hamper the movements of the general officer commanding-in-chief, and by dealing with them in such prompt and capable fashion that the dreadful sights of ancient battlefields may no longer horrify the eye and lower the morale of the rest of the Lieutenant-Colonel R. H. Firth, R.A.M.C., deals with the constitution, duties, and equipment of sanitary companies of the Territorial Force, and makes some suggestions for the best means of utilising the annual period of training.

UNITED STATES NAVAL MEDICAL BULLETIN.

The quarterly bulletin which is issued by the Bureau of Medicine and Surgery "for the timely information of the Medical and Hospital Corps of the Navy" embodies matters relating to hygiene, tropical and preventive medicine, pathology, laboratory suggestions, chemistry and pharmacy, advanced therapeutics, surgery, and other things of interest to the service. Among the interesting notes in the issue for October, 1909, is a case of fracture of the skull and gunshot wound with recovery. There is also an article on typhoid fever advocating the use of external cold and the copious use of water irrigations of the colon in preference to repeated bathing as being better suited to the conditions of the American naval service.

AN ITALIAN ORDER FOR A NAVAL SURGEON.

Staff-Surgeon Elystan Glodrydd Evelyn O'Leary, R.N., who is at present serving on H.M.S. Donegal at Devonport, has received the Italian Order of St. Maurice and St. Lazarus. Staff-Surgeon O'Leary was on the Sutlej, which was at Messina at the time of the earthquake.

SPANISH RED CROSS SOCIETY.

The Spanish Red Cross Society has issued an urgent appeal for assistance to enable it to continue its work in the Riff. The resources of the society have been greatly taxed, and it hopes that its good work may not be interrupted by lack of funds. Subscriptions will be gladly received by the British committee of the Spanish Red Cross Society at 6, St. Swithin's-lane, London, E.C.

ENAMINATION FOR COMMISSIONS IN THE ROYAL ARMY MEDICAL CORPS.

An examination for not fewer than five commissions in the Royal Army Medical Corps will be held on Jan. 26th next. Application should be made to the secretary, War Office, London, S.W.

THE TUBERCULOSIS EXHIBITION IN LONDON.-The Tuberculosis Exhibition of the National Association for the Prevention of Consumption, which was opened last summer at Whitechapel by the Right Hon. John Burns, M.P., and which has since been seen at the White City, will shortly be revived in the West of London. From Nov. 23rd to Dec. 4th inclusive it will be situated at the Chelsea Town Hall, under the auspices of the boroughs of Chelsea, Fulham, and Westminster, and from Dec. 8th to 17th inclusive it will be held as the Paddington Tuberculosis Exhibition at the Congregational Hall, Queen's Park, Harrow-road (by permission of the Rev. Dr. Lawson Forster). instances admission will be free and special popular lectures will be given on different phases of tuberculosis and its prevention. Amongst the lecturers who have already promised to speak at Chelsea are Dr. Arthur Latham, Professor G. Sims Woodhead, Dr. C. Theodore Williams, Dr. Hector Mackenzie, Mr. Stanley Bates, Dr. M. S. Paterson, Dr. Nathan Raw, Mr. Ainsworth Wilson, and Mr. William

Correspondence.

"Audi alteram partem."

LUNG PUNCTURE.

To the Editor of THE LANCET.

SIR,-In an article in THE LANCET of Nov. 6th on "Lung Puncture: a New Application of Clinical Pathology, Dr. T. J. Horder recommends the use of this procedure in "any case yielding signs of consolidation of the lung, in which careful examination of the sputum fails to reveal the nature of the disease," in cases of lobar pneumonia, "if the desired clinical course is departed from in any way to the prejudice of the patient," and finally in cases of abscess of lung or of bronchiectasis for the purpose of obtaining the causal organisms unmixed with the flora of the sputum. Details of six cases are given in which valuable information was gained from the fluid withdrawn from the lung by a hypodermic needle. Dr. Horder does not, however, mention certain grave risks which are apt to attend exploratory puncture of the lung. There are now on record a considerable number of cases of death following this procedure, some immediate and others within a few hours or days—deaths undoubtedly directly referable to the puncture. The writer has recorded three cases: in one, death occurred immediately on the puncture of the lung; in the other two cardiac inhibition occurred, but the heart's action was restored, death, however, occurring in three and five days respectively, the patients remaining unconscious the whole time.

Sir Thomas Oliver² has recorded two cases, in one of which death was instantaneous, and in the other occurring on the day following the puncture. In a third case severe symptoms with cyanosis occurred, but the patient rallied in two days. Dr. J. H. Wilks' recorded one with instantaneous death, associated with hæmorrhage into lungs and stomach. Dr. J. Porter Parkinson recorded one in which death occurred within two minutes, but at the post-mortem examination the stomach was full of blood and some blood was present in the bronchi. Dr. G. Carpenter 5 recorded one in which the stomach was found to be full of blood and the bronchi contained blood-stained mucus. Dr. J. M. Fortescue-Brickdale 6 recorded another fatal case, and Dr. H. Armstrong one in which recovery occurred after a grave attack of syncope. My colleague Dr. W. S. Colman tells me of another unpublished case in which death occurred five hours after the puncture and was associated with cyanosis and collapse. Finally, in one unrecorded case at St. Thomas's Hospital the puncture was performed under chloroform with instantaneous death on the introduction of the needle. Doubtless other cases have occurred, but the above series of 11 deaths is enough to show that real danger attends this apparently simple procedure. In some cases death is instantaneous and must be attributed to inhibition of the heart. It has been shown that stimulation of the pulmonary fibres of the vagus can produce an active inhibition of the heart.8 and this has been confirmed by Capps and Lewis in the case of experimental irritation of the inflamed pleura in

In the cases of Carpenter, Wilks, and Porter Parkinson the stomach was found to be full of blood and the bronchi to contain blood-stained mucus. In these cases the fatal result is probably attributable to hæmorrhage, though the possibility of the death being due to primary cardiac inhibition and the hamorrhage merely the result of the active compression of the punctured lung during the artificial respiration has to be entertained. In only two cases with severe symptoms did recovery occur. The very large number

1 On Death Occurring During or After Exploratory Puncture of the Lung, St. Thomas's Hospital Reports, vol. xxviii., 1899.

2 THE LANCET, Jan. 2nd, 1904, p. 26.

3 British Journal of Children's Diseases, October, 1905, p. 462.

4 Ibid., August. 1905, p. 39.

5 American Journal of the Medical Sciences, October, 1893.

6 Reports of the Society for the Study of Disease in Children, 1905, vol. v. n. 118.

vol. v., p. 118.

Liverpool Medico-Chirurgical Journal, July, 1906, p. 110.

Brode and Russell: On Reflex Cardiac Inhibition, Journal of Physiology, 1900, vol. xxvi., p. 92.

of fatal accidents that have occurred during lavage of the pleura in cases of empyema are presumably of similar origin. Accidents have also occurred in aspiration of pleural effusions, but there seems to be much less risk in simple puncture of one pleural surface than in puncturing inflamed lung tissue.

The explanation of the occasional occurrence of this accident is far from obvious; it may be that the vagus fibres are unduly sensitive in these cases of inflammation of the lung and pleura, but it is difficult to understand why it occurs in some cases and not in others. It might be thought that the risk would be diminished by an anæsthetic, but, as noted above, one death occurred whilst the patient was under the influence of chloroform; it might, of course, be attributable to chloroform syncope, but the symptoms occurred immediately on the introduction of the exploring needle. Cardiac inhibition occurring during puncture of lung or lavage of pleura is one of the most fatal accidents met with in medicine, and artificial respiration, combined with other methods of resuscitation, have proved unavailing in the large majority of cases. The writer is of opinion that the method of treatment that offers the best chance of success is to open the abdomenand perform massage of the heart by the subdiaphragmatic route, and that this should be done within two or three minutes of the cardiac arrest and should be carried on concurrently with artificial respiration.

Even in those cases in which the heart-beat has been restored death has occurred in some cases after a periodvarying from hours to days, the patient never regaining consciousness; full details of two such cases are given in the paper referred to above. Numerous cases of this condition are on record in the literature, associated with lavage of the pleural cavity. In these cases it must be assumed that the brain has not been able to recover from the long arrest of its circulation. It is possible that cedema of the brain occurs and lumbar puncture would be worth a trial in any future In some cases exploratory puncture of the lung is unavoidable and the risk of cardiac inhibition must be taken; but it would be advisable to warn the patient and the patient's relatives that the procedure is not devoid of danger. This accident is of such an appalling character that its importance is utterly disproportionate to its doubtless small percentage incidence, and, in the absence of measures which may minimise the risk, seems to render inadvisable the routine use of lung puncture as a clinical diagnostic procedure—a procedure which, as Dr. Horder has clearly shown, would otherwise yield the most valuable information.

I am, Sir, yours faithfully. Upper Wimpole street, W., Nov. 7th, 1909.

To the Editor of THE LANCET.

SIR,-Referring to Dr. J. M. Fortescue-Brickdale's letter in your issue of to-day, in which your correspondent alludes to certain cases of rapid death following puncture of the lung, may I point out that there can be no greater risk of such an unusual calamity occurring after lung puncture than after any negative pleural puncture? In my article on Pleurisy in "Allbutt's System" I have dealt with these cases, and I have there pointed out that in all operations, however trivial, there is the possible contingency that the patient may die suddenly. And considering the great frequency with which a negative paracentesis thoracis is performed, it can scarcely be said that this contingency is more than the rarest of events.

Dr. Christian Simpson refers to the suggested treatment of chronic pneumonia by puncture of the lung. With treatment, however, my article did not deal, but with diagnosis. I therefore made no reference to Dr. Macalister's paper. ought, however, to have referred to an important article which appeared in The Practitioner for May, 1908, by Dr. J. C. Briscoe and Mr. E. U. Williams, on "The Treatment of Pulmonary Affections by the Inoculation of Vaccines," for in this article the authors draw attention to the information which may be gained from puncturing the lung in unresolved pneumonias. This I believe to be the first general reference to the method. My earlier communication in January, 1907, only related one specific instance of diagnostic lung puncture.

Since my article was sent to THE LANCET I have read the report of a communication made by my colleague Dr. W. H.

Willcox to the Belfast meeting of the British Medical Association on the Vaccine Treatment of Pneumonia. In this paper Dr. Willcox also makes a reference to lung puncture for purposes of diagnosis, and suggests the injection of a little sterile broth into the lung before withdrawal of the lung juice.

I am, Sir, yours faithfully,

Harley-street, W., Nov. 13th, 1909. THOMAS J. HORDER.

APPENDICITIS WITH HÆMATURIA.

To the Editor of THE LANCET.

SIR,—Your notice of this condition in THE LANCET of Nov. 6th, and the subsequent letter of Mr. W. B. Cosens in last week's issue, have interested me considerably, as the association of hæmaturia with appendicitis has been noted by me on several occasions, and, indeed, I have referred to its possibility in discussing the diagnosis of appendicitis in the fifth edition of Rose and Carless's "Manual of Surgery" issued in 1905. I am able to call to mind two patients who were lying in adjacent beds in hospital suffering from appendicitis who both had developed hæmaturia; one was a lad with a recent attack, the other a man who had sustained many attacks and whose appendix was enclosed in a dense mass of adhesions which on operation rendered its removal impossible. believe the source of the trouble is usually to be attributed to the fact that in these cases the appendix is adherent to the posterior abdominal wall over the line of the ureter, and I attribute the hæmaturia to a ureteral source and not to the kidney. In support of this idea I might mention a case which occurred to me some years back. I was called one evening to see an adult woman who was suffering from the most typical and intense renal colic. There had been a previous history of pain on the right side, which might have been of renal, biliary, or appen-dicular origin. For this she was treated, and the passage of some gravel seemed to alleviate the symptoms.
The attack therefore seemed probably due to the impaction of a calculus in the ureter, but the most careful investigation was made with a view to inclusion or exclusion of the appendix as the source of the trouble. Radiography was not existent at that time, and finally I cut down on the kidney to find a healthy organ with no sign of calculous disease and a pervious normal ureter. The pain continued subsequently and the patient died a week later from perforation of an appendix abscess, the appendix being located in the back of the abdomen and just hanging down over the pelvic brim in the situation of the ureter.

I am, Sir, yours faithfully,

Upper Wimpole-street, W., Nov. 16th, 1909. ALBERT CARLESS.

THE INFLUENCE OF MIND AS A THERA-PEUTIC AGENT.

To the Editor of THE LANCET.

SIR,—I have read with interest your special article on the above subject in THE LANCET of Nov. 6th, reporting Dr. Claye Shaw's address and the subsequent discussion. I was also present at the Harveian Society when the address was given and the discussion took place. The address itself was comprehensive, philosophical, and suggestive of many trains of thought which might have been developed. The discussion contained little philosophy, if I may express myself so without offence, but was certainly very "practical." That is to say, it sufficiently demonstrated the fact that some practitioners had found that, by soothing some nervous patients with and without a certain amount of manual mystery, annoying and painful symptoms had in some cases been relieved and bad habits in some instances corrected.

The thesis, however, that the mind has a therapeutic influence under certain circumstances scarcely required a full-dress debate for the establishment of a fact so commonly observed and, I had thought, so generally admitted. For, surely, the acknowledged fact that emotional disturbances have a morbific influence involves as a corollary that the removal of emotional disturbance has a therapeutic influence. It was generally agreed that suggestion was of little value in the treatment of insane patients. But it was not pointed out that the supervention of insanity might itself be on occasion a therapeutic

agent, although the induction of such a condition by suggestion, were it possible, would scarcely be proposed as a beneficent measure! For example, a case was brought to my notice some years ago in which a lady suffering from heart disease and subjected to much domestic unhappiness lost compensation, had progressive cardiac failure, became dropsical, and was at the point of death. At this stage she lost her reason and became oblivious to her sorrow, soon afterwards recovering cardiac force, when all the evidences of her circulatory failure disappeared. The disturbing mental factor had been tragically eliminated and some of its consequences vanished. But the "sweet oblivious antidote" was in this was in this case obtained at terrible cost. The tragedy, however, some hypnotists would say, might have been avoided. For the 'rooted sorrow" of an unfaithful husband might have been plucked from the poor lady's memory and left her heartwhole, smiling on Lothario. I understand that amnesia may be permanently limited by suggestion. Surely a most beneficent power in a world of regrettable incidents, even though one live thereafter in a hypnotic and hypothetical

Reference was from time to time made in the discussion to the prejudice entertained by the profession against the suggestive or hypnotic treatment of disease. I confess, Sir, that I number myself with those who regard this prejudice as altogether wholesome, and trust I may still regard myself as not singular. There are doubtless a large number of neurotic persons of somewhat unstable mental equilibrium whose stability may in addition have been rendered still more unsteady by drugs, drunkenness, or excess of other kinds, and who may thus become, for the time at all events, incapable of listening to and being influenced by reason. Where emotions are concerned reason is not always in the ascendant. If such persons, under the spell of the stronger personality of the suggester—a factor to which some importance appeared to be attributed—are capable of being restored to greater equanimity and good conduct, I presume no one can offer any objection to the employment of such beneficent suggestions, whatever form they may take, and whether induced by means of the hand of the operator laid on the pit of the stomach, as one of the speakers said was his wont, or without any such manœuvre.

But, Sir, there are many cases, even among the unstable, which benefit by the plain if sympathetic inculcation of common sense, the inspiration of righteous conduct, and, above all, of courage to face and to accept whatever betide:

"Felix qui potuit rerum cognoscere causas ; Atque metus omnes, et inexorabile fatum Subjecit pedibus, strepitumque Acherontis avari !"

Some years ago I had occasion to see a lady who suffered from time to time from severe fits of a hystero-epileptic character for which I could do little until I discovered that the underlying cause of her disturbance was the sufficient fact that she loved one man and had been persuaded to contract what was regarded as an advantageous marriage with another. I then pointed out to her the alternatives to accepting the situation with resignation as an honourable woman, and was struck by her telling me, ten years later, that she had never had a fit since the conversation which I held with her, when her position and duty became more clear to her.

"Whether 'tis nobler in the mind to suffer The slings and arrows of outrageous fortune, Or to take arms against a sea of troubles And by opposing end them,"

is a quandary in which the patient often finds himself, and not an unhopeful mood for the physician to find him in, provided he can induce him, according as his condition is incurable or curable, to do the one or the other with open-eyed courage and a full appreciation of the circumstances. He may then be placed in the way to establish that equanimity or insouciance which brings in its train, sometimes slowly, but often surely, quietude, normal sleep, refreshment, and in the case of functional disorder frequently "cure," while in the case of incurable disease he is thus placed in as favourable a position as possible; and, if in pain, he may gain ease by that which produces sleep, not hypnosis. But it is by the straightforward exercise of sympathy, common-sense, reason, and knowledge that we can best foster such recuperation, aided, it may be, in the case of those addicted to drugs or drunkenness, by a period of self-imposed incarceration under circumstances in which the exercise of a besetting propensity

is difficult, and this without a lunatic conception of what may be a beverage of extremely good vintage, or at the expense of the reputation of a very useful drug. That in these days of specialism the fostering of health-giving mental impulses should be erected into a speciality is not surprising, but I would submit that such specialisation is quite uncalled for, as some who took part in the debate on Dr. Claye Shaw's address fully recognised.

In some cases, I imagine, not even a physician is necessary, and perhaps, after a preliminary examination by a competent medical man, a certain number of cases might be relegated to the "Christian Scientists" for treatment as a change from the once more popular nursing homes for neurasthenics. But your leading article in THE LANCET of Nov. 6th sufficiently indicates that a preliminary consultation with the faculty should take place before the patient is placed, as Mr. Stephen Paget seems to suggest he might in some instances be, on the list for Christian Scientist "treatment," if the patient have a bias towards that mode of therapeutic effort or consolation. So much might perhaps in the present day be conceded to poor souls shaken for the time in a steadying faith by that too iconoclastic materialism preached so blatantly by some aggressive physicists of the nineteenth century, whose "cocksureness" the opening twentieth the opening twentieth century is inclined to regard as somewhat premature and which it will probably, as it grows older, be glad to forget, like Huxley's "Bathybion Haeckeli" on the strength of which scientific error Strauss died an atheist.

In his broad consideration of the whole subject, one the importance of which I in no way desire to depreciate and myself emphasised in an address on the Place of Metaphysics in Medicine, on which you at the time commented in The Lancet, Dr. Claye Shaw has touched, on the one hand, on the foundations of religious faith and, on the other, on the practical application of suggested belief in the treatment of disease. Much as one is tempted to follow him into the former sphere the pages of a medical journal are scarcely suited for discussing the questions involved. I, therefore, refrain from doing so, merely remarking that the foundations of religious belief are nothing if not historical, and that the Way and the Life are alike uninteresting if divorced from the simple and unvarnished Truth, whether suggested or entertained. imagine the same criterion should determine what is and what is not permissible in therapeutic methods. The whole purpose of this letter is to question alike the desirability of, or necessity for, the employment of make-believe, or placebo, in the treatment of disease under any circumstances, except, perhaps, in our dealings with some lunatics and the obsessed by a notion, when the physician may be compelled, distastefully to himself, to use argument on the mental plane of the afflicted or adopt subterfuge to effect goodin other words, in the portico of the lunatic asylum. Finally some remarks were made in the discussion on the suggestive nature of the action of drugs. There have been, and no doubt are, some drugs in use the direct potency of which for therapeutic purposes is not great. But, surely, it is not necessary to insist that a large proportion of the most useful drugs are as potent for evil as for good unless used with a skill which it is open to all to acquire, and in securing the beneficial results of which the mental processes of the patient have little share.

I had written so much of these remarks when THE LANCET of Nov. 13th reached me, in which I observe your leading article on the Therapeutics of Suggestion and Dr. Mercier's paper on Brain and Mind, both of which bear upon the subject. I am glad to read in the former that a preference appears to be expressed for that better way in which "no part of the patient's personality is suppressed or placed in abeyance, but an appeal is made to the crowning function of all the functions—namely, the mind by careful methods of rational persuasion" (p. 1447). For such I have contended in this letter and confess that, to my mind, to support and form the character of a humanity, which has to face the many insoluble problems of an infinite universe as well as the vicissitudes of life in health and in disease, more is to be gained even from the hopeless but brave attitude of the Stoic who exclaimed, "Thou canst not rob me of death!" than from the position occupied by those who are lulled into peace by any species of make-believe, and under such circumstances necessarily live with some part of their being in abeyance, notwithstanding argument to the contrary.

But were we to accept Dr. Mercier's conception of the relation of mind to brain possibly there might be less objection to suggestive therapeutics. So far as I can gather his meaning, the mind as an "epiphenomenon" has ceased to have material connexion with the cells from which it sprang, and the rearrangement of its processes by hypnosis would only be to play among immaterial atoms. I do not know in how far such a view will be acceptable to the majority of present.day physiologists and psychologists. But it is because I believe now, as I did when I delivered my lectures on the Relation of the Nervous System to Disease and Disorder in the Viscera in Edinburgh in 1898, "whether the registration of memory be in the cell or merely rendered possible through the instrumentality of the cell that it would be impossible without the cell, and that the passage of impressions through the cell influences the organic conditions of the latter" (p. 49), that I conceive there is objection to methods which tend to cause us to look on matters not as they are but as they are not. Hypnotists tell us that this may be brought about without detriment to the mental organism. Can it occur without change in the mental organ? And if not, is such change desirable or safe?

Sir, it is because I venture to question this that I look upon the therapeutic trilogy of "Christian Science," Hypnotism, and the isolation Nursing Home as in the same category, and of these upon hypnotism as the most objectionable. The "Christian Scientist," so to speak, hypnotises himself or attempts to do so, the Somnambule is hypnotised, the Segreyé, to coin a convenient term if it is not already in use, is advised to regard vacuity and frequently to overeat himself, which latter has the merit at times of recalling him to earth by dyspepsia if by no other means. The full influence for good of the mind upon the body may, however, I maintain, be procured by fostering the courageous outlook of the open-eyed whole man upon all that can befall him and by the aid of agencies which import no spurious or supposititious conditions. But the task of those who take this view is not rendered easier by the creation of therapeutic sandheaps such as those discussed, in which distressed humanity is invited to bury its head like the ostrich, and thus to escape at least the vision of danger.

I am, Sir, yours faithfully,

Nov. 14th, 1909. ALEXANDER MORISON, M.D., F.R.C.P.

DARWINISM AND MEDICINE.

To the Editor of THE LANCET.

SIR,—In his recent Bradshaw lecture Professor J. A. Lindsay, referring to the changes which are taking place in the jaws and teeth of civilised man, says: "Apparently the diminution in the size of the jaws has outrun the diminution in the size or number of the teeth, and hence the overcrowded state of the jaws which we know to be so common." May I say that I have not been able to obtain any evidence in support of such a conclusion? In the absence of malformation of the jaws (e.g., from adenoids) overcrowding of the teeth is always, in my experience, due, not to any racial diminution in the size of the jaws, but to arrested development of the jaws from disuse in the individual. In other words, provided the young human is brought up on food which demands a due exercise of the muscles of mastication overcrowding (with the exception mentioned) never occurs.

And now I would like to refer to a subject which is of the utmost importance to biologists. Professor Lindsay very truly remarks that "man is not subject to the unrestrained operation of natural selection." He does not, I am interested to note, maintain that this process has ceased to operate on civilised man. Yet this is what many leading biologists are now doing. So careful a thinker as Professor Arthur Thomson in his philosophical Bross lectures (1907) writes: "We can never resume the yoke of natural selection which even early man began to wriggle out of, which man has been more and more effectively throwing off as the ages have passed." In support of this view he proceeds to cite Professor Ray Lankester: "The mental qualities which have developed in man have to a large extent, if not entirely, cut him off from the general operation of that process of natural selection and survival of the fittest which up to their appearance has been the law of the living world. Nature's

¹ The Bible of Nature. Charles Scribner's Sons, New York, 1908.

inexorable discipline of death to those who do not rise to her standard—survival and parentage for those alone who do-has been from the earliest times more and more definitely resisted by the will of Man;" and this authority goes on to refer to man's "rebellion against natural selection" and, again, to his emancipation from "the destructive methods of natural selection.

Is it not remarkable that two such eminent biologists should be so anxious to rebel against natural selection and to repudiate its aid? Is it not strange that they should wish to disown the golden ladder by which man has mounted from the beast and without which he must lose all hope of further ascent? For if there is one fact which stands out more prominently than another in connexion with organic evolution it is (whatever the mutationists may say to the contrary) that natural selection is indispensable to that evolution.

Fortunately there are no grounds for assuming that natural selection is ceasing to operate on man. In point of fact it is essential to the continuance of species, for without its operation it would be impossible for these to become adapted to those never-ending changes in environment which are inevitable in this world of mutation. Certain it is that without natural selection man could not have attained his present civilisation. The conditions of civilisation have for thousands of years been entailing changes in his environment, changes both material and psychic, and during all these years man has been undergoing adaptation to these changes under the beneficent sway of natural selection. This conclusion follows from the non-inheritability of acquired characters.

The important part played by natural selection in the case of man was worked out by me 20 years ago in my work on "The Causation of Disease," which was, I believe, the first systematic attempt to bring pathology into line with Darwinism. It is often wrongfully assumed that injurious conditions necessarily lead to racial degeneration, whereas, as a matter of fact, their effect is rather to start a process of adaptive evolution. In the work referred to I pointed out that whenever a community is subjected to a nocuous but not "necessarily fatal" influence (i.e., one which does not inevitably lead to total destruction) the process of racial-I use the word as opposed to individual—adaptation is at once started, and I emphasised the fact that all deaths from non-traumatic causes occurring before the end of reproductive life are instances of natural selection. This being so, we have only to reckon up the number of such deaths in any community in order to estimate the extent to which that community is being influenced by natural selection.

I have said that civilisation has brought with it many conditions which did not obtain in the case of man's primitive ancestors. These include conditions which we term unhygienic. It has to be remembered, however, that for Nature they are simply modifications in the environment, and she at once sets to work to secure a racial adaptation to them by natural selection, with the result that what was un-healthy yesterday may be healthy to-day. This important truth seems to have escaped the biologists, all too heedless of the teachings of pathology. Consider the enormous mortality of slum-bred children. What is this but natural selection working in tragic earnest? What is it but an effort of nature to evolve a slum race—a race that is adapted to the special dietetic and atmospheric conditions of the slums? And who can doubt that far from leading to racial degeneration its effect is rather to widen the range of man's resistance to environmental influences?

Just because man is not undergoing any obtrusive change in physical conformation it is assumed that he has come to a standstill. The fact is forgotten that a hidden invisible change may be quite as important as a gross organic one. Biologically speaking, the acquisition of subtle invisible mechanisms to cope with an invisible microscopic host is every whit as important as the development of horns or tusks to fight against a visible enemy.

Had I the time and space I might add many instances to the one I have given of the operation of natural selection on civilised man. I might instance the fact that every death from alcoholism is the elimination of one who is unfit as regards alcohol, and the further fact that drunkenness, far from injuring our race, is really purging it of undesirables.

I might further show that this same influence is still subtly

at work on the psychic side of man. I must, however, rest content with having emphasised the truth that man's destiny on earth is intimately bound up with the inexorable operation of natural selection—that process at once cruel, merciful, tragic, sublime.

I am, Sir, yours faithfully,

Wimpole-street, Nov. 7th, 1909.

HARRY CAMPBELL.

THE TREATMENT OF CHRONIC ULCER OF THE LEG.

To the Editor of THE LANCET.

SIR,—The views of Mr. Willmott Evans as to the frequency of a gummatous origin for these ulcers will doubtless be fully discussed by surgeons. My attention is confined to his remarks on the dry treatment of the ordinary ulcer. The absence of any reference to the "open" or "atmospheric" method would seem to imply that this plan does not occupy any prominent place in surgical teaching and practice. A few years ago, whilst studying the effects of the method of "Interrupted Circulation" in its application to chronic ulcers, I repeatedly noticed that after a period of most satisfactory and comparatively rapid progress the treatment lost some of its efficacy. It occurred to me to try the effect of keeping the ulcer continuously exposed to the air without any dressing. A single layer of gauze was spread over it as a protection, but without any contact with the granulations, whilst the remainder of the limb was kept under cover. The result was striking. The final closure of the small ulcer which had refused to heal was brought about within 24 hours. This method may probably have been applied before, though it was novel to myself. It is perhaps worthy of a more extensive trial by others.

I am, Sir, yours faithfully, WM. EWART.

Upper Brook-street, W., Nov. 15th, 1909.

To the Editor of THE LANCET.

SIR, -Mr. Willmott Evans, in his article in THE LANCET of Nov. 13th on the Treatment of Chronic Ulcer of the Leg, gives his opinion that more than 90 per cent of these cases are syphilitic in origin. Later on he remarks that the most important point in diagnosing chronic syphilitic ulcers of the leg is multiplicity. I agree with him that over 90 per cent. of multiple chronic ulcers of the leg are syphilitic, but I think it will be agreed that the majority of chronic ulcers of the leg are single, not multiple. Does Mr. Willmott Evans hold that 90 per cent. of single chronic ulcers of the leg are syphilitic? If so, I think he is considerably exaggerating the percentage. iderably exaggerating the first faithfully,

I am, Sir, yours faithfully,

C. F. Marshall.

Euston-road, N.W., Nov. 15th, 1909.

THE INFLUENCE OF DIET ON THE THYROID GLAND.

le the Editor of THE LANCET.

SIR,-I welcome the opportunity afforded me by Dr. Ernest Young's interesting letter in your issue of Nov. 13th of further referring to a point of some interest and importance in relation to diet and the thyroid gland. The salient feature in Dr. Young's letter is in the following passage: "While admitting without question that a diet which contains little protein may produce favourable results, I must confess to some scepticism as to the result being due to the influence of the diet on the thyroid gland. If this were so, then a diet consisting entirely, or almost entirely, of protein would, if I understand Dr. Watson rightly, have a converse effect upon the gland and so aggravate the condition, which is not so," and he invites me to explain the paradox. May I in the first place point out that Dr. Young has not rightly understood my position. This is no fault of his, however, but is due to the restriction of my original letter. The apparent paradox referred to by Dr. Young had not escaped my observation. On the contrary, for some years past I have made a special study of many cases of gouty disorders under my own care, in which I found it advisable to modify the diet in the direction of diminishing the carbohydrates and increasing the protein elements in the food. Dr. Young puts forward as an explanation of why a diet

approximating to a purin-free diet, and a common form of dist such as the exclusive meat diet are each capable of producing good results in gout, that both, if carefully regulated to the digestive capacity of the individual, tend to eliminate the chief causative factor—viz., auto-toxæmia. I am in complete accord with Dr. Young in thinking that intestinal derangement is the primary factor in gout. This view is one to which I have sought to draw special attention for many years past. At the same time I cannot agree with him in regarding it as in any way an explanation. When it is analysed it explains nothing. What we have to consider is the varying liability to certain types of intestinal derangement which we see as clinicians, and to ascertain so far as possible on what these depend.

My explanation may or may not be the right one; it is at any rate based on new facts obtained from experimental investigation. Briefly stated, my position is as follows. We have in gout a disorder of protein metabolism; the thyroid gland has long been known to be specially concerned in the metabolism of protein foods; my observations have shown that the structure and function of this gland are modified by diet, and specially that meat is primarily a stimulant and later a depressant of its activity; my clinical experience of gouty disorders is in harmony with that of those who find that in some cases a lacto-vegetarian diet and in other cases a diet rich in proteins is of special value in treatment; and I believe that the favourable effects of the dietetic treatment in both instances are due to a large extent to the influence of the diet on the thyroid gland. In the case of the lacto-vegetarian diet the strain on the gland is diminished by a marked reduction in the amount of proteins in the food; in the case of the rich protein diet the normal digestion and metabolism of the proteins are promoted by the fact that the farinaceous and other foods are restricted, and under these circumstances the stimulating effects of the diet on the thyroid gland assert themeclves with advantage to the patient.

I am, Sir, yours faithfully,

CHALMERS WATSON. Edinburgh, Nov. 14th, 1909.

THE TREATMENT OF UTERINE FIBROIDS BY X RAYS.

To the Editor of THE LANCET.

SIR,—I think the following case should prove of interest, showing, as it does, that fibroid of the uterus may be successfully treated by being subjected to the influence of X ravs.

A woman, aged 37 years, married, one child, came to me with the following history. Two years previously she had been curetted for the relief of menorrhagia due to a fibroid, but the relief obtained was only of a temporary nature. A year ago she again went into hospital with a view to operation. She was told, however, that the only cure would involve a removal of the uterus, and, failing that, the next best thing would be to curette again, the latter course being eventually carried out. I saw her for the first time about four months after she had been curetted and the monthly hæmorrhages were again becoming excessive. tried the usual routine treatment of ergot, hot douches, and rest, but with only moderate success, until finally her condition grew so grave that it became necessary to recommend operation. Before doing so, however, I determined to try the effect of treatment by exposure to X rays, and Dr. W. Ironside Bruce very kindly consented to carry it out. The fibroid at this time was of the size of a pigeon's egg and was situated in the anterior wall of the cervical canal. In view of the position of the tumour irradiation was carried out with the patient in the knee-elbow position, the rays being directed from below upwards in the axis of the pelvic brim; a filter composed of several lavers of felt was placed between the skin and the tube, thereby all risk of X ray dermatitis was obviated. Each irradiation lasted ten minutes, and three sittings were given in the week. The total time of irradiation amounted to 70 minutes in all, and the current used was from an 8-inch coil taking a primary current of 100 v. 5 amps. The tube was one with a water-cooled anode having an equivalent spark gap of from 4 to 6 inches. In short, the amount of current passed through the tube was just as much as could be passed through it for ten minutes without rendering it too soft to be

of any use. After the first sitting the patient complained of aching pain in the back, which lasted until after the fourth exposure. The menstrual period, which occurred about this time, was accompanied by severe loss, but she found that the discomfort which she usually experienced two days before the onset was very much improved.

At the conclusion of the sittings Dr. Ironside Bruce and myself again examined her. He could find no trace of growth and thought the cervix was normal. I thought I could still detect an ill defined thickening in the anterior cervical wall on the site where the fibroid had been. The day after the examination her period occurred at its proper time, and she noticed, firstly, that it began without any warning of pains or discomfort; secondly, that it lasted only three days, and that there were no clots or sudden gushes so noticeable on previous occasions; and thirdly, that on its cessation she felt perfectly well and fit to carry on her household duties instead of feeling a wreck for a day or so as she had always done before. Only 12 towels were used instead of the usual 27 or 30. Previously to irradiation the patient had been much troubled by a leucorrheal discharge; she tells me now that this is scarcely noticeable. - I am, Sir, yours faithfully

URQUHART BARTHOLOMEW, M.R.C.S. Eng., L.R.C.P. Lond., L.M.S.S.A. Lond.

Green-street, W.C., Oct. 30th, 1909.

THE NATIONAL ASSOCIATION FOR THE FEEBLE-MINDED.

To the Editor of THE LANCET.

SIR,-Thank you very much for the notice you have inserted in THE LANCET re the annual report and conference, but you have omitted to make any mention of the Princess Christian's Farm Colony which we have just opened near Tonbridge, a beautiful property of 171 acres. We hope that on this colony houses will be erected for men and women, boys and girls, and also a school for children; although only half the farm is occupied by us at present, we can already house 30 boys, and are making immediate arrangements for the alteration of the present buildings so that they will accommodate another 20; it is hoped also that a home for girls will very shortly be taken in hand.

I am, Sir, yours faithfully, A. H. P. KIRBY, Secretary. Denison Heuse, 296, Vauxhall Bridge-road, S.W., Nov. 8th, 1909.

THE NATURE OF OSTEITIS DEFORMANS (PAGET) AND ITS RELATION TO MALIGNANT NEOPLASIA.

To the Editor of THE LANCET.

SIR,-In endeavouring to determine the natural relations of a novel morbid condition for which a definite place has not yet been found in our nosological cadres a great deal depends on the standpoint from which the pathologist surveys the scene.

Having for many years taken special interest in "osteitis deformans" (Paget), chiefly with the object of determining its inter-relations with malignant neoplasia, it will perhaps interest your readers to know the conclusion at which I have arrived, after having studied the malady from this somewhat unusual standpoint. It will be remembered that three of Sir J. Paget's five cases were complicated by malignant neoplasia, and so many other examples of this concomitancy have since been reported that the impression has arisen that this form of bone disease is often complicated by malignant tumour formation. This being so, I was much surprised on going over the records of over a thousand consecutive cases of primary malignant tumours to find that not a single one of them was complicated with "osteitis deformans." In endeavouring to unravel this puzzle I was led to pay particular attention to the precise seats and nature of the tumour lesions in cases of this concomitancy, and it then became manifest that these affected chiefly the skeletal bones, and that they were generally described as being of "sarcomatous" nature, many of them having a myeloid structure.

From these and other converging indications of like import

I became convinced that the neoplastic disease not uncommonly associated with "osteitis deformans" is something quite distinct from the ordinary carcinoma and sarcoma. Further examination of the ensemble of the subject in this light convinced me that the real affinity of the concomitant tumour disease in these cases is with "multiple myeloma," and I finally concluded that "osteitis deformans" is the outcome of a bone-marrow disease, akin to "multiple myeloma" in its minimal form, whether associated with albuminosuria

In conclusion, I think it would be as well if future investigators of "osteitis deformans" were to conduct researches along the lines I have indicated, as a new vista would thus I am, Sir, yours faithfully,
W. ROGER WILLIAMS. be opened up.

Nov. 13th, 1909.

VOLUNTARY WITHDRAWAL FROM THE MEDICAL REGISTER.

To the Editor of THE LANCET.

SIR,—During the last ten years or so a certain number of applications have been made to the General Medical Council by medical men for permission to withdraw their names from the Register. In all cases, so far as I am aware, the requests have been granted, and the matter has attracted little or no general attention, despite the fact that each recurring instance has necessitated the devising of a special fashion of dealing with it. Neither the making nor the granting of such applications was anticipated by the framers of the Medical Act of 1857, so the Standing Orders of the Council likewise contain no reference to them. rise of this practice led last year to the appointment of a committee of the General Medical Council to consider the best procedure for its regulation, and the committee's report was received at the beginning of the last session of the Council. The recommendations in this report, so far as they have been made public, consist mainly of a rule drafted by the legal adviser to the Council and submitted for inclusion among the general Standing Orders of the Council. This order appeared in the record of the proceedings of the Council published in THE LANCET of May 29th (p. 1572) and runs as follows: "Every application by a registered medical practitioner or dentist for the removal of his name at his own request from the Medical or Dentists Register shall be accompanied by a statutory declaration to be made by the applicant, that he is not aware of any proceedings or of any reason for the institution of any proceedings which might result in establishing cause for the erasure of his name from the Medical or Dentists Register without his consent, or for depriving him without his consent of any qualification or licence entitling him to be registered.' The report was received and entered on the minutes, and there the matter presumably will rest until next session. Meantime, however, it seems desirable to direct attention to certain sides of an interesting question, and to consider the motives which may lead a medical practitioner to seek to have his name erased from the Register.

The reason of the existence of the Medical Register is to enable persons in need of medical assistance to distinguish between qualified and unqualified practitioners. anyone, having once obtained a place on the Register, want to be erased from it? Churchill's excellent Medical Directory and the handy smaller directory published by Nisbet are not in the same position as the Medical Register, and one can see reasons why a medical man not in practice might desire to remove his name from these books. They give much fuller and sometimes more accurate information about medical men than appears in the official list, although this is not in the least the fault of the Registrar responsible for the compilation of the latter. The directories are concerned with more than bare registration, and even in matters of titles may be more accurate than the Register, for the additional fee demanded for the registration of qualifications subsequent to those which have placed a name upon the Register leads a good many medical men to keep that publication in ignorance of their complete professional status, whereas the medical directories are regularly informed on all such matters by the owners of the included names. The result is that a man who has retired from practice, or has never been in practice, may find it inconvenient to have his name in the medical directories. He may

not wish to be known by his neighbours as a medical man, since it may lead to his being worried for advice which he is not prepared to give, or he may not wish to have his letter-box filled with circulars and advertisements, as are those of most practitioners whose addresses appear in Churchill's Medical Directory

But no such reasons apply to inclusion in the Medical Register, a volume which conveys no information to any one beyond the fact that the bearers of certain names. who live at certain addresses, have obtained qualifications which legally entitle them to practise medicine and surgery if they think fit. It is not easy, then, to see why any medical man having once been on the Medical Register should desire to conceal the fact. He may not want to secure the advantages of being on the Register, but he can dispense with them by discontinuing practice. The advantages are not really great. A man on the Register can sign death certificates, can hold appointments established under authority of an Act of Parliament, and can sue in courts of law for fees due for medical attendance given and medicaments supplied. But in the present state of the law a man not on the Register is perfectly free to attend as many patients as he pleases, so long as he does not pretend to registration; he could even hold appointment on the staff of any voluntary hospital, whose managers might be sufficiently ill-advised to accept his medical services. He cannot sue for fees; but therein he is no worse off than men of the consultant class, whom custom forbids to resort to the law in search of payment for services rendered. He cannot sign death certificates, but there are many paths of medicine in which the need of them rarely arises. The members of the medical profession in the Cavendish-square district do not sign collectively as many death certificates in a year as are given from a small general hospital. From all this it appears to follow that the disabilities attendant upon voluntary withdrawal from the Register are not great, but neither are the inconveniences of remaining on the Register even when an intention not to practise makes such privileges as pertain to registration quite valueless.

I do not wish to reflect in the slightest degree on any man who up to the present has withdrawn his name from the Register; there may be perfectly good reasons for adopting that course in some instances. But consideration of the facts stated above make it quite clear that in other instances the voluntary withdrawal from the Register may mean merely an unhealthy dislike to the jurisdiction of the General Medical Council. To practise medicine without being on the Medical Register is perfectly easy—all that is needful to render the unregistered man safe is that he should not pretend to registration—and to conduct such practice without fear of the disciplinary interference of the General Medical Council might be very convenient.

I am, Sir, yours faithfully, DISCIPLINE.

ON RADIUM IN THE TREATMENT CANCER AND SOME ASSOCIATED CONDITIONS.

To the Editor of THE LANCET.

SIR,-Having considered from a bird's-eye point of view Mr. H. T. Butlin's article published in your issue of Nov. 13th, in the first place my attention is attracted by the note that a patient "had to pay 2000 francs (£80) for his ten days' treatment in Paris.'

This reminds me that over 30 years ago I heard a very wealthy physician casually remark one day that a guinea was a very large sum of money. It is useful to indulge the idea that such is the case, because in the hands of misers the solitary guinea might in time to come increase to millions. And so with regard to cancer. Surely Sir William Gull was astute when, in 1874, he remarked before the Pathological Society that "a cell is an organism of enormous extent; it is only our eyes being so feeble that makes us look upon it as a small indifferent thing. It may be infinitely more delicate than those great things which we see under the microscope, even though it be the fifteth of an inch in diameter." The whole tenor of Mr. Butlin's article and general views leads me to think that he appreciates this. He will not hesitate to pronounce a growth

of very small size to be a cancer and knows that the disease may originate from a solitary leucoplakic spot. Then as to treatment, the reported cases seem to show that the employment of radium has not proved curative in cases of cancer of large dimensions, say the size of a small apple and upwards, but when open to easy inspection cancer ought to be diagnosed often when no larger than a pea, and the assistance of the microscope must not be under-estimated. Whilst therefore I have not gathered that radium has yet proved of great service in the treatment of advanced cancer, I venture to think that it may be claimed to have cured already many cases in which the diagnosis was clear, and though the growths were small yet had they been allowed to proceed untreated they would certainly have followed the usual natural history and destroyed life.

It would therefore seem that the use of radium may be relied upon in the treatment of cases of small cancer, and the use of the knife perhaps be rationally superseded. To expect that radium may cure a cancer the size of a cocoanut is perhaps expecting at present rather too much. Having said what I have, I cannot conclude this letter without remarking, with your kind permission, that in many small cases where radium might be successful perhaps the use of a solution of bichromate of potash might answer equally well. I also believe that a small spot of leucoplakia, which if untreated might develop into cancer, may be successfully

cured by painting with carbolic acid.

I am, Sir, yours faithfully, CHARLES E. JENNINGS.

Great Somerford, Wilte, Nov. 15th, 1909.

MEDICAL EXAMINATION OF TERRITORIAL RECRUITS.

To the Editor of THE LANCET.

SIR,-It is quite clear from the question addressed in the House of Commons to the Secretary for War by Mr. Fletcher regarding the pay of officers of the Royal Army Medical Corps (Territorial Force), that the medical department of that branch of the service is in a very unsatisfactory state. A medical officer assures me that his expenses at camp this year, arising from locum-tenent's fees and board, professional losses through absence, mess expenses, tips, and disallowed claims, amounted to £36 15s. Against this there is pay £18, leaving a balance to the bad of £18 15s. As regards this officer's kit, his very moderate claim for out-of-pocket expenses is not settled yet, and in addition there are about £20 due to him for the examination of recruits.

As one reads Mr. Haldane's carefully written answer to Mr. Fletcher's question one cannot help feeling that the Secretary for War is actually making an ad miscricordiam appeal for release from a monetary obligation. The answer is saturated with mendicity. I do not hesitate to say that if this officer's claim be not allowed ne will be fully justified in regarding his services as having been extorted under false pretences and in shaping his action accordingly. is action accordings.
I am, Sir, yours faithfully,
BETA,

Nov. 15th, 1909.

SMALL-POX IN TURKEY.—An alarming epidemic of small-pox is raging at present in different towns of the Turkish provinces. It seems that this epidemic began in Smyrna, where many victims are dying daily. From the accounts that have reached Constantinople, it is evident that the small-pox cases are of the hæmorrhagic type. A family who to escape the epidemic removed to heres carried the contagion there, with the result that a number of people died from small-pox. News comes from Salonika and Adrianople that an outbreak of the epidemic is raging there also. It seems that the authorities are inactive and are taking no preventive measures. Adrianople is only just rid of an epidemic of scarlet fever. The sanitary conditions of that town are anything but satisfactory. All this, of course, contributes to spread the epidemic of small-pox. In the above-named towns the schools have been closed and the hospitals are overfilled with patients. An outcry of complaint is being raised against the authorities of the large Jewish school of Adrianople, which has more than 500 children, and which did not close its doors in time. Help is

being asked urgently from Constantinople.

THE HOUSING PROBLEM AT BUDAPEST.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

WHAT THE CONGRESS DID NOT SEE IN 1894.—BUDAPEST AS THE MOST OVERCROWDED CITY IN EUROPE.—
MODERN SANITARY IMPROVEMENTS AND A REDUCED DEATH-RATE.—CELLAR DWELLINGS.—NEGLECT OF THE HOUSING PROBLEM.—FAILURE OF PRIVATE ENTER-PRISE.—FEEBLE EFFORTS OF THE STATE AND THE MUNICIPALITY.

AFTER the Eighth International Congress of Hygiene and Demography which met at Budapest in 1894 I investigated the housing of the poor in the Hungarian capital. During the Congress we had been shown everything that was to the credit of the town, but we were left to find out the dark corners for ourselves. This led me to write some articles entitled, "What the Congress did not See," and to raise the question as to what was the true function of such a Congress. For instance, the next International Congress of Hygiene is to meet in 1910 at Washington. Should the organisers of that Congress endeavour to show their visitors only what may elicit praises of the sanitary progress achieved in the United States? Or should they, on the contrary, profit by the presence of distinguished foreign authorities to show the defects that still exist, and strengthen the home demand for reform by the denunciations the foreign critics would not fail to pronounce? The latter obviously is the least pleasant but the most useful course to pursue. As the condition of affairs in Budapest in 1894 was very bad some strong denunciations were greatly needed. At that time and at the Congress Dr. Bertillon stated that, according to the stati-tics for the year 1891, the proportion of overcrowded houses or lodgings in Paris amounted to 14 per cent., in Berlin and in Vienna to 28 per cent, in Moscow to 31 per cent., and in St. Petersburg to 46 per cent. For Budapest Dr. Bertillon's figures dated back to 1881 and then the over-crowding was 71 per cent. The one excuse is that Budapest claims to be the Chicago of Europe by reason of the rapid increase of its population. From 1801 to 1891 the population increased on an average 37.7 in Lordon, 38 1 in Paris, 53 9 in Vienna. 70.7 in Glasgow, and 90.7 in Budapest per 1000 per annum. Nevertheless, the fact remained that whereas great efforts had been made to build magnificent and palatial houses overlooking broad thoroughfares, little or nothing had been done to provide suitable dwellings for the poorer section of the community. Many Hungarian medical men were most anxious that this cruel neglect should be denounced in the strongest terms, and therefore I visited, photographed, and described some of the homes of the Budapest poor. These articles were translated into Hungarian and led to some stormy debates in the municipal council of Budapest. By one party I was denounced in very strong language, while the other party declared that I had rendered great service in thus bringing home to the population and their representatives how urgent was the need of energetic measures in regard to the housing of the poor. To-day, however, both sides in this controversy have to acknowledge that by such stimulation some improvement has been effected, though it is in regard to housing that Budapest still remains one of the most backward of the large towns of Europe.

An excellent pocket "Medical Guide to Budapest" was issued for the use of the members of the Sixteenth International Medical Congress, edited by Dr. Tibor de Györy. In this is a short chapter on the housing question that fully confirms what I had said 15 years ago. For instance, the lack of cheap dwellings is explained in the following manner :-

The evil dates back to the epoch when Budapest emerged at a bound from comparative littleness into the circle of the great cities. With the regulation of the city the desire to build expensive modern houses found free scope. In place of old small houses in which the poorer classes found cheap dwellings, palaces have arisen whose expensive dats are for the better classes alone.

Thus the rents of tenement dwellings rose higher and higher until the conditions have become almost unbearable. As cheap lodgings cannot possibly be obtained it is necessary

¹ See THE LARCET of Jan. 5th, 1895, p. 55, and Jan. 19th, p. 172,

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to take in, not merely sub-tenants, but even bed tenants, of which the Medical Guide to Budapest says:—

Conditions thus arise which, considered in their sanitary or moral aspects, are alike revolting - conditions which neither the willingness of the authorities to make sacrifices nor the erection of spacious emergency dwellings has, so far, been able to obviate.

To what extent overcrowding prevails may be gathered from the statement that during the last decade there were 9518 rooms occupied by 77,696 tenants. This meant that 10.8 per cent. of the then population of Budapest lived four, or more than four, in a room. For statistical purposes, living four in a room is qualified as overcrowding, though it seems to me there may be very serious overcrowding when only two or three persons live in a room, for it all depends on the size of the room. Thus defined, the proportion of overcrowding during the previous decade amounted to 13.2 per cent. Therefore it is claimed that however bad the situation still remains there has been some improvement. In one respect I am glad to record there has been a considerable amelioration. What impressed me most painfully in 1894 was the great number of cellar dwellings, and these were situated not merely in poor quarters but in some of the very finest streets of the capital. In Magyar-street I found wine-cellars converted into dwellings, places where there was no light whatsoever, and others where the only light admitted came from a small opening on a level with the causeway of the street not two feet high and about three feet broad. In those days the Director of the Statistical Office at Budapest, the well-known demographer, Dr. Körösi, had calculated that human life was on an average shortened from two to three years by living in cellars, and that epidemic diseases were 60 per cent. more frequent in these under-ground places. Yet of the tenement dwellings of Budapest ground places. no less than 5.09 per cent. were mere cellars.

As already observed, it is in the abolition of cellar dwellings that the greatest progress has been achieved. The medical guide-book quoted above states that in 1880 there were 5217 cellar tenements with 31,637 occupants, and states that to-day there are only 1672 such tenements remaining and that they have not more than 8083 occupiers. This shows that some energy has been displayed, but also that the good work is not yet fully accomplished. The necessity of absolutely forbidding anyone to sleep in close contact with the soil is all the greater, as on the Pest side of the Danube this soil is often very foul; it is made up of rubbish thrown down to fill up hollows where water used to stagnate. The late Dr. Joseph Fodor, in his advocacy of sanitary reform, analysed the soil and found that 0.778 per cent. consists of organic matter. The Museum Boulevard, where the Congress of Medicine met, stands on an ancient cemetery, and the Rostély and Terez streets have similar sites

Besides the reduction of the number of cellar dwellings, very great increase has taken place of late years in the construction and in length and number of sewers. At the same time, the quality and amount of the water-supply has likewise been considerably augmented. The drinking water supplied in the year 1874 was estimated at 3560 cubic metres, or 31 litres per day and per head of the population. In 1907 there were consumed 62,079 cubic metres, or 212 litres per day and per head. Then, again, the sanitary services, though still very much undermanned, have been far more energetic of late years. Prophylactic measures against epidemics are imposed with much greater Then many efforts have been made to keep the houses and streets clean and to disinfect when necessary. The supervision of the food-supply, though altogether insufficient, is very much better than it used to be. There is a more general medical supervision, medical aid is more readily forthcoming, and hospital accommodation has been much increased. Thus the deaths from infectious disease, which increased. Thus the deaths from infectious disease, which amounted to 4 67 per annum per 1000 of the population 30 years ago, are now only equal to 1.6 or 1.8 per 1000, while small pox has been almost completely eradicated. all these considerations must be added the fact that while, as a couse pience of immigration from the country, the population of Budapest has greatly increased, the birth-rate has decreased during the last 30 years from 44 or 45 per 1000 per annum to 27 or 28 per 1000. Finally, it must be horne in mind that a large proportion of the inhabitants of Budape-t are not people who spend all their lives there but adults who come to work during the prime of their lives, just

at the time when death is least likely to occur. Therefore, and in spite of the overcrowding of tenements, which still constitutes a great grievance, the general death-rate has greatly decreased of late years. In 1874 it was as high as 42.2 per 1000. Then some sanitary measures were taken into consideration and slight improvements attempted. Ten years later the mortality had fallen to 30.6 per 1000, but in 1886, in consequence of the cholera, it rose to 37.7 per 1000. In 1890 the death-rate was 29.2 per 1000, and it gradually fell to only a little above 20 per 1000.

In dealing with the chief of remaining defects, the overcrowding of dwellings, the authorities at Budapest are not in a worse position than other communities, on the contrary, they have facilities enjoyed by few towns. There is no fixed boundary, no fortifications like the walls of Paris, to prevent expansion. Of far greater importance, there is no land difficulty. At Budapest the land belongs to the town. It is true that during the last 30 years some of this land has been sold by the municipality for absurdly small sums where it has not been given away. But the municipality still holds a great part of the land, and now realises how important it is not to sell or give away so valuable a public asset. In most countries, but in England especially, the great difficulty is to obtain land at sufficiently cheap rates for it to be possible to build tenement houses that could be let out at low rates. At Budapest not only does the municipality already possess a large quantity of land, so that there is no necessity to create a sinking fund to pay off a loan for the purchase of land, but there are also special laws favouring the building of artisans' dwellings. First, an effort was made to encourage private enterprise. Regulations proposed by the municipality were confirmed by a decree issued by the Minister of the Interior in 1892. This by-law exempted small dwelling houses built outside the Great Boulevard, if they had no cellars or any subtenants, from local taxation for 10 years. Further, if any contractor built 60 such houses he would be able to obtain the land from the municipality at a reduced price. Workmen's lodgings generally would be free from local taxation for 15 years if there were no cellars and no subtenants, and after that no local taxation should exceed 10 per cent. of the rateable value. If a new house was built and two-thirds of the house consisted of small lodgings of one or two rooms and no inhabited cellars it would be exempt from taxation for 20 years. Special advantages also are given to building societies.

With all this encouragement it was thought that many private individuals would speculate in the production of workmen's dwellings, and that large firms would also build for the workmen in their employ. The result has been most disappointing. Little or nothing has been attempted by private enterprise, and the State has also been very slow to move. But it became more and more evident that if anything was going to be done the State and the municipality must set the example. The administration of the State railways therefore built small houses on an estate in the outskirts of Budapest where a considerable number of railway servants are comfortably housed. Then there are Government factories at the village of Kispest, about half an hour from Budapest, where the Government has built seven houses with eight tenements in each house and intends to provide for a population of 2000 in all; but this work is going forward very slowly. Turning from the State to the local authorities, it may be mentioned that throughout Hungary and Croatia there are 72 comitats or county councils, and only 10 or 12 of them are attempting to deal with the housing question, and they have as yet built but very few workmen's dwellings. Thus in the provinces the progress is as slow as in the capital, for if in its turn the local authority at Budapest has entered the lists and has built some municipal tenement houses, these were only inaugurated on August 1st last, just in time to show the Medical Congress that something

These dwellings I was able to visit during the month of September, that is, after they had been occupied for a little while. They are at a considerable distance from the centre, and in so isolated a position that there is no medical practitioner at hand. Three deaths had already occurred among the children of the incoming tenants, and the fact that it was necessary to send a long distance for medical assistance was found to be a great hardship Doubtless, in time, when more houses are built and more pe ple live here, some enterprising practitioner will come and reside in the neighbourhood. The

municipal tenements consist of large four-storey blocks built on each side of a square which is being laid out as a garden and playground, so that both adults and children will be able to enjoy some relaxation in the open air. Though the design of the buildings is very simple, nevertheless the gloomy barrack-like appearance of many such structures has been avoided. The wide and light arch of the open-air staircases, and above all the high and pointed roofs of coloured tiles give a certain brightness and variety of form and colour which produces a cheerful impression. As inside everything is quite clean and fresh, for it is all so new, this impression is not effaced on penetrating among the inhabitants of the tenements. The lofty pointed roofs form large attics where the inhabitants can hang their clothes up to dry. The washing is done downstairs in the basement. Here are numerous store-houses for wood and other fuel. Then there are hot and cold baths and the necessary conveniences for washing the family linen. The tenants take it in turn to make use of these appliances.

finished. It is to be hoped, however, that greater care will be shown in regard to the sanitation of future tenements, for the new municipal tenements which I visited, though so clean and fresh, had no provision made for the ventilation of the rooms. There were only windows, and these could not be opened partially at the top so as to provide a little ventilation without causing too much draught. Nor were there any small holes pierced in the walls to let a little air through when both doors and windows are shut. Again, there is only one water-closet for every two tenements. Here instead of a large window opening on to the outer air there is a small window giving on to an inner shaft about 3 feet square. This shaft is too small to let down any light, and in the absence of any artificially induced current takes up little air, so that the closet, which ought to have the maximum supply of pure air and light, is always in darkness and is but very feebly ventilated. As compared with the older models of artisan dwellings built in England, the tenement dwellings of the Budapest At present there are only 166 tenements ready for municipality are much more artistic and cheerful in form, habitation, and this is not enough to attract a medical colouring, and decoration, but they are decidedly inferior



The Budapest Municipal Tenement Dwellings, opened August 1st, 1909.

practitioner. When the temporary school now installed in from the sanitary point of view to anything which could now one of the blocks of buildings is removed to a school which is to be provided there will be 192 tenements available. Also the municipality has built close by a row of small shops, and these add a little to the population while supplying the daily requirements of the inhabitants. The tenements consist some of one room and a kitchen, with antechamber; others of two rooms and a kitchen and an antechamber. The rents for the tenements with but one room vary from close upon £8 to £12 10s. per annum; and those with two rooms, kitchen and antechamber are rented at £16 12s. to £20 per annum. Dear as this may seem, it is nevertheless cheaper than the usual charge made. At Budapest a small unfurnished room and kitchen can be rented at £16 10s. to £20, and two rooms with an antechamber and kitchen in the centre of the city would cost £58 per annum. Even at these exorbitant rents there were only 127 houses empty in Budapest last quarter. There has been very little building during the last few years, though the demand for house room is ever increasing. But now, what with State and municipal enterprise, 3000 to 4000 new tenements will be available when the constructions either just completed or actually in hand are all quite

be built in England.

In one other respect, bearing on the housing question, Budapest is most unfortunate. The tramway companies not only charge very high fares but stop running early in the evening. This renders it very inconvenient to live in the suburbs, increases the congestion in the centre, and prevents the expansion of the city. At Huddersfield many years ago the town council ran a tramway up a hill to a very healthy outlying site where there were hardly any inhabitants. was obvious that this would be a dead loss, and It so it was for a time, as there were hardly any passengers in the tramcars, but it helped to relieve the congestion in the centre and was the means of ultimately bringing into existence a very desirable and healthy suburb. At Budapest the tramways belong to two private companies that are not animated by any such public-spirited Nor do the complaints of the inhabitants have policy. much effect, and it is stated that certain members of the municipal council are directors or large shareholders of Also anyone at Budapest these tramway companies.

connected with a newspaper receives a free pass and travels gratuitously on the tramways. From all of which it somehow happens that pressure is with difficulty brought to bear on the tramway companies. Nevertheless, the question of cheap, constant, and easy transport is very intimately connected with the housing problem and the want of healthy dwellings at moderate rents is the most urgent need of the population of Budapest. On this I very forcibly insisted 15 years ago after the Eighth International Congress of Hygiene and Demography. While gladly recognising that in the interval some progress has been accomplished, it is still on this, the housing difficulty, that I must again insist to-day after the Sixteenth International Congress of Medicine.

MALARIAL FEVERS IN INDIA.

REPORT ON THE CONFERENCE APPOINTED BY THE GOVERNMENT OF INDIA.

(From a Special Correspondent.)

(Continued from p. 1470.)

The Address by the Lieutenant-Governor of the Punjab, So.

FOLLOWING the addresses delivered by his Excellency Lord Minto and Colonel Leslie, I.M.S., Sanitary Commissioner with the Government of India (see p. 1483 of our present issue), Sir Louis Dane, Lieutenant-Governor of the Punjab, a most able administrator who has spent his whole career and service in the Punjab, made a very effective appeal to the Congress. After first thanking the Viceroy for summoning such an influential Congress to deal with what he considered perhaps the most important sanitary and administrative question in India, he passed on to review the occurrence of malarial fevers in his own province. He said that the Punjab had bulked largely in Colonel Leslie's paper, and perhaps, as head of this province, he might be allowed to add a few words on the general question before the Conference proceeded to attack it in detail. It is a curious fact that in the Punjab, when they were involved in epidemic disease, the results are ordinarily more strikingly disastrous than elsewhere. This holds good especially in the case of malarial fever. It had been his good fortune to have spent most of his service amongst the people as a district and settlement officer and he could speak with full knowledge of the terrible ravages that malaria caused. Epidemics of small-pox, cholera, and plague are grievous afflictions, but neither singly nor even collectively are they responsible for so much economic inefficiency, and, what is worse, actual human misery as the recurrent scourge of malaria. To cope adequately with this curse of the country had been his chief endeavour since he assumed charge of the Punjab Government. Colonel T. E. L. Bate, M.A., I.M.S., and Colonel G. F. W. Braide, I.M.S., would explain what measures the Punjab Government had adopted and how far they had been successful. was confident that the results of the deliberations of this Conference would materially help him in his task. It was a curious fact that most of the severe epidemics of malaria in recent years in the Punjab with which he had been brought into personal contact had been associated with a cataclysmal downpour of rain in the months of July and August, and it was perhaps a still more curious fact that the epidemic had almost synchronised with the downpour, as Colonel Leslie had noticed. He remembered the heavy rains of 1880 and the resultant epidemic in Amritsar, when that unfortunate city lost 15,000 people in 3 months from malaria. In 1890 there was heavy rainfall in the Punjab submontane tracts, and the high uplands of Gujarat, Sialkot, and Gur-daspur districts were decimated. This tract is singularly dry and free from stagnant ponds, and no doubt the question of why fever should have visited it in such a way will be duly considered. In 1892 he was in Peshawar. It was thought that the dreaded Peshawar fever had died out owing to sanitary improvements and the introduction of a pure watersupply. In July and August of that year they had 20 inches of rain, against an average of perhaps 2, and this was followed by an appalling outbreak of the worst type of Peshawar fever, and the returns of the army will show how the troops suffered. Our experience of last year had been noticed by Colonel Leslie, but it was very similar. He

ventured, therefore, to suggest for consideration why such outbreaks follow so closely upon these downpours. There must be other causes than those mentioned by Colonel Leslie, and if the Congress could discover them it will have done well indeed by the Punjab. He concluded his remarks by again thanking the Viceroy for his gracious action in convening this conference, from which all hoped so much for the country and its peoples.

Summary of Transactions.

Major S. P. James, I.M.S., introduced a discussion upon the Distribution of Malaria in India, and dwelt upon the necessity for an investigation similar to that which Captain Christophers made in the Punjab, which should be begun in every province. He said that many people still believe that anti-malarial measures were required almost everywhere in India, and that for this reason the magnitude of the task was to be measured only by the area of the country and the number of the inhabitants. There were still people who go to the trouble of working out the cost of distributing quinine to the whole population of a province. Such calculations serve no useful purpose, and the appalling figures which result from them tend to discourage effort. But if, instead of proceeding to ascertain the magnitude of the task by such methods, an attempt were made in the first place to define the exact distribution and comparative prevalence of malaria in the province, the result might quite possibly show that the expense of dealing with the disease would be only moderate in comparison with total revenues of the province. For example, even a cursory examination of the death-rates from fevers in the Madras Presidency indicates that the areas in which measures are urgently required cannot be numerous, and that the task of dealing sufficiently with malaria in this Presidency may be by no means one of great magnitude. Indeed, if we assume that, at any rate, for a number of years all our efforts should be concentrated upon the mitigation of malaria in places where such efforts are urgently required, and he took it that this meant in places where the disease was seriously interfering with prosperity and with the natural increase of population, he doubted if there were half a dozen considerable areas in the Madras Presidency which would come in that category. Again, it is, or was until quite recently, a common belief that Assam as a whole is intensely malarious, but the truth is that a great part of that country is only very slightly malarious, and that in some areas the disease does not occur. He believed the same may be true even of a country with so bad a reputation for malaria as Burma. Major James also referred to the necessity of ascertaining for as many areas as possible in each province what proportion of deaths recorded under the heading "fever" by the existing agency for the collection of vital statistics are due to malaria, and he suggested a series of careful inquiries by a professional agency in selected areas of every province.

Captain S. R. CHRISTOPHERS, I.M.S., read a paper on a New Statistical Method of Mapping Epidemic Disease, with Special Reference to Malaria, and confined himself to a discussion of the returns of the Punjab. He said that the mortality statistics of the Punjab were capable of telling us a great deal regarding the incidence of the epidemic disease, and that in arriving at this information the method of using an epidemic figure had its uses. In the case of great epidemics a rough notion of their distribution could be gained even from applying this method to district tetals, but to ascertain with any delicacy the distribution of these epidemics, it was necessary, for reasons explained, to resort to thana figures or even for certain purposes to the returns of individual villages.

Major W. H. KENRICK, I.M.S., civil surgeon of Khandwa, drew attention to the risks that were run by travellers in resthouses, paraos or halting-camps, and large junctions on main lines of traffic. Such places, he held, form a perpetual source of malarial infection; and persons halting at them do so under conditions most favourable to the anopheles mosquito. He drew attention to the fact that the great majority of malaria cases, especially those of a severe or persistent type of fever, give a history of having acquired the infection while in the district away from their headquarters town. A European is called upon to leave his headquarters on a short tour of duty. He spends a few nights in a certain dâk bungalow or rest-house, and within three weeks of his return he develops an attack of fever. With natives it is

generally the result of stopping the night at some parao or generally the result of stopping the night at some purus or rest-camp or at some village dharmsala while on a journey to or from his home. This is the usual cause of an attack of malaria; very few cases are of indigenous infection. He suggested that in each district a list of the more unhealthy parass could be maintained and operations commenced upon each in turn with a view (1) to destroy mosquitoes and larvæ and get rid of their breeding grounds; (2) to render the wells mosquito-proof; and (3) to issue quinine free to the local inhabitants and to place it at all times within their reach free of cost. These operations should result in lessening the infectivity of such places, not only for malaria but to a certain extent for cholera. He then referred to the fever-rate in Pachmarhi. At that hill station the admission rate of European troops for intermittent fever in 1907 was 654 per 1000, while the rates at Saugor, Jubbulpore, and Kamptee were 286, 161, and 149 respectively. Natives also suffer severely from malaria in Pachmarhi, while European officers and ladies are comparatively free from the disease. The reason for this is that the soldiers and nearly all the natives break their journey at the foot of the hill at a place called Singanama, which is teeming with mosquitoes and exceedingly malarious The inhabitants of Singanama and the neighbouring forest villages suffer to a large extent from chronic malaria and enlarged spleens; they live under conditions most favourable to the factor of residual infection. The mosquito finds unlimited breeding grounds and a constant supply of food; thus every opportunity exists for persons halting for a few hours after sunset in the parao to acquire the infection. They get an attack of malarial fever within two or three weeks subsequently, and accuse the hill station of being malarious. It was obvious that larvicidal operations at Pachmarhi can be of very little use so long as the source of the malaria is left untouched, and Major Kenrick urged that the destruction of the mosquito must first be carried out in the places which he instanced as centres of infection. He set forth a very strong case, and it is to be hoped that systematic efforts will be made to render halting places and camps less malarious by attacking the breeding grounds of the mosquito.

Colonel W. G. KING, I.M.S., gave an account of the malarial operations undertaken in Madras and Burma, and matters connected with the same subject as it affected British cantonments in India were dealt with by Colonel J. THORNHILL, Indian Army, Inspecting Officer of Cantonments. Major J. CHAYTOR WHITE, I.M.S., advocated the introduction of small fish into tanks and catchment areas for the purpose of destroying mosquito larvæ, and referred to the good results said to have been effected by the use of fish (millions) for this purpose in the West Indies.

(To be continued.)

BRISTOL AND THE WESTERN COUNTIES. (FROM OUR OWN CORRESPONDENTS.)

The School of Medicine, University of Bristol.

YET another student association has come, or rather is coming, into being; it has been decided to try to organise a clinical society, primarily for the students, but also for the teaching staff of the faculty of medicine and for old students of the Bristol School of Medicine. This will, it is hoped, do as much good for the Bristol school as the corresponding organisations have effected for the other medical schools in London and the provinces.—The annual medical school dinner will take place on Nov. 23rd, when Mr. C. K. C. Herapath will preside and Sir Isambard Owen, Vice-Chancellor, will be the guest of the evening.

Distribution of Prizes to Nurses.

Within the past few days the nurses at the Bristol General Hospital, as well as those at the Children's Hospital, have received the prizes and certificates for the past year's work. At both institutions this annual function is made the excuse for a pleasant occasion, committee, staff, and friends joining to show their appreciation of the work done by the nurses.

The Sanitary Inspectors' Association.

The annual meeting of the south-western centre of the Sanitary Inspectors' Association was recently held at Bristol. There was a good attendance, and Mr. E. J. Casely read an

interesting paper on the milk-supply of Bristol. He stated that Bristol was supplied with milk from 82 supervised farms within the city area and 300 farms outside such boundary. Mr. Casely advocated that every dairy farmer, dairyman, and purveyor of milk should be licensed, and he expressed the opinion that they would willingly pay a reasonable sum for the same. He also considered it important that the premises should be used for dairy produce only, and if the farmer, dairyman, or purveyor of milk did not comply with the regulations they should have their licences revoked and not allowed to trade.

British Red Cross Society.

Mr. J. S. Griffiths has been appointed county director of the British Red Cross Society for Bristol. He is deputy commissioner of the St. John Ambulance Association for the 15 southern and western counties and a member of the central executive committee.

Enteric Fever at Taunton.

At a meeting of the Taunton town council held on Nov. 9th the medical officer of health (Dr. H. J. Alford) reported that 11 cases of enteric fever had recently occurred in the town; the cases came from seven houses. It was stated that the water-supply of the town was above suspicion. On the recommendation of Dr. Alford the council decided to stop the milk-supply from a certain dairy in the town.

The Local Government Board and the Supply of Diphtheria Antitexin.

At the last meeting of the Keynsham (Somerset) district council a letter was read from the Local Government Board, in reply to the council's inquiry, stating that the Board would be prepared to entertain applications to sanction any reasonable expenditure which may be incurred by the council (acting upon the advice of its medical officer of health) in supplying diphtheria antitoxin to medical practitioners for use in its district.

Nov. 16th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Presentation to Emeritus Professor Crum Brown, Edinburgh.

ON Nov. 12th a gathering took place in the debating hall of the Edinburgh Students' Union of an interesting character. The meeting was held for the purpose of presenting Emeritus Professor Crum Brown with his portrait, which had been subscribed for by former students and friends of the Professor. The chair was taken by Professor James Walker and the presentation was made by Principal Sir William Turner, K.C.B. The Principal recounted the attainments of Professor Crum Brown and dwelt upon the services which he had rendered to the University during his long tenure of the chair of chemistry. The portrait is from the brush of Mr. E. A. Walton, R.S.A., and is both a good portrait and an excellent picture. Professor Crum Brown expressed his gratitude to the subscribers. The subscribers numbered 350.

The Royal Society of Edinburgh.

The new premises of the Royal Society of Edinburgh, which are situated in George-street, were opened formally on Nov. 8th in presence of a distinguished company. The occasion was used by the new President, Principal Sir William Turner, K.C.B., to give a historical résumé of the origin, development, and growth of the society. The new premises afford much more suitable and more ample accommodation for the society than the buildings on the Mound provided, which were occupied for so many years by the society.

The Abuse of Medical Charities in Scotland.

The report of the Commission upon the Scottish Poor-law has had publicity given to it by extensive quotations from it having appeared in the daily newspaper press. The parts of it which will most attract medical attention are those which deal with medical charities, especially in the large towns. In Edinburgh there has been a considerable amount of feeling amongst practitioners that our medical charities, and particularly the Royal Infirmary, were taken advantage of by persons quite able to pay for medical attendance at home

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On this ground there has from time to time been a measure of agitation with a view to making the infirmary rules more stringent about the class of person admitted to any of its departments. So far this has not received much sympathy from the managers or from the honorary staff as a whole, and the last time the matter came up it was decided that the present evils were not comparable to the evils that would arise were a more inquisitorial system or a system of subscribers' lines introduced. Everyone recognises that there is abuse in some measure, greater in some special departments than in others, but it is held by some that it is not nearly so bad as is often represented. The Commissioners' report will bring this matter up again, for the report contains striking figures, while also showing that the amount of available gratuitous medical assistance is such that there is little attempt at providing for sickness by the provident system which is so widely used in England. The report says that 28 per cent. of the people in Edinburgh receive attendance from the medical charities of the city, and the other large towns in Scotland show much the same state of affairs. Were there to be a movement of any magnitude towards the establishment of a provident or cooperative system beyond what at present exists the practitioners would require to organise themselves so that their services were not obtained at an unjustly low price. The new Practitioners' Association of Edinburgh and Leith is the kind of local organisation that is likely to be of service to the medical profession at such a iuncture.

The Scottish Association of Medical Women.

The Scottish Association of Medical Women held its annual meeting in the Café, Edinburgh, on Nov. 13th, Dr. Elsie Inglis, the President, being in the chair. After the business of the year had been transacted by the council of the association and the balance sheet submitted and approved, a conference of Scottish medical women was held upon the difficulties that have arisen in connexion with appointments under school boards and public health authorities. A report was given by Dr. Mary Chalmers Watson, of the work done by the Information Bureau of the association in cooperation with the vigilance committee of the Registered Medical Women's Society, London, with the view of getting school boards and public health authorities to give equal remuneration to men and women medical officers. Dr. Louisa Garrett Anderson followed with an account of similar work done in England, and said that 18 posts had been dealt with in England where the salary offered to a woman for full-time work was less than that offered to a man; much valuable help had been given by Dr. Whitaker Smith and by the secretaries of the local branches of the British Medical Association, who had caused warning notices to be put into the Journal of the Association. After Dr. Anne Mercer Watson, had spoken, Dr. Isabella Mears addressed the conference upon the ethical aspect of the subject. She submitted that it was a strong temptation for medical practitioners to give too much of their services for nothing, but although money must never be put on the same plane as health, definite work should command a definite salary, and skill and experience receive adequate remuneration. Dr. Inglis closed the discussion, and the following motion was put to the meeting and carried

That this conference upholds and entirely approves the findings of the British Medical Association on the question of the remuneration of school medical officers—namely, that the minimum salary for full time work should be at the rate of £250 yearly, and that for equal work the remuneration for men and women should be the same.

Clinical Teaching in Glasgow.

The General Council of the University of Glasgow last week discussed the new scheme of clinical teaching which is being promulgated by the University Court with reference to the creation of chairs of medicine, surgery, midwifery, and pathology in connexion with the Royal Infirmary. On a vote being taken, after lengthy debate, it was ultimately decided by 31 votes to 10 to support the scheme. Later in the week the governors of the Victoria Infirmary met and issued a statement of their views on the subject. They understand that an essential part of the scheme is that the Muirhead trustees are to provide incomes for two of the four proposed chairs. This scheme, if carried out in connexion with the Royal Infirmary, must in their opinion inevitably place the Victoria Infirmary in an inferior position to the Royal Infirmary, and the tendency would be that physicians.

and surgeons of eminence and ability as teachers would prefer appointments at the Royal Infirmary rather than at the Victoria Thus the interests of the Victoria Infirmary Infirmary. would suffer. Patients also, when it became known that the posts in the Royal Infirmary were filled by men of the highest ability, would undoubtedly prefer to be admitted into the Royal rather than into the Victoria Infirmary, and donors would also be influenced unfavourably towards the Victoria Infirmary as regards the support of the two institutions. Hitherto, of the three great Glasgow hospitals, only one of them, the Western, has participated in special University privilege, the Royal and Victoria Infirmaries being on the same platform. The governors object to this equality being disturbed, especially when it is largely to be accomplished by money from the Muirhead Trust. So far the Muirhead trustees have not expressed any willingness to assist the Victoria Infirmary equally with the Royal Infirmary, notwithstanding that the governors of the Victoria Infirmary have approached them and asked to be put on a similar footing. The case of the Victoria Infirmary is regarded by the governors as being peculiarly strong in relation to the Muirhead Trust, as Dr. Muirhead in his will expressed as his final opinion and direction that his proposed college "might and should be placed in proximity to the Victoria Hospital." Clearly, therefore, according to them the Victoria Infirmary has a greater claim to participate in the funds left by Dr. Muirhead than any other institution in Glasgow. As showing the opinion formed by competent judges upon the special claims of the Victoria Infirmary the governors point to the fact that the judges of the Court of Session, in sanctioning a permanent constitution for the disposal and application of Dr. Muirhead's bequest, framed a board of representative governors, of whom three were to be appointed by the governors of the Victoria Infirmary, and not by any other infirmary in Glasgow, and not more than two by any other of the great public bodies of Glasgow. The governors of the Victoria Infirmary, therefore, appear to have been surprised to learn that the Muirhead Trust are promoting a provisional order to enable them to pay over annually £800 to the scheme of the Royal Infirmary whilst they have refused in any way to recognise the claims of the Victoria Infirmary. At the meeting last week they accordingly felt that no course was open to them but the legal course of opposing the provisional order, and they unanimously agreed to adopt that course and to enter formal opposition to the provisional order when it should come before the Parliamentary Committee.

A Medical Officer's Salary.

Recently the health committee brought forward at a meeting of the Kirkintilloch town council a recommendation that applications be invited for the post of medical officer of health to succeed the late Dr. Whitelaw, the applicant to have the diploma of Public Health, and the salary to be £30 per annum. It was also moved that the officer be not allowed to practise in the burgh, with a view to his having no private interests to clash with the discharge of his public duties. It was then moved that the salary be £40 per annum, the mover styling it preposterous to offer the sum of £30 to a man of such qualifications as were required; the men who cleaned the council's streets were better paid. On the vote being taken the committee's recommendation was agreed to.

Dundee School Board and its Medical Officer.

Last week at a meeting of the Attendance Committee of the Dundee School Board the question came up of appointing a medical officer. The convener pointed out that it had already been decided to appoint a medical inspector and two nurses. They came now to make arrangements for advertising for such a man as the board might think suitable for the post. The clerk had submitted the scheme which the board had agreed to. The clerk read the reply from the department, which set forth that "My Lords" were in full agreement of the scheme as regards general principles; they, however, regard as a sinc qua non that the inspector should hold a diploma in Public Health, which last provision the chairman held as outside the provisions of the Act, and the clerk stated that on his making inquiries of other boards he found that no such provision was suggested in their cases.

Professor J. A. C. Kynoch.

Professor Kynoch of Dundee University College Medical

School and Dean of the Faculty of Medicine in the University of St. Andrews, has been elected as an honorary Fellow of the Munich Gynæcological Society.

Medical Inspection of School Children in Banffshire.

A conference was held on Nov. 6th on this subject in Keith, between the secondary education committee for the county of Banff and representatives of the various school boards within the county. A subcommittee which had considered the matter submitted the following three schemes:—

1. The appointment of a duly qualified medical practitioner, with a Public Health qualification, who would devote his whole time and perform the whole work at an estimated salary of £450 per annum, being £300 as salary, and £150 for expenses.

2. The appointment of the medical officer of health for the county as medical officer in chief, with a qualified assistant, having a special knowledge of ear, throat, and eye, and the degree of Public Health, if possible at an estimated salary of £500.

3. The appointment of the medical officer of health for the county as medical officer in chief, with the local medical officers of each district as his assistants, at an estimated expenditure of £600, made up as follows: Salary of medical officer £65, expenses £80; salary of local medical practitioners £375, expenses £80.

The vote resulted in scheme No. 3 receiving 18 votes; No. 2, 2 votes; and No. 1, 4 votes. Scheme No. 3 was accordingly adopted, and was ordered to be sent to the secondary education committee with a view to their formulating a scheme in accordance therewith, so that it might thereafter be submitted to school boards in draft for their consideration.

Aberdeen University: The New Principal.

On Nov. 9th a meeting of the Senatus of the Aberdeen University was held, when Dr. George Adam Smith, the newly appointed Principal of the University, presented his commission of appointment. Professor W. Stephenson, the senior professor, presided, and on behalf of his colleagues offered the new Principal a cordial welcome.

Nov. 17th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Sir Charles A. Cameron.

THE veteran Dublin sanitarian, Sir Charles Alexander Cameron, has been presented with an illuminated diploma honorary membership of the Irish Central Veterinary Association. A special dinner was given at the Gresham Hotel for the purpose of carrying out the ceremony of presentation under the presidency of Mr. P. J. Howard, M.R.C.V.S., who reminded his audience that their association represented veterinary practitioners of every part of Ireland, and that they had decided on paying Sir Charles Cameron the present compliment in recognition of the fact that he had invariably proved himself the staunch friend of their profession. He it was who fought for the object of having a whole-time veterinary officer appointed to the Public Health Department in Dublin, and eventually succeeded in having Mr. Watson chosen to that post. At the various congresses of public health and at the sanitary institutes he had at all times shown himself to be the friend of the veterinary profession. The text of the diploma was then read by Mr. Watson, after which the health of the recipient was drunk with great enthusiasm and musical honours. In his reply, Sir Charles Cameron expressed a deep feeling of gratitude for the compliment paid to him by the leaders of a profession other than his own, which he had always regarded as a sister profession, and one which he thought possessed the strongest claim to stand upon a very high level-adding that to a great extent the education of the veterinary physician and that of the physician for mankind were carried out on the same lines. He was proud on being reminded a few days before of an early effort of his to establish a veterinary school, and also of the fact that they have now so very successful a Veterinary College in Ireland. After a few appropriate remarks from Professor Mettam (President of the College), Dr. M. F. Cox (senior physician to St. Vincent's Hospital) paid a high tribute to the attainments of the veterinary profession in this country, and expressed the belief that "the health of all our towns would be much improved if the veterinary surgeons were better recognised."

Irish Forestry: Celebration of "Arbor Day."

The "sloblands" at Fairview (near Clontarf), furnished the text for so much discussion during last year's epidemic of enteric fever in the vicinity, are being filled in with a rapidity which promises to establish a record in the annals of Irish industry. A wealthy resident Clontarf proprietor generously presented a number of shrubs and trees which were planted there on Nov. 6th. Last year, indeed, "Arbor Day" was similarly celebrated in the same enclosure on a smaller scale, and the promising growth which resulted has undoubtedly enlisted many enthusiastic recruits. The work of planting was carried out according to the method recommended by the Irish Forestry Society, which progresses daily in its activities. Another manifestation of this fact has just been displayed in Limerick, the corporation of which has decided on the purchase of 200 trees and the planting of the same in selected localities in the various wards of the city. And Arbor Day has also been celebrated in Bray under auspicious conditions, for the first instalment of tree-planting was carried out by their Excellencies the Earl and Counters of Aberdeen.

Nov. 16th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

The Payment of Gratuities or Commission for Recommending Patients.

In a circular directed to all the Aerzte-Kammern (Medical Councils) in Austria, the Aerzte-Kammer representing Styria has called the attention of the profession to a discreditable system which has attained considerable proportions within the last few years, and which tends to lower the position of practitioners in the eyes of the public. What the circular chiefly complains of is that in many places it has become customary for the proprietors of sanatoriums, hydrotherapeutic establishments, convalescent homes, and other similar institutions to pay commissions to the medical men who send patients there for treatment. It has also happened that specialists have been forced in several instances to hand over to the patient's ordinary medical attendant from 20 to 50 per cent. of the fees which they (the specialists) have received for performing an operation; and instances are known where porters, hotel servants, nurses, and midwives have been bribed by substantial percentages of the fees paid for medical advice by patients who were brought or introduced The honourable members of the profession by these people. can only protest against such abuses, because the acts in question are not illegal, and the Medical Councils have no power to punish their members who do not conform to ethical conventions. A reaction has, however, now set in, originating with the proprietors of sanatoriums and similar institutions, who are endeavouring to combine for the purpose of resisting demands for the payment of commission. At the same time the Aerzte-Kammern are explaining matters to their members to enable them to boycott those practitioners who try to get commissions from the consultants and specialists recommended by them. The public themselves have become suspicious and go to a specialist without first informing their family adviser, often even telling the specialist that they have no regular medical attendant. Naturally this tends to diminish the confidence which ought to exist between the patient and the practitioner, and is objectionable in various ways. The suggestion of the Council of Styria is to call a meeting of medical representatives, who would endeavour to find some means of correcting this evil, which, as it has now grown strong, will be difficult to eradicate. It must be kept in mind that the cost of living has become dearer in this country by at least 40 per cent. within the last 18 years, and that the majority of practitioners here come from families not overburdened with wealth.

Horseshoe Kidney.

At a recent meeting of the Gesellschaft der Aerzte Dr. Paschkis showed three preparations of portions of horseshoe kidney, a condition which is not very rare and is always very unpleasant to the surgeon who may encounter it in the course of an operation. In the first case the patient was a man 57 years of age who had been suffering for 10 years from difficulties in micturition. Examination by the X rays

revealed the presence of concretions in the right kidney and the urine from the right side was purulent, while that from the left side was clear. Pains of a colicky nature were frequent, and Professor Zuckerkandl therefore performed an operation during which it was discovered that whilst the upper extremity of the right kidney was easily freed from the adjacent structures the lower extremity was connected with the left kidney by a bridge of renal tissue extending across the vertebral column, the case being in fact one of horseshoe kidney, in the right part of which calculi were lodged. This right half was resected in front of the vertebral column, with the accompaniment of severe hæmorrhage from abnormal and atypical vessels. The patient made a good recovery and at present feels quite well. The second patient had been suffering from profuse intermittent renal hæmorrhage, which by repeated separations of the urine was ultimately found to come from the right kidney. An operation was considered to be inadvisable, as purulent urine containing casts came from the left kidney, but the patient was very anxious to have one performed, preferring the risk to his constant debilitating hæmorrhages. The X rays gave no clue to the diagnosis, and a neoplasm was suspected. When an operation was at length undertaken pyonephrosis of the right half of a horseshoe kidney was found, numerous concretions being present. The resection was successful and the patient made a good recovery from it, but died two months after the operation from chronic bronchitis. Necropsy verified the diagnosis of horseshoe kidney. The third patient was a woman with an undefinable tumour of the abdomen. Laparotomy showed cystic degeneration of the right half of a horseshoe kidney. Conservative treatment was adopted here. Dr. Paschkis said that the diagnosis of such cases was very difficult before operation; in fact, hardly ever The operation itself was extremely difficult, although the results were not unfavourable. Great care should be taken not to resect a kidney unless both its extremities have been found and freed from their connexions so as to diminish the risk of complications.

The Water-supply of Vienna.

At this time last year there was a serious water famine in Vienna owing to the drought which had continued since the previous July and the absence of all snowfall later. This year, however, there is an abundance of good water, which has been brought to the city by the new waterworks. There are at present two large systems of waterworks in construction besides the two existing ones, and these will be completed in 1911, so that then there will be at disposal a quantity of 2,500,000 hectolitres daily, or more than 1 hectolitre (25 gallons) per head of the population. Last year, before the second series of waterworks was ready, the amount was less than half of that even in times of full supply, but now, even in the event of shortage, a quantity of at least 1,400,000 hectolitres will be available every day, sufficient for all purposes. The water comes from the Schneeberg (6000 feet high) and the Otcher mountains (6300 feet high), a distance of 80 miles, whilst the new waterworks bring the water from a distance of 116 miles to the city. It is a clear hard water, with a constant temperature of 6-7° O. in winter and 7-9° in summer, containing hardly any organic matter, and with a moderate degree of hardness, leaving a small calcareous deposit on boiling. Ever since the first series of waterworks commenced to be used in 1873 typhoid fever has hardly been met with in this city, whereas formerly it was constantly present. The increased incidence of "strumous" disorders has been ascribed by many authorities to the bringing of this water from mountain districts into the city, but this hypothesis has not yet been proved. However that may be, the new water-supply is so abundant and pure that Vienna stands in this respect an easy first amongst all large cities.

Nov. 13th.

SMALL-POX IN LONDON.—Since Oct. 28th four cases of small-pox have been notified in the county of London. All of them have occurred in Stepney and the London County Council has brought the matter to the notice of the Whitechapel board of guardians, expressing the hope that the board will arrange for the vaccination or revaccination of all persons who may be specially exposed to the danger of infection.

Ghituary.

HENRY HUGH CLUTTON, M.A., M.C. CANTAB., F.R.C.S. Eng.,

SENIOR SURGEON TO ST. THOMAS'S HOSPITAL, LONDON.

In Henry Hugh Clutton, whose death occurred on Nov. 9th, at the age of 59 years, the profession has lost one of its most able, energetic, and distinguished surgeons. His last illness was a long and very painful one, and was borne with remarkable fortitude. It began in the summer of 1908, and, although some alleviation followed an operation performed at that time, the symptoms recurred with increased severity in July last. From that time until the very end he met all his troubles with courage beyond all praise, displaying throughout a determination to get well, if that end could by any means be accomplished. His heart was so deeply in his work that he longed to get back to it, and he expressed, even shortly before his death, his keen desire to return to his hospital duties next January.

He was born in 1850 at Saffron Walden, where his father was for many years vicar. He was sent to school at Mariborough, but had to leave prematurely owing to ill-health, from which he suffered for some years after. Subsequently he went to Clare College, Cambridge, and, after leaving the University, entered as a student at St. Thomas's Hospital in 1872. There he had a distinguished career, and was appointed resident assistant surgeon in 1876, later assistant surgeon, and finally, in 1892, full surgeon. At the time of his death he occupied the position of senior surgeon. As a member of the staff of an important hospital he created for himself a reputation which will long persist both in his own school and far beyond its walls. A man of strong character and lofty aims, he exercised an influence on all with whom he came in contact, whether pupils, colleagues, or patients, and few men have possessed more capacity of actively interesting themselves in the affairs of others or acquired a more devoted following. Clutton enjoyed the privilege of living actively during the most striking and rapid era of advance in the science and practice of surgery that the world has known, and in the labours of this advance he bore a yeoman's share, one of the strongest features of his work being his capacity to assimilate and utilise the progressive facts afforded by the growing science of pathology, and readily to abandon beliefs and methods on which he had depended as soon as they proved untenal·le or capable of improvement. The single word "thoroughness" suffices to describe the character of his work; a general surgeon in the best sense of the term, he was able to take an equal interest in whatever class of case might come before him, and a glance at the titles of the long list of papers written by him shows how wide a field he traversed. Mention of a few only of the subjects which especially attracted his attention is compatible with the length of this notice.

At the commencement of his career, whilst surgeon in charge of the department for diseases of the ear, he was an early advocate of an active attitude in the treatment of suppuration of the middle-ear and its annexes, a department of surgery which has since acquired so great importance. To this period of his life we owe also the urethral sounds associated with his name. In abdominal surgery his early successful operations for intestinal obstruction due to a persistent Meckel's diverticulum and to an impacted gallstone, the treatment of the dilated sigmoid colon by anastomosis and removal of the loop, and the removal of a pancreatic cyst may be cited, while the paper on the treatment of appendicitis, published in the St. Thomas's Hospital Reports for 1897, might be republished at the present day. Diseases of the bones attracted much of his attention; he was an early advocate of limited removal in the case of myeloid sarcoma; he wrote on late rickets, completing an account of his observations during the term of his presidency of the Clinical Society of London; and contributed the article on this subject to Treves's "System of Surgery." Another department of surgery in which he excelled was that of orthopædics, his splendid results in this field being due to the energy and perseverance he displayed in treating hi cases to the end.

Clutton was not an originator of methods, but he stamped



Henry Hugh Clutton, M.A., M.C. Cantab., F.R.C.S. Eng , senior surgeon to st. thomas's hospital.

those he adopted with an individuality of his own. mencing as an ardent disciple of the antiseptic faith, he became a strong and early supporter of aseptic methods, and in his precision as to details, especially in the care with which handling of the wound and its tissues was concerned, he was second to no man. As an operating surgeon, boldness, combined with excellent judgment, were his main characteristics. He rarely operated on any case, except in an emergency, without devoting an unusual amount of thought and consideration to it; each patient's disease formed a problem for his mind which he worked out to the very best of his capacity before proceeding to attack it, with the result that he was comparatively rarely confronted with a position for which he was wholly unprepared. Again, the after-results of his operations were followed with an enthusiasm equal to that with which the methods of treatment had been undertaken. Clutton was a wide reader, but the value of his contributions to surgical literature depends upon the fact that they are founded entirely on his own observation, and hence form reliable and practical aids to those who consult them. It is difficult to ascertain their exact number, but he contributed some 25 communications to the Transactions of the Pathological Society, 19 to those of the Clinical Society, 3 to those of the Royal Medical and Chirurgical Society, 17 to the St. Thomas's Hospital Reports, in addition to numerous contributions to the medical press, the Annals of Surgery, and the American Journal of the Medical Sciences. He also wrote, as has been said, the articles on Diseases of the Bones and Deformities for Treves's "System of Surgery, article on Pyæmia and Septicæmia in Holmes's "System," and made a translation of von Esmarch's "Handbook for Military Surgeons." As a teacher he belonged to the school who regard the study of pathology as the proper preparation for a successful surgical career, and he perhaps somewhat unduly underrated the old-time course by way of the anatomical department. His lectures were popular and well attended, but his strong point was as a clinical teacher; he always attracted a large class both of the junior and more advanced students, and, as was the case with his writing, the feature of his clinical teaching was that the instruction was the direct outcome of practical personal experience. During the whole period of his professional life he kept careful notes in his own hand of every case of importance in his practice, whether private or in hospital, while these histories were kept up for years after the patients left his charge. A considerable time daily was devoted to this work, by means of which he accumulated an enormous and exact practical experience, and it is sad to think that physical weakness, steadily borne up against, and the catholic nature of his occupations prevented his making a great deal more use of the material in his possession than he was able.

Clutton was very highly respected by his colleagues on the Council of the Royal College of Surgeons of England, where he was nearing the completion of a first term of office. At first a little impatient with the dignified and deliberate methods of procedure, which were ill-suited to his constitutional desire for rapid action, he became gradually and increasingly interested in the work of the College. He did much valuable work in committees, where he often shone more than in the formal procedure of a larger body. He was very much interested in all matters connected with the medical curriculum, and of late was much occupied with the question of more fully utilising the material of the Hunterian Museum for the purpose of teaching pathology.

This brief notice of the surgical aspect of Clutton's career cannot be concluded without emphasising the value of the work he performed for his own school. Beyond the information he imparted, his strenuous example reacted upon his colleagues and pupils and influenced them deeply. His colleagues will sadly miss his stirring spirit from amongst themselves, while many a man will feel that he has lost a friend ever ready to be consulted and to give valuable and practical advice.

We are indebted to Dr. S. J. Sharkey for the following personal appreciation:—"The writer first made the acquaintance of Clutton in 1876, when he held the post of resident assistant surgeon, and from that time till his death he remained on terms of the closest intimacy and friendship with him, and acted as his medical colleague during the whole period of his full surgeoncy. Clutton possessed in a

very high degree the scientific mind. He was a patient, careful, and skilled observer; no trouble was too great for him, whether it was required in the pursuit of purely scientific knowledge or in sifting the signs and symptoms at the bedside. Throughout his career he was a keen pathologist, and his whole knowledge and art of surgery was founded on the pathology of the day, of which he kept himself well abreast. His intellect was keen and powerful, and the reasoning power he displayed in forming and explaining the conclusions he arrived at was of the highest order. His surgery was from beginning to end rational. The love he had for his work was palpable to all, and the interest he took in his patients was not limited to their diseases, but embraced their whole welfare. He had a great love for children, and when he came to see them professionally his first thought appeared to be to play with them, and this he generally did. His value as a colleague in the wards of the hospital cannot be over-estimated. Once called in consultation, he would come again and again of his own accord to watch the case until he had come to a final conclusion as to what was the best course to pursue. In this way one's responsibility in the care of serious and urgent cases was equally shared with him, and the burden of them greatly lightened. Clutton's endurance and capacity for work were very remarkable in his early days; indeed, until about the last 12 years of his life he seemed never to tire, but to work all day and read and write until late at night. His strength was first sapped by two serious illnesses due to septicæmia from poisoned wounds about 12 years before his death. He was left by them in a condition of profound neurasthenia, and yet with an indomitable determination to work. Nothing proved what force of character he possessed more than the manner in which he carried on both hospital and private work under difficulties which would have paralysed most people, and this for years. In fact, he never was the same man again. He used to do an ordinary full day's work, although it exhausted him to walk even to the top of Portland-place and back; and on his return from the hospital he frequently had to remain lying on his back unable to do anything for the rest of the evening. business of Clutton's life was not, however, confined to his hospital and private practice. His interest and work extended in many directions, and he took upon himself gladly many public duties. His business capacity and readiness to serve on all kinds of committees concerned with the general management of his hospital and school caused a great addition to his life's work, and deserves to be remembered with gratitude by those to whom he so gladly gave his time. His activities extended, however, far beyond the walls of St. Thomas's. He was a visitor for many years to King Edward's Hospital Fund; he represented the Royal College of Surgeons of England on the Senate of the London University and on the executive committee of the Cancer Research Fund. He was consulting surgeon to Osborne; treasurer of the Medical Sickness, Annuity, and Life Assurance Society and of the Convalescent Homes Association. He was also at one time surgeon to the Victoria Hospital for Children, and he was the last President of the

Clinical Society.

In any notice of Clutton's career, however cursory, his relations with medical students deserve special mention. He was a clear and admirable teacher at the bedside, and he took special pleasure and pride in the classes he held in the wards for this purpose. He was always followed by a keen and appreciative crowd of students, numbers of whom, but perhaps especially the more advanced men, derived the greatest advantage from his brilliantly clear and practical instruction. In one respect Clutton richly deserves the title of 'students' friend,' when one thinks of the number of them who are to be found, not only in this country but in many others, who have profited by his knowledge of the world, and of the conditions of general practice. Just at the time when they became qualified, and were uncertain what to do, or how to do it, Clutton was always at their service, and would consider each one's case and prospects with the utmost interest, and give them the soundest and most business-Many a man, I have no doubt, would like advice. be only to ready to acknowledge how deep his debt is to Clutton for past kindness and wise advice. As regards general character, Clutton was as straightforward abhorred everything that savoured in the slightest degree of humbug. He held strong views and defended them with vigour. He had a great dislike, however, of squabbles or heated discussions, though he would not flinch from them if they were forced upon him. He did not like publicity or parade of any kind, and avoided them when possible. He was a very generous man, but his wisdom and common-sense ensured that his generosity was bestowed upon worthy objects. He loved sociability and hospitality, but not that of the grand type; he preferred the unpretentious meetings of a small number of friends as often as opportunity arose.

During the last 12 years of his life his physical capacities were of a very restricted order, and he could not indulge in active exercise. But in earlier days we used to go for walking expeditions in the Lake District, Scotland, and elsewhere, and in these he took great pleasure. Though never given to fishing in his youth, he was later on seduced, and we spent our holidays together on more than one occasion on Scottish and Irish lakes and rivers. Clutton was a great reader, and was particularly fond of works on history, art, architecture, and travel. To visit celebrated picture galleries and the best specimens of ecclesiastical architecture always gave him keen pleasure. I think it can be truly said that the happiest period of his life was his married life, notwithstanding the fact that it was marred by so much ill-health; for he married a wife who was as devoted to him as he was to her, who became his constant companion, and helped him in his correspondence and work as in many other ways, and who satisfied his love for children by giving him a little daughter who was the joy of his life, and who stood by him in his last illness with the most unflinching devotion.

Clutton, alas! is gone, and prematurely; but it may in truth be said of him that though dead he yet speaketh and will continue for many a day to speak in the hearts and lives of many old friends and pupils now scattered over the face of the earth."

SIR WILLIAM THOMSON, M.A., M.D., M.CH. R.U.I., F.R.C.S. IREL., C.B.,

HONORARY SURGEON TO H.M. THE KING; LATE PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND; SENIOR SURGEON TO THE RICHMOND, WHITWORTH, AND HARDWICKE HOSPITALS, ETC.

THE death of Sir William Thomson, which took place at his residence, 54, St. Stephen's Green East, Dublin, on Nov. 13th, has deprived our profession of one of its most prominent and trusted members, and leaves a sensible blank in the surgical and social life of the Irish metropolis. Descended from mixed Scottish and Irish stock, William Thomson was born in Downpatrick on June 29th, 1843. He was the youngest son of William Thomson of Lanark, a member of a leading Scottish family. His mother, who was of Irish birth, was also of remote Scottish descent. His father died while the future surgeon was still young, and in time his mother married Mr. McDougall, the proprietor of the Galway Express, an arrangement which determined the residence of young William Thomson in the western capital of Galway, and his education in the Queen's College (of the Queen's University) of that city. It was at that institution that he first distinguished himself as a student, and gave indications of the early development of high qualities, both moral and intellectual. His continuous and unwearied industry during his undergraduate course furnished ample proof of the grit and devotion to the call of duty which distinguished him throughout his whole career, while his success as a student showed his various teachers that they were engaged in the furnishing of a mind of peculiar parts and powers, having a flexibility which disarmed opposition and emulous detraction. This quality accompanied him all through life, and was one of the many for which he was so often held up as a model for the imitation of juniors in any of the various walks of public life. He repeatedly distinguished himself by capturing the principal prizes open to the competition of his class, including the distinction of a scholarship of the University, and graduated in Arts in the year 1867.

At this stage in his career he took a position on the staff of the Daily Express. The journalistic training thus received was of great use to him, giving him the power of quick discrimination in matters literary and scientific between the wheat and the chaff. Moreover, in a

country like unrestful Ireland, where politics have ever influenced all other callings, the journalistic training was especially useful. "It is probably difficult," Irish correspondent to us upon this very point, "for anyone who has not lived behind the professional scenes in Ireland to realise what the full significance was of so important an agency as that of Sir William Thomson in the tortuous pilgrimage of evolution of political liberty and intellectual enlightenment through which this country has been passing during the whole period of his active professional life. But those who have had the privilege of being so placed know best, and deplore most, the fact of the bereavement which best, and deplore most, the fact of the bereavement which the Irish public in general, and the surgical section of the same in particular, have just suffered by the removal from amongst us of Sir William Thomson. His many contributions to the literature of his profession bear the unmistakeable stamp of his journalistic training: in the critically judicious selection of material to start with; in the descriptive and discursive powers displayed; and in the generally esthetic, as well as judicious, arrangement of

His professional career began in 1872, when he graduated as M.D. and Ch.M. of the Queen's University, Ireland. Increasing appreciation within his own profession and recognition by the public followed, for he had dignity of presence and charm of manner and address to help him as well as an obviously high sense of professional duty. He at once obtained the positions of house surgeon to the Richmond Hospital and demonstrator of anatomy to the "Carmichael (Richmond Hospital) School of Medicine, in which school he was in the course of the following year appointed to the post of lecturer on anatomy. Utilising, as he did, every opportunity of increasing general and professional knowledge his anatomical and other attainments secured him the election to an examinership in anatomy and surgery in the Royal College of Surgeons in Ireland in 1875. He had been promoted to the visiting staff of the Richmond Hospital in 1873, and obtained by examination the Fellowship of the Royal College of Surgeous in Ireland in 1874. This examinership in anatomy and surgery was held by Thomson till the want of much-needed reform, in the genesis and advance of which he took so active and so judicious a leading part, remodelled the curriculum and the examinations for the diploma of the Royal College of Surgeons, and ultimately led to the inauguration of the present "Conjoint scheme of union with the Royal College of Physicians in the issue of the double diploma. Few members of the profession in Ireland played so comprehensive a rôle in the reformation of the Irish school of medicine and surgery, which was carried out in the last couple of decades of the last century, but it must be said that in the whole of this movement he had the support of Mr. (now Sir Thornley) Stoker, Mr. Corley, then the leading spirit of the Carmichael Medical School and Thomson's old master, and Dr. G. H. Kidd, who was then a great motive force in the Council of the Royal College of Surgeons. Thomson became secretary to the Court of Examiners under the new scheme, but his active interest in, and attachment to, his own University never slackened during the course of all this important work, and he was appointed examiner in surgery at Galway in 1879, and received its degree of M.A. (honoris causa) in 1881. On the merging of the Queen's University into the "Royal" he was elected a Representative of Convocation in the Senate.

Thomson's literary proclivities were proved by his obtaining, as an undergraduate, the prize offered by his university for an essay on "The Outbreak of Yellow Fever at Buenos Ayres." In 1877—then a junior surgeon on the visiting staff of the Richmond Hospital—his combined surgical and literary reputation secured the confidence of Stokes, consulting surgeon of that institution, who employed him to edit his volume on "Injuries and Diseases of the Genito-urinary Organs"; and of the publishers of "Power's Surgical Anatomy of the Arteries," who procured his services as editor. In 1882 he ligatured the innominate artery, an operation which was survived by the patient for a time considerably above the average record, and he wrote soon after a very comprehensive monograph on "Ligature of the Innominate Artery." His surgical reputation was now thoroughly established, and he was in demand in all parts of the country, but he still found time for work in constructive medical politics as is shown by his connexion with the Royal Academy of Medicine

in Ireland. Towards the close of the year 1882 the several medical societies in Dublin, which had for some years been dragging out a failing existence, had agreed to amalgamate in the constitution of a complex body bearing the name Academy. There was the inevitable discussion and controversy before the new institution was definitely constructed. Thomson's well-known ability in this direction—and adaptability in almost every other—led to his unanimous choice as secretary, and in no sphere of his varied professional lines of activity were his qualities shown to greater advantage. "Thomson's presence," writes a correspondent, "has been during the past 30 years one of the most potent factors in the leavening of the professional public life of Dublin—with its vast over-supply of professional institutions and of professional men (and women). And his influence has invariably been of the very best. His lofty principles and ideas of duty and its calls carried him through troubled voyages of professional circumstances which would, most assuredly, have worn out the enthusiasm of most. And his bearings to his contemporaries and fellows in every walk of life were equally praiseworthy."

The rest of his career may be briefly summed up, for it is public property and has already been sufficiently dwelt upon in many newspapers. From 1896 to 1898 he was President of the Royal College of Surgeons in Ireland, receiving the honour of knighthood in recognition of his professional position. Sir William Thomson's presence was missed in Dublin during a certain period of the Boer war, when he went to Africa as head of the Ambulance Corps which was despatched "to the front" by the munificent gift of Lord Iveagh. He was accompanied in this expedition by his brother-in-law, Mr. George Stoker, and their active and harmonious efforts contributed to the relief of innumerable sufferers in that period of trial. He later received the decoration of C.B. in 1900.

Sir William Thomson married Margaret Dalrymple, second daughter of the late Abraham Stoker of Dublin and sister of Sir Thornley Stoker, by whom he leaves a daughter and a son, who is a member of the medical profession.

WILLIAM ANDREW HAYES, L.R.C.P. LOND., M.R.C S. Eng.

Mr. W. A. Hayes died recently at his residence in Mafeking, South Africa. Mr. Hayes, who studied at University College Hospital, London, qualified L. R. C. P. and M. R. C. S. in 1892. He shortly afterwards commenced practice at Calne, Wiltshire, and remained there until about 1895, when owing to threatened lung trouble he went to Mafeking. Mr. Hayes was at one time attached to General Baden-Powell's force, during the greater part of the siege of Mafeking he was principal medical officer to the garrison, and later was surgeon-lieutenant of the Bechuanaland Rifles. Mr. Hayes was very popular in Mafeking, and the Mafeking Mail, in recording his death, said that he "gained the esteem of all by his geniality and good-heartedness." Mr. Hayes was also respected by the natives, as shown by the following notice in the same newspaper: "Chief Lekoko, on behalf of himself and the Baralong nation, desires to convey to Mrs. Hayes and relatives of the late Dr. W. A. Hayes their heartfelt sympathy."

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical man are announced:—Dr. Matthael of Berlin, an eminent temperance advocate, has been killed at Tübingen in a motor-car accident. His age was 58 years.—Dr. John J. Quirk, assistant professor of dermatology in the Chicago College of Physicians and Surgeons.—Dr. Richard Wehmer, medical referee to the Berlin police, has died from heart disease while on a motor tour at the age of 54 years. He was assistant to several Leipsic professors and became an expert otologist and gynæcologist. He practised for several years in Frankfort, his native town, coming in an official position to Berlin in 1887. He afterwards obtained an appointment under the Rhenish Medical Collegium in Coblentz and three years ago returned to Berlin as successor to Dr. Wernich. He was a somewhat voluminous author on hygienic subjects and was President of the German Society of Public Sanitation.—Dr. Alois Monti, extraordinary professor of children's diseases in the University of Vienna, at the age of 70 years. He was

for many years assistant to Professor Widerhofer, and in 1893 was appointed director of the General Polyclinic. He published an important series of monographs in 28 parts on Children's Diseases and their Treatment.—Dr. John P. Reynolds, formerly professor of midwifery in Harvard University.—Dr. A. V. Natanson, privat-docent of ophthalmology in the University of Moscow.—Dr. Martini, who was for many years senior medical officer of the Dresden City Hospital. He was 80 years of age.

Medical Rews.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At a meeting of the Comitia of the Royal College of Physicians on Oct. 28th, and at a meeting of the Council of the Royal College of Surgeons on Nov. 11th, diplomas of L.R.O.P. and M.R.C.S. were respectively conferred upon the following gentlemen who have passed the Final Examination in Medicine, Surgery, and Midwifery of the Conjoint Examining Board, and have complied with the necessary by laws:—

Assed the Final Examination in Medicine, Surgery, and Midwifery of the Conjoint Examining Board, and have complied with the necessary by-laws:—

Edward Morison Adam, L.M.S.S.A., Charing Cross Hospital; Stanley Denovan Adam, St. Mary's Hospital; William Arthur Alexander, B.A. Cantab., Cambridge University, London and Charing Cross Hospitals; Tom Chamney Russell Archer, St. Toomes's Hospital; William Arthur Alexander, Michose and Charinge University and Guy's Hospital; Cuthbert Charles Harber Binns, B.A. Cantab., Cambridge University and Guy's Hospital; Cuthbert Charles Harber Binns, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Cuthbert James Blaikle, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Norman Alexander Boswell, Birmingham University; Thomas Stratford Bradburn, Edinburgh and Birmingham Universities; Rex Carrington Brewster, London Hospital; L-neclot Bromley, B.A. Cantab., Cambridge University and Guy's Hospital; Sidney Howard Howning, Guy's Hospital; Edward Spencer Calthrop, Charing Cross Hospital; Guy Glidham Chambers, St. Bartholomew's Hospital; Sidney Howard Howning, Guy's Hospital; Edward Spencer Calthrop, Charing Cross Hospital; Guy Glidham Chambers, St. Bartholomew's William Necephrit, Edward Dellschaft, B.A. Cantab, William Necephrit, Edward Dellschaft, B.A. Cantab, William Necephrit, Edward Dellschaft, B.A. Cantab, Cambridge University and St. Thomas's Hospital; Anthony Dlas, King's College and St. George's Hospital; Daniel Cuthbert Drutt, Guy's Hospital; Anthony Dlas, King's College and St. George's Hospital; Daniel Cuthbert Drutt, Guy's Hospital; Partner Andrews Dyson, B.A. Cantab, Cambridge University and St. Bartholomew's Hospital; Artnur Oxley English, Middlesex Hospital; Anthony Felling, B.A. Cantab, Cambridge University and St. Bartholomew's Hospital; San uel Christopher Reeve Plaxman, Middlesex Hospital; Partner Melville Harvey, St. Mary's Hospital; Cardinals, Cyril Goorge on St. George's Hospital; Herbert Landis, John Howard Howey, M.B., Ch.B.

Holmes Rainey, London Hospital; Edward Llewellyn Noott Rhodes, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Robert Samuel Richardson, M.B. Toronto, Toronto University and London Hospital; John Lichtenstein Ritchie, Birmingham University; *Charles Dudley Roberts, Guy's Hospital; Cecil John Rogerson, University College Hospital; Christopher Rolleston, Oxford University and Charing Cross Hospital; Charles Edward Fosbrooke Salt, Cambridge University and London Hospital; Edward Albert Seymour, St. Thomas's Hospital; Clement Edward Shattock, University College Hospital; James Starr Simpson, M.D., C.M. McGill, McGill University and University College Hospital; Frank Lewis Smith, St. Thomas's Hospital; Henry Samuel Crichton Starkey, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Lawrence Storcy, M.B., Ch.B. Glasg., Glasgow University; Arnold Walmsley Stott, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Charles Henry Shinglewood Taylor, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Renry Hercules Skinner Templeton, University College, Bristol; Richard Mortimer Rowland Thursfield, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Karl Johannes Titlestad, Christiania University and University College Hospital; William Whiteman Carlton Topley, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Charles Edward Walker, M.Sc. Liverpool, Liverpool University and St. George's Hospital; Sidney Harland Ward, Otago University and London Hospital; Arthur Agassiz Matthysz Wernpermail, L. M. & S. Ceylon, Ceylon Medical College and Middlesex Hospital; Charles Fitzgerald Willes, St. Bartholomew's Hospital; Kenneth Wolferstan, St. Bartholomew's Hospital; Charles Stewart Wink, St. Thomas's Hospital; Kenneth Wolferstan, St. Bartholomew's Hospital; Charles Stewart Wink, St. Thomas's Hospital; Kenneth Wolferstan, St. Bartholomew's Hospital; Duncan Wood, London Hospital; and James Cowan Woods, London Hospital; Kenneth Wolferstan, St. Bar

* Diploma of M.R.C.S. granted on Oct. 14th, 1909.
† Diploma of M.R.C.S. granted separately under regulations previous to Oct. 1st, 1884.

ROYAL COLLEGE OF SURGEONS OF ENGLAND. At the Primary Examination for the Diploma of Fellow held on Nov. 4th, 5th, 9th, 10th, 11th, and 12th, 109 candidates presented themselves, of whom 30 per cent. were approved and 70 per cent. were rejected. The following are the names of the successful candidates :-

cand 70 per cent. were rejected. The following are the names of the successful candidates:—

Charles Vernon Anderson, St. Thomas's Hospital; John Alban Andrews, Edinburgh University, King's College, and Middlesex Hospitals; Richard Robins Armstrong, B.A., B.C. Cantab., L.R.C.P., M.R.C.S., Cambridge University and St. Bartholomew's Hospital; Edwin Thomas Harries Davles, M.D., B.S. Lond., L.R.C.P., M.R.C.S., St. Mary's Hospital; George Arthur Ewart, B.A. Cantab., Cambridge and Edinburgh Universities and King's College; Thomas Chivers Graves, M.R.C.V.S., University; Thomas Edwin Hammond, St. Bartholomew's Hospital; John Percy Ingham Harty, B.A., M.B., B.Ch. R.U.I., Queen's College, Cork; Arthur Charles Haslam, M.D., B.S. Lond., L.R.C.P., M.R.C.S., St. Thomas's Hospital and King's College; Carl Cornelius Hickey, L.R.C.P., M.R.C.S., Westminster Hospital and King's College; Bernard Whitchurch Howell, St. Bartholomew's Hospital; William Henry Kauntze, Manchester University; Melville Douglas MacKenzle, St. Bartholomew's Hospital; Edward Mapother, M.D., B.S. Lond., University College Hospital; Philip Henry Mitchiner, St. Thomas's Hospital; Frederic Miller Neild, M.B., B.S. Lond., L.R.C.P., M.R.C.S., St. Thomas's Hospital; William Marshall Oakden, B.A. Cantab., Cambridge University and London Hospital; Sidney Bertram Radley, Manchester University: Peter Warwick Ransom, B.A. Cantab., Cambridge University; Harry Robinson, L.R.C.P., M.R.C.S., Leeds University, King's College and Middlesex Hospital; Hugh Huntley Robinson, London Hospital; Stewart Henry Rouquette, B.A. Cantab., Cambridge University; Harry Robinson, L. R.C.P., M.R.C.S., Ceylon Medical College and London Hospital; John Robert Douglas Webb, Liverpool University; Ambrose Edgar Woodall, M.B., Ch.B. Manch., Manchester University; Harry Lewis Webp. Liverpool University; Ambrose Edgar Woodall, M.B., Ch.B. Manch., Manchester University; Harry Lewis Warren Woodroffe. Trinty College, Dublin; and James Montagu Wyatt, L.R.C.P., M.R.C.S., St. Thomas's Hospital.

The Diploma of Fellow has been conferred upon Mr. Edward Musgrave Woodman, M.B., B.S. Lond., L.R.C.P., M.R.C.S., St. Bartholomew's Hospital, who has now complied with the by-laws for that diploma.

The Licence in Dental Surgery has also been conferred upon Mr. Doric Yvon Hylton, Guy's Hospital, who has now complied with the by-laws.

ROYAL COLLEGE OF SURGEONS IN IRELAND: DENTAL EXAMINATION.—The following candidates having passed the necessary examination have been admitted Licentiates in Dental Surgery of the College:—

N. A. Clarke, J. J. Lyons, and A. R. Mallet.

The following have passed the First Dental Examination:-W. P. Bale and A. G. Mosbery.

The following passed in Group A of the First Dental Examination :

G. J. M. Dobbin.

FOREIGN UNIVERSITY INTELLIGENCE .-Baltimore (University of Maryland): Dr. Arthur M. Shipley has been appointed Professor of Surgical Therapeutics and Pathology.—Breslau: Dr. Georg Wetzel, privat-docent of Anatomy, and Dr. Paul Schröder, privat-docent of Psychiatry, have been granted the title of Professor. — Chicago: (Medical College): Dr. H. Gideon Wells has been appointed Professor of Pathological Anatomy. - Cincinnati (Ohio Miami Medical College): Dr. Paul G. Woodley has been appointed Extraordinary Professor of Pathological Anatomy.—
Cornell: Dr. James E. Newcomb has been appointed Assistant Professor of Laryngology.—Naples: Dr. Vittorio Assistant Professor of Laryngology.—Naples: Dr. Vittorio De Bonis has been recognised as privat-docent of General Pathology, and Dr. Giovanni Vitalba as privat-docent of Laryngology.—Padua: Dr. Pasquale Minassian has been recognised as privat-docent of Dermatology and Dr. Domenico Borsello as privat-docent of Ophthalmology.—Palermo: Dr. Giovanni Noera has been recognised as privat docent of Navarlogy and Parallel. cognised as privat-docent of Neurology and Psychiatry .-Parma: Dr. Italo Simon has been recognised as privat docent of Materia Medica and Pharmacology.-Prague (Bohemian University): Dr. Franz Procházka has been recognised as privat-docent of Industrial Diseases.—Rome: Dr. Giuseppe Basile has been recognised as privat-docent of Internal Pathology.—Turin: Dr. Luigi Rugani has been recognised as privat-decent of Otology and Laryngology.

JOHNSON v. KENDALL AND THE BRIXTON FREE PRESS: RETRACTATION AND APOLOGY.—In the issue of the Normood Observer for July 4th, 1908, certain statements were published concerning Dr. Alice Vowe Johnson, medical officer to the out Poor-law schools at Norwood, attributing to Dr. A. V. Johnson autocratic behaviour, incompetence, and negligence. The Medical Defence Union took up the lady's case with the result that a complete retractation of all the charges has been made by the defendant printing and advertising company, who submitted to judgment against them with costs as between solicitor and client, as well as to publication in the press of a formal retractation and apology. We congratulate Dr. A. V. Johnson on the determination to face a possibly disagreeable ordeal in the cause of justice, and note, once again, the value to members of the medical profession of belonging to a defence

PRESENTATION TO A MEDICAL MAN.—Mr. Randal Herley, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., house surgeon at Dewsbury and District General Infirmary, was at the monthly meeting of the infirmary board held on Nov. 9th presented with a case of eye instruments from the honorary medical staff, a field-glass from the matron and nurses, a fountain pen from the secretary, and a gladstone bag from the cook and maids. Major Walker, the president of the infirmary board, who made the presentation, expressed his regret that Mr. Herley was leaving the institution which he had served so well for four years. He had endeared himself to all who knew him, and especially to the poor of the neighbourhood. Mr. H. Fitton, honorary surgeon to the infirmary, fully endorsed the remarks of Major Walker, adding that the institution had never been better served by any house surgeon.

CHILDREN'S CARE ASSOCIATION FOR WEST SUSSEX. -At a conference arranged by the West Sussex and Chichester joint education committee at Worthing on Nov. 13th it was unanimously resolved to form a Children's Care Association for the western half of the county to follow up and remedy the cases reported on by the school medical officer as requiring attention. The Duchess of Norfolk has accepted the presidency of the association. It is proposed to work directly with the education authorities, inasmuch as the education committee is to be asked to consider and suggest a scheme for consideration by the association. The chairman of the West Sus-ex education committee, Mr. W. E. Hubbard, who presided at the conference, said that the first object of the working members would be by personal intercourse with the parents to show them what to do and to persuade them to do it. Pecuniary assistance would not be sought until the parents had done what they could, and public money would not be spent except in special cases where it was beyond the power of the parent and of any available voluntary effort to provide the means to cure. The aim was to institute a voluntary agency

without imposing on the local medical men or on the managers of hospitals.

University College Hospital Medical Society. -The annual dinner of this society will be held on Nov. 26th at 7.30 P.M. at the Gaiety Restaurant, Strand.

Mr. Ernest Dykes Bower, M.D. Durh., F.R.O.S. Edin., M.R.C.S. Eng., L.S.A., has been unanimously elected Sheriff of Gloucester.

According to the Times' New York correspondent, a Radium Institute for America has been organised in that city under the presidency of Dr. Chandler, professor of chemistry at Columbia University.

The Metropolitan Hospital has been reopened for the reception of patients after four months renovation and in part reconstruction. The improvements have been carried out at a cost of £10,000, towards which sum the committee is appealing for funds.

MEDICAL MAGISTRATES.—The name of Mr. Sack Noy Scott, L.R.C.P. Lond., M.R.C S. Eng., D.P.H., medical officer of health of Plympton-St.-Mary rural district, has been placed on the commission of the peace for the county of Devon.—Mr. H. O. Hughes, L.R.C.P., L.R.C.S. Edin., has been placed on the commission of the peace for the county of Denbigh.

MUNICIPAL HONOURS FOR MEDICAL MEN.—Mr. Colston Wintle, L.R.C.P. Lond., M.R.C.S. Eng., who for the past 12 years has been a member of the Bristol city council and for six years chairman of the health committee, was re-elected by a large majority as the representative of the Horfield Ward.—Mr. Richard James Herbert Scott, F.R.C.S. Edin., consulting surgeon to the Royal United Hospital, Bath, was elected a member of the Bath town council.—Mr. Henry Edward Waddy, L.R.C.P. Lond., M.R.C.S. Eng., D.P.H. Camb., was unanimously re-elected chairman of the Gloucester Education Committee.

LONDON AND COUNTIES MEDICAL PROTECTION Society, Limited.—A special general meeting of the members of this society will be held on Wednesday, Nov. 24th, at 4 o'clock, at 31, Craven-street, Strand, W.C., for the purposes of considering, and, if thought fit, passing, with or without modification, a resolution to the following effect, viz. :-

To approve the action of the Council in arranging for an insurance of the members of the society against any damages or costs up to several thousand pounds which may be awarded at any time against any member in any proceedings which the society may undertake on behalf of its members pursuant to Article 16 of the Articles of Association of the Society, and for that purpose to raise the subscription of the members of the society to a sum not exceeding £1 per annum.

A large number of the members of the society have already effected individual insurance against damages and costs in defensive actions only, and it is now thought desirable to insure the whole of the members of the society collectively. The insurance can be effected much more satisfactorily when the society is insured en bloc, and if the above scheme is carried through a member of the society will be indemnified against any loss, whether he succeeds or fails in any action, provided only that his case is undertaken by the council of the society.

POTTERY EXHIBITION. -LEADLESS Nov. 23rd, 24th, and 25th there will be held in the large Caxton Hall an exhibition of leadless-glazed china and earthenware. The object of this exhibition is to popularise further the use of ware manufactured without risk to the worker, and thus at once to encourage experiment in leadless glazes and to diminish the occurrence of lead-poisoning among those employed in potteries. The exhibition will be organised on the same lines as the exhibition held at Church House three years ago, but on a much larger scale. A great variety of patterns will be on view, and the exhibits will include pottery adapted to every kind of use, ranging from the ordinary pie-dish to the finely designed and coloured ornamental vase. Some of the stalls will show how all the requirements of a modern house in respect of china and earthenware can be met in leadless glaze. H.R.H. the Princess of Wales is a patroness of the exhibition, and the large and representative general committee includes, among many others, the names of the

Archbishops of Canterbury and Westminster and the Bishops of London and Birmingham. On each day of the exhibition the Caxton Hall will be open from 11.30 A.M. to 10 P.M., reduced prices of admission being charged after 6 o'clock to permit the attendance of working people. Popular lectures on the object of the exhibition by well-known speakers have been arranged for the three evenings.

BOOKS, ETC., RECEIVED.

MILLS AND BOON, LIMITED, London.

The Gardener's Companion. By Selina Randolph. With an Introduction by Lady Alwyne Compton. Price 2s. net. The Children's Story of Westminster Abbey. By G. E. Troutbeck. Price 5s. net.

MURRAY, JOHN, London.

Life of Sir William Broadbent, Bart., K.C.V.O. Edited by he daughter, M. E. Broadbent. With portrait. Price 10s. 6d. net. Edited by his

DLIVER AND BOYD, Edinburgh.

The Transactions of the Edinburgh Obstetrical Society. Vol. XXXIV. Session, 1908-1909. Price not stated.

REBMAN, LIMITED, London.

The Case for Alcohol; Or, The Actions of Alcohol on Body and Soul.

By Robert Park, M.D., &c. Price 1s. net.

REIMER, GEORG, Berlin.

Lehrbuch der Speziellen Pathologischen Anatomie für Studierende und Aerzte. Von Dr. Eduard Kaufmann. Fünfte neu bearbeitete und vermehrte Auflage. Price, paper, M.23; bound, M.25.50.

REYNOLD'S-BALL'S GUIDES, London.

The Health Resorts of Europe. By Thomas Linn, M.D. Edited by A. C. Glynn Grylls, M.A., F.R.G.S. Seventeenth edition. Price 2s. 6d. net.

RICHARDS, GRANT, London.

Multitude and Solitude. By John Masefield. Price 6s.

RIVERDALE PRESS. Brookline, Mass., U.S.A.

Transactions of the American Urological Association. Sixth Annual Meeting, Atlantic City, N.J., June 3rd and 4th, 1907. Edited by Charles Greene Cumston, M.D. Two volumes. Price not stated.

SCIENTIFIC PRESS, LIMITED, London.

An A B C of Nursing in Accidents and Illnesses. By E. M. Clarke, C.O.M. Revised and Corrected by P. Barnett-Bentilf, M. R.C.S., &c. Price 1s. net.

SKEFFINGTON AND SON, London.

The Shadows of the Valley. A Practical and Devotional Guide in Sickness and Death. By the Rev. Alfred G. Mortimer, D.D.

SPRINGER, JULIUS, Berlin.

Die innere und die Chirurgische Behandlung des Chronischen Magengeschwürs und ihre Erfolge. Von der Hufelandschen Gesellschaft mit dem Alvarengapreis gekrönte Arbeit. Von Dr. L. Bamberger. Price M.S. Die Serodiagnose der Syphilis. Von Dr. Carl Bruck. Price M.4.80.

STEINHEIL, G., Paris.

Les Poisons Cancéreux. Par le Dr. Nicole Girard-Mangin. Price not stated.

STOCKWELL, ARTHUR H., London.

Where Knife is Driven. A Story by Max Trotter, M.D. Price

UNIVERSITY CORRESPONDENCE COLLEGE, Cambridge and London.

Matriculation Directory. No. 53, September, 1909. With articles on Text-books. Price 1s. net. The London University Guide, 1910. Containing the Regulations for Examinations to be held in 1910 and 1911. Price not stated.

URBAN UND SCHWARZENBERG, Berlin und Wien.

Rhino- und Laryngologische Winke für praktische Aerzte. Von Dr. Johann Fein. Price M.4. Der Varicose Symptomencomplex (Phlebectasie, Stauungsdermatose, Ulcus Cruris), seine Grundlagen und Behandlung. Nach Eigenuntersuchungen dargesteilt von Privatdozent Dr. G. Nobl. Price M.10.

Vigot Frères, Paris.

Gynécologie Médicale. Traitement médical des Maladies des Femmes. Par Albert Robin et Paul Dalché. Troisième édition. Price Fr.12.

Price Fr.12.

Traitement de la Syphilis. Par le Professeur Alfred Fournier.

Troisième édition, revue et augmentée. Price Fr.10.

Formulaire Moderne. Traitements—Ordonnances—Médicaments
nouveaux. Par le Docteur R. Vaucaire. Préface de M. le
Docteur Talamon. Cinquième édition, revue, corrigée et très
augmentée, conforme au nouveau Codex. Price Fr.7.

Formulaire de Poche pour les Maladies des Enfants. Troisième
édition. Price Fr. 8.

Diagnostic et Traitement des Maladies du Nez. "Rhinoscopie."
Par le Dr. J. Garel. Troisième édition. Price Fr. 7.

OGEL, F. C. W., Leipsic.

Lehrbuch der Physiologie des Menschen. Herausgegeben von N. Zuntz und A. Loewy. Price, paper, M.24; bound, M.26. Archiv für Experimentelle Pathologie und Pharmakologie. Redigirt von Dr. B. Naunyn und Dr. O. Schmedeberg. Elnundsechzigsten Bandes, Zweites und Drittes Heft. Ausgegeben 30. September, 1909. Price not stated.

WILEY, JOHN, AND SONS, New York (CHAPMAN AND HALL, LIMITED, London).

Studies in Immunity. By Professor Jules Bordet and his Collaborators. Collected and Translated by Frederick P. Gay, A.B., M.D. Including a Chapter written expressly for this Publication by Professor Bordet. First edition. First thousand. Price, cloth, \$6.00, or 25s. 6d. net.

WILLIAMS AND NORGATE, London.

Introduction to the Preparation of Organic Compounds. By Emil Fischer. Translated, with the Author's sanction, from the new (eighth) German edition by R. V. Stanford, B.Sc. Lond., M.Sc. Birm., Ph.D. Kiel. Price 4s. net.

Science, Matter, and Immortality. By Ronald Campbell Macfie, M.A., M.B., C.M. Price 5s. net.

WILSON, EFFINGHAM, London.

The Police Officer's Guide to the Children's Act, 1908. By W. B. Gentle, Chief Constable of Brighton, and C. A. Rawlings, Solicitor. Price 1s. 6s. net.

WITHERBY AND Co., London.

Three Voyages of a Naturalist. Being an Account of Many Little-known Islands in three Oceans visited by the "Valhalla" R.Y.S. By M. J. Nicoll. With an Introduction by the Right Hon. the Earl of Crawford, K.T., F.R.S. Second edition. Price 7s. 6d. net. Tommy's Adventures in Natureland. A Nature Story for Boys and Girls. By Sir Digby Pigott, C.B. With many illustrations by the Author and Alec Carruthers Gould, R.B.A. Price 2s. 6d. net.

WOOD, WILLIAM, AND COMPANY, New York.

American Practice of Surgery. Editors: Joseph D. Bryant, M.D., LL.D., and Albert H. Buck, M.D. Complete in eight volumes. Volume VI. Price not stated.

YEAR BOOK PUBLISHERS, Chicago. (G. GILLIES AND Co., Glasgow.)
The Practical Medicine Series. Under the General Editorial Charge
of Gustavus P. Head, M.D. Vol. VI. General Medicine. Edited
by Frank Billings, M.S., M.D., and J. H. Salisbury, M.D. Series
1909. Price not stated.
Vol. VII. Pediatrics. Edited by Isaac A. Abt, M.D., with the collaboration of May Michael, M.D. Orthopedic Surgery. Edited
by John Ridion, A.M., M.D., with the collaboration of A.
Steindler, M.D. Series, 1909. Price not stated.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Langer Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

BANTER, CHARLES B., M.B. Edin., M.R.C.S., has been appointed Resident Medical Officer to Out-patients at Queen Charlotte's Lying-in

Hospital, N.W.

Coars, George, M.D. Glasg., F.R.C.S. Eng., has been appointed
Assistant Surgeon to the Royal London Ophthalmic (Moorfields)

Assistant Surgeon to the Royal London Ophthalmic (Moorfields)
Hospital.

CONNOLLY, D. I., M.B., Ch.B. Vict., has been appointed Assistant
House Surgeon at the Staffordshire General Infirmary,
DAVIES, IVOR J., M.B., BS. Lond., has been appointed Resident
Medical Officer at the Farringdon General Dispensary, E.C.
DAVIES, WILLIAM JAMES, L.R.C.P. Lond., M.R.C.S., has been
appointed Medical Officer of Health by the Aberayron (Cardiganshire) Rural District Council.

ECCLES, E., has been appointed Certifying Surgeon under the Factory
and Workshop Act for the Longridge District of the county of
Lancaster.

GRIFFITHS, JOHN S., L.R.C.P. Lond., M.R.C.S., has been appointed
County Director of the British Red Cross Society for Bristol.

HAMILTON, ARCHIBALD, M.R.C.S., L.R.C.P., has been appointed House
Surgeon at the Chelsea Hospital for Women.

WARING, H. J., M.S. Lond., F.R.C.S., has been appointed Surgeon to
St. Bartholomew's Hospital.

WILSON, A. J., L.R.C.P. Edin., F.R.C.S. Edin., has been appointed
Certifying Surgeon under the Factory and Workshop Act for the
Airdrie District of the county of Lanark.

Pacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRKENHEAD BOROUGH HOSPITAL.—Senior Resident House Surgeon. Salary £100 and fees. Also Junior Resident House Surgeon. Salary £80 and fees.

£30 and fees.

CANCER HOSPITAL, Fulham-road, London, S.W.—House Surgeon Salary £70 per annum. Also Assistant Surgeon. Also Physiological Chemist. Salary £350 per annum.

CARDIFF INFIRMARY (GENERAL HOSPITAL).—House Surgeon for Ophthalmic and Ear and Throat Departments. Salary £30 per annum, with board and residence. Also House Surgeon for six months. Salary £30, with board, residence, and laundry.

CHARTHAM. KENT COUNTY ASYLUM.—Third Assistant Medical Officer. Salary £145 per annum, with board, quarters, attendance, and washing.

washing.

HDINBURGH SCHOOL BOARD.—Two Assistant Medical Officers. Salary

Byelina Hospital for Sick Children, Southwark Bridge-road, London, S.E.—Ophthalmic Surgeon.

Farringdon General Dispensary and Lying-in Charity, 17, Bartlett's Buildings, Holboth-circus, E.C.—Honorary Physician. Glasgow Cancer Hospital.—Director of Research Department. Salary £250 per annum.

Gloucestrenshire Royal Infirmary and Bye Institution.—Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, residence, and washing.

Hampstead General Hospital, N.W.—Physician to Out-patients.

Hospital for Consumption and Diseases of the Chest, Brompton.—House Physician. Also Assistant Resident Medical Officer. Salary £100 per annum, with board and residence.

Hospital for Sick Children, Great Ormond-street, London, W.C.—Resident Medical Superintendent, House Surgeon. Assistant Casualty Medical Officer, and Ophthalmic Surgeon.

Hull, Royal Infirmary.—Casualty House Surgeon. Salary at rate of £50 per annum, with board and lodging.

Maidstone, West Kert General Hospital.—Assistant House Surgeon, unmarried. Salary £50 per annum, with board, lodging, and washing.

and washing.

MANCHESTER, St. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—
Registrar, also Pathologist.

MANCHESTER, NORTHERN HOSPITAL FOR WOMEN AND CHILDREN,
Park-place, Cheetham Hill-road.—Honorary Physician.

NATIONAL HISPITAL FOR DISEASES OF THE HEART, Soho-square, W.—

Honorary Radiographer.

National Hospital for the Paralysed and Belleptic, Queensquare, Bloomsbury.—Resident Medical Officer, also Junior House Physician. Salaries £100 and £50 per annum respectively, with board and residence.

Newark-on-Trent Hospital and Dispensary.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, lodging, and launder.

omeer, unmarried. Salary 2000 per annual, and laundry.

OLDHAM INFIRMARY.—Second and Third House Surgeons. Salaries £100 and £30 per annum, with residence, board, and laundry.

Paddington Green Children's Hospital, London, W.—Clinical

PEMBROKESHIRE COUNTY COUNCIL.-Medical Officer of Health. Salary

Assistant.

Pembrokebhire County Council.—Medical Officer of Health. Salary £400 per annum and travelling and other expenses.

Queen Charlotte's Lying-in Hospital, Marylebone-road, N.W.—Physician to Out-patients.

Royal London Ophthalmic Hospital, City-road, R.C.—Bacteriologist. Salary £120 per annum, with lunch.

Royal Waterloo Hospital for Children and Women.—Junior Resident Medical Officer. Salary at rate of £40 per annum, with board and washing.

Saint Leonard, Shoreditch, Infirmary, Hoxton-street, N.—Second Assistant Medical Officer. Salary £100 per annum, with rations, washing, and apartments.

St. Mary's Hospital, London, W.—Surgeon in Charge of Out-patients. Selmey's Hospital, Soliety, Greenwich, S.E.—Senfor House Surgeon and Registrar. Also House Surgeon. Salaries £100 and £50 per annum respectively, with board, residence, and washing.

Sheffield Royal Hospital.—Assistant House Surgeon, unmarried. Salary £50 per annum, with board, lodging, and washing.

University of London.—Examiners in Medicine, in Surgery, in Pathology, in Obstetric Medicine, and in Tropical Medicine.

Warefield, West Riding Asylum.—Assistant Medical Officer. Salary £140, with apartments, board, washing, and attendance.

Warendon, Langashire County Asylum, Winwick.—Assistant Medical Officer, unmarried Salary £150 per annum, with apartments, board, lodging, and attendance provided.

West London Hospital, Hammersmith-road, W.—House Physician for six months. Board, lodging, and alundry allowance provided.

West Suffolk Education Committee.—Medical Inspector of School Children. Salary £250 per annum, with travelling expenses.

Windsor, and District.—House Surgeon, unmarried. Salary £100 per annum, with residence, board, laundry, and attendance.

WINDSOR, KING EDWARD VII. HOUSE SURGEON, UNMARTICE. Salary £100 per annum, with residence, board, laundry, and attendance.
WISBECH, NORTH CAMBRIDGESHIRE HOSPITAL.—Resident Medical Officer. Salary £150 per annum, with unfurnished house.
YORK COUNTY HOSPITAL.—House Physician. Salary £100 per annum, with board, residence, and washing.

TE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Lianrwat, in the county of Denbigh; and at Ballins, in the county of Mayo.

Births, Marriages, and Deaths.

BIRTHS.

HANSON.—On Nov. 13th, at Harley-street, W., the wife of Reginald John Edward Hanson, M.A. Cantab, F.R.C.S.E., of a daughter. May.—On Nov. 11th, at Great Cumberland place, W., the wife of W. Page May, M.D., D.Sc., F.R.C.P., of a daughter. Morris.—On Nov. 13th, at West Moor, Poole-road, Bournemouth, the wife of L. F. Morris, L.D.S. R.C.S. Eng., of a son. O'FLAHERTY.—On Nov. 5th, at Cothell-terrace. Stoke, Devonport, the wife of Austin R. O'Flaherty, Captain R.A.M.C., of a daughter. WARD.—On Nov. 12th, at Milverton, Sutton, Surrey, the wife of Richard R. Ward, L.D.S. R.C.S. Eng., of a son.

MARRIAGES.

RVERIDGE—ROBERTSON.—On Nov. 11th, at St. Mary's Church, East Molesey, John Everidge, M.R.C.S., L.R.C.P., to Kathleen Isobel, only daughter of the late Henry James Robertson, J.P., of Grore House, East Molesey.

N.B.— A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths,

Hotes, Short Comments, and Answers to Correspondents.

THE PREVENTION OF SPITTING IN THE STREETS.

A CORRESPONDENT has written to ask us whether any regulations exist to prevent spitting in streets and public places. There is no difficulty in obtaining by-laws relative to spitting in closed places, such as institutions, in railway carriages, or in tramcars, and notices prohibiting such a practice may be found in numerous places in many parts of the country. The London County Council has a by-law to this effect. But streets and open spaces have, we believe, been regarded as coming within an entirely different category, and clearly the same objections cannot be raised against the practice in the open as can be urged against it in confined localities. Apart from the question of health, the practice is an objectionable one, and there would be advantage in its control, especially in public places such as promenades and the like. We are under the impression, indeed, that by-laws prohibiting spitting in promenade shelters or in the neigh-bourhood of seats upon promenades have already been sanctioned in certain places either by the Local Government Board or the Home Office. In 1903 the London County Council approached the Secretary of State for the Home Department with a view to extending its by-laws so as to prohibit spitting on pavements and footways. The Secretary of State, however, stated that he would not be prepared to allow the extension as there were not the same grounds for prohibiting the practice of spitting in the streets as existed in the case of public carriages, waiting rooms, and similar closed places. In Manchester and in other towns notices as regards spitting are exhibited in factories and workshops, as well as in common lodginghouses and public houses, and copies of these could no doubt be obtained from the Town Hall, Manchester. We believe that in America heavy fines have been inflicted up in persons who persisted in the objectionable habit of expectorating in public places, and in that country the question has been carried further, and in New York it is enacted that "spltting upon the sidewalk of any public street, avenue, park, public square, or place in the City of New York. or upon the floor of any hall in any tenement house which is used in common by the tenants thereof, or upon the floor of any hall or office in any hotel or lodging house which is used in common by the guests thereof, or upon the floor of any theatre, store, factory, or of any building which is used in common by the public, or upon the floor of any ferry-boat, railroad-car, or other public conveyance, or upon the floor of any ferry-house, depot, or station, or upon the station, platform, or stairs of any elevated railroad, or other common carrier, or into the street from the cars, stairs, or platforms of the elevated railroads is hereby forbidden." This by-law is a section in the "Sanitary Code of the Board of Health of the Department of Health of the City of New York.

TWO WARNINGS.

To the Editor of THE LANCET.

SIR.—A person representing himself to be a partner in a firm of wholesale druggists carrying on business at 9, Mincing-lane, E.C., has recently been calling on members of the medical profession with the object of selling a mineral water of which his firm are said to be sole consignees. This person represents himself to be the father of an assistant physician of one of the London hospitals, and by this representation (which is entirely untrue) endeavours to interest the medical profession in his article. We write on behalf of our client, whose name we give you in confidence, to ask you if you will be good enough to give publicity to the denial of this representation, which is injurious both to our client and his father.

We are, Sir, your obedient servants,

RADFORD AND FRANKLAND.

27, Chancery-lane, W.C., Nov. 15th, 1909.

Messrs. Wilcox, Jozeau, and Co., chemists, 49, Haymarket, S.W., desire to warn members of the medical profession against a man, thinly built, apparently about 40 years of age, shabbily dressed, with a pronounced habit of sniffing, who has been representing himself as their agent, and making extraordinary proposals. No such person 1: in their employ or has had any authority whatsoever to use their

HEALTH MATTERS IN GOLD COAST COLONY: EPIDEMIC OF PLAGUE.

THE Acting-Colonial Secretary (Mr. C. Riby Williams, C.M.G.), reporting on the Gold Coast Blue-Book for 1908, estimates the present population of the colony (including Ashanti and the Northern Territories) at about 2,700,000. The European population is returned at 1768. The health of European residents was not as good as in the previous year, there being an increased death and invaliding rate with a decreased population. So far as can be ascertained the deathrate among the native community was high Towards the end of the year small-pox broke out in Ashanti, and the epidemic would appear to have been characterised by a high case-mortality. The plague

epidemic which occurred early in the year at Accra, and which spread from there to other towns on or near the coast line, accounted for a mortality of 288 of the total number of cases (336) officially recorded. At Boso in the Volta River district an outbreak of pneumonia in epidemic form occurred and led to many deaths. Such outbreaks have been recorded previously.

Major Bryan, C.M.G., the acting Governor, comments in his report at some length on the epidemic of plague at Accra, which, he observes, is the first recorded instance of plague in a British West African Colony, though an outbreak occurred at Grand Bassam, in the neighbouring French colony of the Ivory Coast, in the year 1899. The origin of the infection remains uncertain. Many theories have been put forward to account for its conveyance to the Gold Coast, but none is supported by trustworthy evidence. The outbreak was not definitely diagnosed as plague until Jan. 10th, but it is practically certain that deaths from plague had occurred before the disease began to develop the character of an epidemic. The fact that the medical authorities did not announce the existence of the diseas an earlier date has been made the subject of local criticism, but the preliminary inquiries and investigations were most thoroughly and conscientiously made by the deputy principal medical officer and his assistants. It is to be borne in mind that these officials had no previous experience of the disease nor were they familiar with the plague bacillus; in such circumstances a degree of reticence was not only reasonable but wise. An authoritative pronouncement that plague has appeared in the midst of a community where hitherto its existence has been neither known nor suspected argues the deputy principal medical officer to possess courage and self-reliance of a high order, and these qualities were no less apparent subsequently in the suppression of the disease. Major Bryan describes in detail the measures immediately taken to deal with the outbreak, and says they were speedily successful. The disease at Accra never assumed the alarming proportions which had been developed in other countries, though the town's sanit ry conditions and certain thickly populated native areas were favourable to the growth of a virulent epidemic. Though the steps taken were sufficient to keep the epidemic in check for the time being, the Secretary of State for the Colonies decided to send out a specialist to advise as to the measures necessary to stamp out contagion, and the colony was fortunate to obtain for this purpose the services of Professor W. J. Simpson. As is usual, the outbreak was associated with an epizootic of plague amongst rodents. A special laboratory for the examination of rats was established at Acera, where Dr. Graham was on various occasions able to acquaint the health committee that areas were infected in which the epi-demic had not yet appeared. The invaluable information thus received enabled the committee to take preventive measures in such localities, with the result that human beings remained free from contagion. One of the most satisfactory features of the preventive measures was the readiness with which the natives voluntarily presented themselves for inoculation by Haffkine's prophylactic, some 35,000 in all submitting themselves to the process. In spite of the measures taken to prevent natives leaving Accra by sea and land, a few fishermen evaded the police by night and left for towns on the coast. In each case the panic-stricken men carried contagion, with the result that outbreaks of plague occurred at Temma to the eastward and at Nianyano, Brewa, and Anamabo to the westward. Prompt steps were taken to deal with these villages, and the progress of the epidemic was checked in each instance, but not before 64 deaths had occurred at Nianyano, 19 at Brewa, and 12 at Anamabo. The Acting-Governor adds: "The courage, determination, and devotion shown by Professor Simpson and the medical staff in preventing the spread of and stamping out the epidemic were worthy of the high traditions of the profession to which they belong, and their efforts were ably and energetically seconded, not only by officers of all departments resident in infected areas, but also by professional men and representatives of the mercantile community who served on the committees of public health.

RADIOGRAPHS OF PULMONARY DISEASE.

To the Editor of THE LANCET.

SIR,—We would ask to be allowed to say that the radiographs referred to in your issue of Nov. 6th, pp. 1397-98, as showing "various stages of pulmonary tuberculosis with striking clearness," were the work of Dr. W. B. Knobel, of Bourne Castle Sanatorium, to whom we were indebted for the loan of them in connexion with the Royal Photograph Society's Exhibition at the New Gallery.—We are, Sir, yours faithfully.

Exhibition at the New Gallery.—We are, Sir, yours faithfully,
Ilford, London, E., Nov. 12th, 1909.

ILFORD, LIMITED.

AN INGENIOUS HATPIN GUARD.

Messrs. F. V. Patterson and Co. of Birmingham have forwarded for our inspection an appliance known as the "Cromwell" Protector for the points of hat and cap pins. It consists of a thin metal hollow sphere, which can be made either of silver-gilt or plated metal, with one of its poles cut off so as to expose the composition with which the ball is filled. This consists largely of uncured rubber, which may be punctured any number of times without losing it grip on the end of the hatpin which it is designed to protect. The patentees point out its suitability for use with nurses' cap-pins, but rightly add that the protectors should not be used in insane wards as they form such attractive-looking bodies to swallow. We have not seen a better pin protector; it is much less trouble to use than those of the older screw pattern.

L.R.C.S. should communicate, in the first place, with Mr. G. Sibley Haycock, director and secretary of the Association for the Oral Instruction of the Deaf and Dumb, 11, Fitzroy-square, London, W., from whom he will probably obtain all the particulars which he We shall be happy to be of any assistance if further information is needed.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Meek.

BOYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

NDAY.

ODONTOLOGICAL SECTION (Hon. Secretaries—D. P. Gabell, E. B.

Dowsett, J. Howard Mummery): at 8 P.M.

Dr. J. Eyre and Mr. J. Lewin Payne: Some Observations on the Bacteriology of Pyorrhova Alveolaris, and the Results of Treatment by Bacterial Vaccines.

Casual Communications:

Mr. C. Schelling: (1) A Case of Fracture of the Mandible, set with a Silver Splint made by the Casting Process; (2) Two Cases of Suppuration in the Maxilla, in which the Röntgen Rays materially helped the Diagnosis.

Mr. Stanley Boyd: A Case of Unilateral Overgrowth of the Lower Jaw. (The patient will be present at 7.30 p.M.)

MEDICAL SECTION (Hon. Secretaries—A. M. Gossage, A. F. Voelcker): at 5.30 p.m.

Paper:
Dr. F. Craven Moore and Mr. R. L. Ferguson: The Rôle of Fats in the Treatment of Functional Disorders of the Stomach.

THURSDAY.

NEUROLOGICAL SECTION (Hon. Secretaries—E. Farquhar Buzzard Wilfred Harris): at 8.30 p.m.

Hughlings Jackson Lecture :

Sir William Gowers, F.R.S.: Special Sense Discharges in Organic

SECTION FOR THE STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—E. I. Spriggs, J. P. Lockhart Mummery, J. T. Leon): at 4.30 P.M.

Dr. A. E. Garrod: Multiple Peripheral Neuritis in a Child.
Dr. R. Hutchison: (1) Twins—One Achondroplasic, the Other Normal; (2) Cirrhosis of the Liver (?) Due to Congenital Specific Disease; (3) A Family Case of Unidactyly.

Mr. K. Bremer (for Dr. F. E. Batten): A Case of Meningococcal Meningitis treated by Meningococcal Serum (Lister) with Rapid Improvement.

Mr. Sydney Stephenson: Congenital Ophthalmoplegia.
Mr. O. L. Addison: (1) Traumatic Cephalhydrocele; (2) Congenital Enlargement of One Limb occurring in Brother and Sister; (3) Enlargement of Left Leg.

Specimens:

Dr. R. C. Jewesbury: Excessive Nodules on the Mitral Valve in

Dr. R. C. Jewesdury: Baccssit Anderson and Infant.
Dr. H. D. Rolleston and Dr. A. C. D. Firth: Hemiatrophy of Brain in an Infant.
Dr. G. Carpenter: (1) Compression of Traches by Enlarged Thymus; (2) Microscopical Specimens of Liver from Case of Icterus Neonatorum.
Dr. A. C. D. Firth and Dr. E. I. Spriggs: Congenital Pulmonary

Mr. K. Bremer: The Variability and Relative Frequency of the Lesions in Polio-encephalo-myelitis. Mr. P. Lockhart Mummery: A Case of Strangulation of the Small Intestine by a Band in a Child aged 15 Months.

EPIDEMIOLOGICAL SECTION (Hon. Secretaries—W. H. Hamer, G. S. Buchanan): at 8.30 p.m.

Mr. H. G. Armstrong: Nine Epidemics of Measles at a Public

Dr. Robert Milne: Scarlet Fever—its Home Treatment.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-

MONDAY.—8.30 P.M., Discussion on the Treatment of Trigeminal Neuralgia (opened by Mr. J. Hutchinson, jun., and Dr. W. Harris).

MEDICO-LEGAL SOCIETY, 11, Chandos street, Cavendish-square,

Tuesday.—8.15 P.M., Dr. R. Russell: The Effect of Traumatism upon the Nervous System.

HUNTERIAN SOCIETY, London Hospital, Mile-end-road, E. WEDNESDAY.-4 P.M., Clinical Afternoon.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne-street, Edgware-road, W.

THURSDAY.—8.30 P.M., Dr. A. Morison: The Nature and Treatment of Angina Pectoris.—Mr. J. G. French: Chronic Middle Ear Suppuration—the Sequelæ and Treatment.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c. MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, enies-street, W.C.

Thenlee-street, W.C.
MONDAY.—4 P.M., Dr. W. Fox: Clinique (Skin). 5.15 P.M., Lecture-Demonstration:—Dr. F. J. McCann: On the Methods of Suturing a Ruptured Perinæum.
TURSDAY.—4 P.M., Dr. G. Rankin: Clinique (Medical). 5.15 P.M., Lecture:—Dr. T. Hyslop: Diagnosis of Insantty.
WEDMESDAY.—4 P.M., Mr. L. Mummery: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. L. Williams: The Diagnosis of Thyroid Inadequacy.
THURSDAY.—4 P.M., Sir Jonathan Hutchinson: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. S. Barnes (Birmingham): Disease of the Cerebral Arteries.
FRIDAY.—4 P.M., Dr. D. Mackenzie: Clinique (Bar, Nose, and Throat).

FRIDAY.-4
Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-

Note that the college west London Hospital, Hammersmithmed, W.

Monday.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X. Rays.

Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M.,
Lecture:—Mr. Baldwin: Practical Surgery.

Tuesday.—10 A.M., Dr. Moullin: Gynacological Operations.
12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M.,
Medical and Surgical Clinics. X. Rays. Dr. Davis: Diseases
of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr.
Abraham: Diseases of the Skin. 3 P.M., Lecture:—Dr.
R. Jones: Types of Mental Diseases (at London and County
Asylum, Claybury, Woodford Bridge).

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children.
Dr. Davis: Diseases of the Throat, Nose, and Bar. 12.15 P.M.,
Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical
and Surgical Clinics. X. Rays. Mr. B. Harman: Diseases of
the Eyes. 2.30 P.M., Operations. Dr. Robinson: Diseases of
Usease in the Tropics.

THURSDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration
of Cases in Wards. 12 noon, Pathological Demonstration
Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X. Rays.
Mr. B. Hurse Diseases of Children.

THURSDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Pathological Demonstration:—
Dr. Bernstein. 2 p.m., Medical and Surgical Clinics. X Rays.
Mr. Dunn: Diseases of the Byes. 2.30 p.m., Operations. 5 p.m.,
Lecture:—Mr. Keetley: Unreduced Dislocations.

FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. Medical
Registrar: Demonstration of Cases in the Wards. 2 p.m.,
Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of
the Throat, Nose, and Kar. 2.30 p.m., Operations. Dr. Abraham:
Diseases of the Skin. 5 p.m., Lecture:—Mr. Armour: HeadInjuries.

Injuries.

FATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Mr. B. Harman: Diseases of the Ryes. Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 p.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 p.M., Medical and Surgical Clinics. X Rays. 2.30 p.M., Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MEDICINE, Dreadnought
Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery.

3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R.

Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M.,

Surgical and Medical. 12 noon, Ear and Throat. 3.15 P.M.,

Special Lecture:—Sir Dyce Duckworth: Gouty Phiebitis.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine.

3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris:

Diseases of the Skin. Out-patient Demonstrations:—10 A.M.,

Surgical and Medical. 12 noon, Skin. 3.15 P.M., Special

Lecture:—Mr. Carless: Tubercular Disease of the Kidney.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor:

Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient

Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

THUSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Operations. 2.15 P.M., Dr. R. Bradford:

Barker: Radiography. Out-patient Demonstrations:—10 A.M.,

Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford:

Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient

Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out patient Demonstrations:—

10 A.M., Surgical and Medical. 11 A.M., Eye.

ORTH-RAST LONDON POST-GRADUATH COLLEGH, Prince of

NORTH-BAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

Morday.—Clinics:—10 a.m., Surgical Out-patient (Mr. H. Bvans), 2.30 p.m., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson). 4.30 p.m., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson). 4.30 p.m., Medical In-patient (Dr. A. J. Whiting).

Tuesday.—Clinic: 10 a.m., Medical Out-patient (Dr. A. G. Auld). 2.30 p.m., Operations. Clinics:—Surgical (Mr. W. Edmunds). Gynscological (Dr. A. E. Giles). 4.30 p.m., Lecture:—Dr. A. E. Giles: The Influence of the Menopause in Gynscology.

WEDNISDAY.—Clinics:—2.30 p.m., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 p.m., X Rays (Dr. H. Pirle).

THURSDAY.—2.30 p.m., Gynscological Operations (Dr. A. B. Giles). Clinics:—Medical Out-patient (Dr. G. P. Chappel). FRIDAY.—10 a.m., Clinic:—Surgical Out-patient (Mr. H. Bvans). 2.30 p.m., Operations. Clinics:—Medical Out-patient (Mr. H. Bvans). 2.30 p.m., Operations. Clinics:—Medical Out-patient (Dr. R. M. Carson). Bye (Mr. R. P. Brooks). 3 p.m., Medical In-patient (Dr. R. M. Leslie).

(Df. R M. Leslie).

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W. C.

Monday — 4 P. M., Lecture: Sir Victor Horsley: Surgical Diagnosis and Treatment of Diseases of the Nervous System.

TUESDAY.—3.30 P.M., Clinical Lecture Dr. E. F. Buzzard: Traumatic Epilepsy and its Traumatic Epilepsy and its Traumatic FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. E. F. Buzzard: Multiple Neuritis.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W. THURSDAY.—2 P.M., Clinical Demonstration:—Dr. S. Fenwick: Diseases of the Stomach.

HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.

THURSDAY.—4 P.M., Lecture (Surgical):—Mr. Kellock: The Minor Surgery of Children.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-

TUEBDAY.—3.45 P.M., Lecture:—Mr. G. French: Tracheoscopy, &c. Friday.—3.45 P.M., Lecture:—Dr. W. Wingrave: Clinical Pariology.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W

MONDAY.—3 P.M., Clinical Demonstration: Dr. H. Campbell.
TURSDAY.—5 P.M., Clinical Demonstration:—Dr. J. Mackenzle.
WEDNESDAY.—3 P.M., Clinical Demonstration:—Dr. F. Palmer.
THURSDAY.—3 P.M., Clinical Demonstration:—Dr. T. D. Savill.
FRIDAY.—2 P.M., Clinical Demonstration:—Dr. P. Stewart. 5.30 P.M.,
Clinical Demonstration: Dr. E. Macnamara.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester square, W.C.

THURBDAY.—6 P.M., Chesterfield Lecture:—Syphilis as it modifies other Eruptions of the Skin: Symptoms, Diagnosis, and Treatment.

OPERATIONS.

OPERATIONS,

METROPOLITAN HOSPITALS.

#*ONDAY (22nd),—London (2 p.m.), St. Bartholomew's (1.30 p.m.), St. Thomas's (3.30 p.m.), St. George's (2 p.m.), St. Mary's (2.30 p.m.), Middlesex (1.30 p.m.), Westminster (2 p.m.), Chilses (2 p.m.), Samaritan (Gynscological, by Physicians, 2 p.m.), Soho-square (2 p.m.), City of thopsedic (4 p.m.), Gt. Northern Central (2.30 p.m.), West London (2.30 p.m.), London Throat (9.30 A.m.), Royal Free (2 p.m.), Guy's (1.30 p.m.), Children, Gt. Ormond-street (9 a.m.), St. Mark's (2.30 p.m.), Children, Gt. Ormond-street (9 a.m.), St. Mark's (2.30 p.m.), Guy's (1.30 p.m.), Middlesex (1.30 p.m.), Westminster (2 p.m.), West London (2.30 p.m.), Middlesex (1.30 p.m.), Westminster (2 p.m.), West London (2.30 p.m.), University College (2 p.m.), St. George's (1 p.m.), St. Mary's (1 p.m.), St. Mary's (2.30 p.m.), Contral (9.30 a.m.), Soho-square (2 p.m.), Middlesex (1.30 p.m.), Contral (9.30 a.m.), Soho-square (2 p.m.), Children, Gt. Ormond-street (9 a.m.), and 2 p.m., Ophthalmic, 2 p.m.), Tottenham (2.30 p.m.), Contral London Throat and Bar (2 p.m.), Children, Gt. Ormond-street (9 a.m.), and 2 p.m., Ophthalmic, 2 p.m.), Tottenham (2.30 p.m.), Contral London Throat and Bar (Minor, 9 a.m., Major, 2 p.m.), Contral London Throat and Bar (Minor, 9 a.m., Major, 2 p.m.), Contral London Throat and Bar (Minor, 9 a.m., Major, 2 p.m.), Contral London Throat and Bar (Minor, 9 a.m., Major, 2 p.m.), Charling Cross (3 p.m.), 8t. Thomas's (2 p.m.), London (2 p.m.), Charling Cross (3 p.m.), 8t. Thomas's (2 p.m.), Modelesex (1.30 p.m.), Charling Cross (3 p.m.), 8t. Thomas's (2 p.m.), Modelesex (1.30 p.m.), Charling Cross (3 p.m.), Metropolitan (2.30 p.m.), London Throat (9.30 a.m.), National Orthopædic (10 a.m.), 9t. Peter's (2 p.m.), Westminster (2 p.m.), Metropolitan (2.30 p.m.), London Throat and Bar (Minor, 9 a.m., Many's (2.30 p.m.), Contral London Throat and Bar (Minor, 9 a.m., Many (2.30 p.m.), National Orthopædic (3 p.m.), National Orthopædic (3 p.m.), National (3 p.m.), National (3 p.m.), National (3

At the Royal Rye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

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IT is most important that communications relating to the Editorial business of THE LANCET should be addressed esclusively "TO THE EDITOR," and not in any case to any entleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTI-FIGATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET should be addressed "To the Manager."

We cannot undertake to return MSS. not used.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 18th, 1909.

Date.	Barometer reduced to Sea Level and 52° F.	Direc- tion of Wind.	Rain- fall.	Solar Radio In Vacuo.	Maxi- mum Femp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Nov. 12 ,, 13 ,, 14 ,, 15 ,, 16 ,, 17 ,, 18	29.62 29.62 29.65 29.65 29.96 30.02 30.05	W. W. N.E. N.E. N.B. N.B.	0·19 0·06 0·01	66 66 45 61 51 66 74	55 48 41 44 42 48 48	39 43 37 38 35 35 35	47 41 37 38 34 36 40	50 44 37 40 36 39 41	Overcast Fine Raining Raining Fine Fine Fine

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 Messrs. Armour and Co., Lond.;
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The FitzPatrick Lectures

GREEK MEDICINE IN ROME.

Delivered at the Royal College of Physicians of London BY SIR T. CLIFFORD ALLBUTT, K.C.B., M.D. CANTAB., F.R.S.,

REGIUS PROFESSOR OF PHYSIC IN THE UNIVERSITY OF CAMBRIDGE.

LECTURE I.

PRESIDENT AND FELLOWS, -In calling me to deliver the FitzPatrick lectures you have done me much honour, and it would be an ill-timed, however genuine, a diffidence which might seem to disparage your election; I may, notwithstanding, hesitate for a moment, as I regard the dignity of this place and as I admire the services of my predecessors. In them we have had examples of wide and sound learning, of biographical skill, and of anecdotal charm which are above my hope, and I trust outside your comparisons. For such lists I am unarmed. To original research I have no pretensions; I am a child in scholarship. Yet in some converse with letters my tastes, if not my talents, have attracted me to the development and propagation of ideas, and it will be my endeavour to present to you some broad sketch, thin and partial as it may be, of this evolution as illustrated in the history of medicine.

On the dark and stupendous background of Rome, from the foundation of the City to this day, has been displayed, as on no other canvas, the procession of those forms and those forces, innate or acquired, of science, art, politics, and religion, by the conflict and interpenetration of which the nations of modern Europe were made, governed, and

inspired.

We have our moods in which we ask ourselves if history is a fruitful study-nay, indeed, if it be not a sign of an uncreative or even of a decadent society. If our hearts are opening more and more towards the promises of the future, why should we be hankering after pictures of the past? Did the Greeks of the Parthenon regard the earlier temples whose fragments they built into their battlements, or did the Greeks of Sancta Sophia painfully restore the ruins of the Temple of Constantine? Did not the builders of St. Mark's or of St. Paul's without the Walls for their own creation even demolish the monuments of the past, as the painters of the generation of Massacio obliterated the frescoes of their fathers, and as the scribe of the cloister buried the silver uncials of some rare Pagan manuscript under his ruder record of the Gospels? Was it not, then, the wistfulness and pathos of a nation passing its prime which first tuned the notes of Virgil to a historical theme? Was not his patriotism the passionate clinging to a form which was passing away? And when our own poets take up the chant of Où sont les neiges d'antan, is the voice one of joy or of foreboding? In our saner judgment we shall answer with some boldness that the study of history need be no wistful turning back from the plough to yearn after golden ages which never were; that history is much more than the raw material for pious platitudes, and regrets, and picturesque instances. The study of history must become the orderly reflexion and method of a society, past its golden childhood indeed, yet parting with this blessed blindness, to enter upon a nobler life, in the maturity of reason and responsibility. To sap our ideals, as Roman history and all history show, does mean decadence; and it is for history to reveal the unity, the spirit, and the growth of all human ideals; and to maintain our standards. Nay, may it not, as at the Renaissance which drank deep of the past, by a kind of psychical

had grown up on tradition, on its instincts as the ants and the rooks, must, if it is to interpret its own nature and to shape its future, now take to learn at first hand the origins, the course, and the principles of its growth, wealth, and activities, and moreover to apprehend the vast scale upon which not only material but spiritual forces operate. For time present can scarcely be said to exist: Dum loquimur fugerit invida actas. From history, "a longitudinal section of human life," as Ilberg calls it, we shall apprehend how hideous is the waste in the phases of unreflective social development; and how progress may be made, not by scrapping one human society or devouring another, but on lines of continuity in free spaces of expansion, and by disengaging and delineating the methods by which a rational creates an economical evolution.

Thus truly it is that we are assured by our professorial colleagues that history is a science, a truth of which we are made painfully aware when nowadays from the Capitoline Hill we look down upon the stonemason's yard still bearing the name of the Roman Forum. Science looks to the future it is true, but to the more material future. It has little or no concern with values, but with means rather. Science seeks not exemplary instances; for science no fact is despicable because it is little; true and false opinions are alike significant of the mind of the past. History is a science when by its methods we analyse our past; it becomes an art when for our inspiration we recreate the ideals which time had devoured, and when as politicians we apply them to life. With the disengagement of reason there is no doubt in society, as in the individual, some loss of spontaneity; moreover, the creative and the deliberative impulses instead of uniting in fertile marriage are but too apt at first to get in each other's way, to act at cross and even contrary purposes, and to mistrust each other, so that each faculty drags its images and counterfeits from the past to impose them upon its own times. Thus we are provided with static monuments of the past for admiration and example, rather than with the breath of its dynamics for our life, strength, and beauty. But the historical philosophy of an age gone by did not consist in its fashions nor even in its ostensible systems of logic. Of course, no category which becomes an instrument of thinking can ever become obsolete, but to imitate the past, as our modern mediævalists would do, is but a masque; as to form and custom history never repeats itself; it is in a restoration of the motive and the spirit of the past that we must cherish the perpetual fire to animate and renew the ever-changing forms which are never repeated. Man should ever be more and mightier than his past. It is, then, the mediatory office of such lectures as these to interpret the past sub specie historiae; to construct a historical or comparative criticism of life; to bring life and flexibility into law and logic, to warn us against the clumsiness of interpreting the ancients by translating our ideas and ways into theirs, as men have imputed Christianity to Virgil and Bacon to Shakespeare, and as the earlier critics of the Bible, in the immaturity of the historical sense, occupied them-selves with judicial criticisms of its contents: or conversely to warn us against the illusion of tricking out modern ideals in ancient trappings. From history we have to learn not only what our ancestors conceived and made, but also why they thought and acted so.

Once more, both as science and art, both in reflective and developmental criticism and in regenerative idea, does not history make yet another kind of appeal to us? mountaineer, familiar with a group of peaks as they had long appeared to him in his accustomed haunts, where again and again he had climbed their summits and explored their recesses, takes a new journey; he traverses a great valley, outflanks the hills, and suddenly from a strange vantage the once familiar peaks burst again into view, but with fresh features and in new relations. He gazes wondering at the transformation as it were of some wary herd which, while he was making his circuit, had silently faced round to watch him, but yet were not the same. In some solemn maze they have wheeled about each other, and have turned other faces to the wanderer. Thus, in no extravagant figure, I hope, I have sought to convey to you the new, the strangely new, regard of the constructions of man when, by our adventures in history, we come round to see them from other quarters and other prospects. We knew our own group of ideas; we had, if you please, scaled its summits and explored its recesses; but these ideas

cross fertilisation, infuse in us the rudiments of a new epoch? It has been said that as an emotional and instinctive being man is dateless, but as a reasonable being that he is of yesterday. In its youth society is sustained by authority—by authority of king, priest, or philosopher; myth is then its history; but when authority ceases and self-consciousness awakes historical reflection must begin. The society which ¹ On the occasions of these lectures portions only of a larger manuscript were read. For some consequent incoherences the author hopes to be parloned. No. 4500.

now reveal themselves with fresh features and in new relations. And thus the real forms and organic plan of our own age are manifested to us as never they were before: and, whether as artists or geographers, we discover how partial was that knowledge, even of our own life, which before we had believed to be intimate and comprehensive. We do not know the full truth of our own folk, our own walks, and our own phases of life until by travel of time and space we have outflanked them, and discovered their form and growth by other avenues and in other illuminations.

Now of medicine the history is, or until our own day has been, part of the history of natural science; and, indeed, the source of that philosophy of history which regards human societies as conditioned by circumstances; a conception in which Hippocrates preceded Comte, Buckle, and Taine. He, therefore, who would interpret the documents and the history of medicine must be at least initiated into all history. Physicians of the past, as of the present, were made of common humanity, and their life in medicine was not alien from their life, and the common life of their age, in love, work, and war. In the medical historian, therefore, the sympathy of humanity must be added to the accuracy of the scholar, and these to a technical equipment in our art. And in the age of Leonicenus, of Linacre, of Caius, of Fuchs, of Foesius, of Mercurialis, we made at the Renaissance a famous beginning. But the humanists, never really friendly to science, soon began to play us false. Disliking the raw anatomy of knowledge, with what they called "The Classics" they built a walled pleasaunce for themselves and dwelt therein, raising florists' blooms and out flowers, till Wolfe and Schliemann began to throw stones over the fence. They were of the kind of the old grammarian who said there could be no interest in a period when dπò governed the accusative.2 In classical periods we realise our traditional ideals, but if they claim by their stationary contemplation to govern development they stifle the spirit of history, not only in forms of words and artificial categories, but also by an assumption of "common sense." Now "common sense" never verified premisses, discovered origins, or interpreted natural means, orders, or ends. curious instance of this claim of common sense peeped out in a recent Times review of Mr. Jones's "Malaria and Greek History"; by this faculty the literary man supposed he could settle Mr. Jones's problem without even the pretence of repeating and verifying his researches. The study of language deals only with past experience; the past of the whole of mankind and of its chief persons, yet still of the past. New and enlarging experience is to be had not by common sense, but by new uses of the senses; and for the record of these fresh receptions new words, new phrases, new combinations of old words will be required. Thus a nation, or an individual, which is not continually returning to the direct uses of its five senses on advancing problems may collect experiences, but makes none. No small part of the labours recorded in our classical journals may have its narrow utility, but, intellectually and ideally regarded, seems to me to rank with chess problems. As studied statically, literature is deprived of the keys of growth, and of those tests of affinity whereby we learn to discriminate the formal and incidental from the essential and spiritual.

Although, then, in the first ardour of the Renaissance medical texts sprang into discovery, some were printed, and Medicine received its place in the universities as a liberal study, yet humanist fastidiousness so prevailed that no original medical texts followed those of the sixteenth century; nor did eminent scholars and commentators labour much even upon these. Naturally, therefore, among the incunabula medical history settled on its lees; the baser utilities prevailed, and, in the eclipse of Greek, Latin texts were more in demand. Hence, beside the invaluable recovery of Celsus, sprang up a thick crop of Isagoges, Articellas, and crude Latin renderings of portions of Hippocrates, Galen, Soranus, Rufus, and Oribasius, often derived through the anything but achromatic medium of Syriac, Arabian, or Hebrew. Thus, as I have foreshadowed, forms were copied; but the spirit—the return to nature—was

not imparted. The cruder stuff came over, the finer evaporated.

How hardly the sacerdotal crust of the false Aristotle and Galen was cracked and split up I endeavoured in my Harveian Oration to illustrate. And even when by the sledge-hammers of Vesalius and Harvey this crust was cracked the awakening was slumberous. In my own reading for these lectures I have been surprised to discover the faults of the texts, the poverty of criticism, and the sequacious dependency of medical historians one upon another, even to verbal repetition. For the edition and interpretations of our documents, as I have hinted, and as liberg and Wellmann have declared, the too rare combination of physician and scholar—as in our own Adams and Greenhill—is required. So it has been left to our own time-I had almost said to our generation-to see the first great edition of a medical classic; I scarcely need say that I refer to the Hippocrates of Littré. But since then our progress has become more lively. In Greek we have had the Oribasius of Daremberg, Ideler's * Physici et Medici Gracci Minores, Wellmann's Dioscorides, Puschmann's Alexander; in Latin three or four critical editions or commentaries of Celsus, and so forth.⁵ To Littre and Daremberg in France, and in Germany to Diels, Ilberg, and Wellmann we are largely indebted for the impulse they have given to the re-editing of medical texts, and for the fertileculture, both linguistic and scientific, which they have brought to the task. I wish we could show in this country a like accomplishment. It is mainly, I believe, to Professor Diels, upon whom the other day in Cambridge by bestowing an honorary degree we honoured ourselves, that we owe the great project of a Corpus Medicorum Graecorum from Hippo crates to Paul, now undertaken by the Berlin University under the auspices of the Associated Academies, and initiated by the Excerpta Vaticana of Philumenos, edited by that distinguished scholar, Max Wellmann. But after all our collections, probably after all we can hope to collect hereafter, the history of medicine will resemble the geological record in its breaches, in its fractions, in its faults, and in its embeddings of ancient and precious débris in later conglomerates. Cicero's conditions "excipiente memoria, prodendisque monumentis" are in our history too often wanting (De Div., I., 6).

I have regarded Rome as a vast dark background against which were projected the processions and conflicts of human ideas, as they gathered from east to west to pass before her, or through her, or to be taken into herself. It is necessary to my purpose then to see how this background was laid in; though in this place a survey of Roman origins must be so curt as bluntly to state for truths a set of opinions which, however probable, have as yet scarcely more than a provisional acceptance. The original, the lowest, and still perhaps the thickest stratum of the peoples of the region I may briefly indicate as Mediterranean, was and is a small slender dark race, long skulled, delicate in limb and feature, probably of neolithic descent, who buried their dead. This race was vivacious but not robust in body; not of large political capacity, being more factious than warlike, more clannish than national; vain and fickle but attractive, sociable, affectionate, even tender, yet wily, and with strange red veins of cruelty; but above all endowed with imaginative or at any rate with artistic gifts beyond the rest of the children of men. In the great peninsulas and myriad islands of the inland sea, and no doubt over a larger area, this race established civilisations of high culture, especially of artistic culture, which in its various modes and places is now known to us under such names as Pelasgian, Minoan, Aegean, Attic, Ionian, and so forth.

Now we are to suppose that northwards of this Mediterranean world there was an area of high pressure occupied by prolific races of alien stock, of greater physical strength and hardihood, of larger political aptitude, and perhaps possessed of weapons of iron. These various kinds of northmen were fair of complexion, and on the whole bigger of body; in temper warlike, dominant, stubborn, and ruthless.

² I find this construction was not a mere pedantic pleasantry. Liddell and Scott do indeed ignore it with severity; but in Sophocles the lexicographer I find many examples from Alexandrian and Byzantine Greek—for example, Porphyry, Hermas, Leo Grammaticus, &c.

² Science and Medieval Thought. By T. C. Allbutt, Harveian Oration, 1901. Cambridge: University Press. ⁴ Ideler published this work in the last year of his life (1841-2) at the age of 33. In him we had to lament a death even more premature than

age of 33. In him we had to lament a death even more premature than of Daremberg.

5 Another edition of Celaus is announced by the Saxon Society of Sciences under the care of F. Marx. There are rumours of the discovery of another and much earlier MS.

In contrast to the earlier race they burned their dead, and thus in later days the two customs continued side by side. We must presume that some period of time, probably a very long period, elapsed before, by their own increase or by the pressure of other races upon them, these fiercer northmen or mountaineers, as in the cases of Elam and of Assyria, became restless; pressure rose higher and higher, and the thrust southwards irresistible. Especially, as it concerns us at present, their periodical irruptions began and increased by way of the Balkans. Under the various names of Achaians, Thessalians, Dorians, Siculi, Umbrians, Sabines (probably akin to Umbrians), Oscans, and so forth, kindred tribes of warriors swept downwards on the peninsulas of Greece, Italy, and Spain, slaughtering more or less, but for the most part subduing and enslaving the more slenderly built dark people probably already enervated by peace and indolence. The later descent on Rome of a coalition of "Keltic" and other tribes under Brennus is more within common memory. "Gauls" and "Kelts," in one shape or another, were probably continual immigrants.

It is important to remember that, although in the Greek peninsula the Dorians swept downwards to Sparta and the South, into the southern half of the Italian peninsula the northern tribes scarcely penetrated. From geographical causes this area was more open to occupation by way of the sea, and was thus invaded from Greece; and the history of the flourishing harbours and cities of Southern Italy indicates that it was not malaria which at that time arrested or checked the immigration from the north, but the natural features of the land and coast. Southern Italy, in the times of which we are speaking—say from c. 570-280 B.C., when these cities submitted to Rome -was not Italian even in name, but in name was Magna Graecia and in character was Greek; and this character, until blighted by malaria, is maintained. The Italiote Greeks held their general assembly at Heraclea; the later Thurium was an outpost of Athenian The people of this region were greatly reinforced, moreover, by the flight of kindred folk chased from Greece to "Saturnia" by the Dorians and their kind. In the time of Augustus Dr. Verrall speaks still of the Hellenic city of Naples, Hellenic in its society, culture, and festivals; it became filiated to Rome late and reluctantly. I have long held the belief that rivulets of this Greek blood and culture. choked indeed by oppression, disaster, and pestilence, were yet one source of those springs of new culture which broke forth in this region in mediæval times—of the inspiration, so various in its manifestations, of Paulinus, of Telesius, of the physicians of Salerno, of the savants of Naples, and possibly of the Pisani. Frederick the Second, by the library he collected, fed these springs, but he did not make them. Dr. James tells me he thinks that before that collection there were not a few Greek MSS. in Calabria. The natives of Calabria of 1155 A.D., says Gibbon, were still attached to the Greek language and worship, and in mediæval times passed themselves off as Greek. I may note that the first professor of Greek in a Western university was a Calabrian. Legrizio Pilato, at Florence, who pretended to be a Greek of Thessalonica. He is said to have translated Homer into Latin for Petrarch. If I remember right he was forcibly described by Boccaccio as a dirty, grumbling little beast. He had the honour, however, of being killed by lightning on board a ship in the Adriatic. The archaeological spade work so much needed in Calabria will doubtless reveal hereafter in richer measure the distinctively Greek works and qualities of this region; and it will do more. Even to-day the Greek walls and tombs of the fourth century B.C. laid bare on the desolate waste of Metaponto read us not only the old homily of the mutability of human things, but the new and unlearned lesson that without Medicine there can be no abiding city.

About the time of the foundation of Rome then a large under population of the slight dark people was submitted to the ascendancy of more vigorous northern tribes, of whom Umbrians and Sabines may be taken as types. But this was not all. By way probably of the Po, but thence extending

over the Apennines, a strong, a strange, and a gifted people, from whom the region of Etruria derived its name (Rasena in their own tongue), had in some foretime of history, perhaps about 1200 B.C., established themselves by fortified cities in northern and central Italy. As from this race Rome took much of its nature and customs, we must digress for a moment to learn what we can of the obscure story of its origin and affinities. We shall consider hereafter the close connexion of Latin Medicine in its later history with Asia Minor, a side of the story which the recent essay of Mr. Hogarth on Ionia has set very ably before us. To proceed after my summary fashion, we will regard Asia Minor as controlled by a great power whose history lies in the mists of the past, every key to whose language is lost, and, indeed, had disappeared in Strabo's time. This power for we can scarcely indicate it less vaguely—was in its might continental rather than of the seaboard, and the seat of its power in inland cities. It seems to have consisted in a lordship of Aryan invaders from the North, by way of the Black Sea, over native races which in ancient times, under the names of Carians, Lydians, and the like, occupied also the Levantine seaboard; and ancient records and modern researches indicate that what must have been a vast host of these people, Carians or Lydians, thrust out, perhaps, by the North Cappadocian overlords, whether by sea, as may be supposed from their place of origin, the tradition of their advance from south to north, and their Italian history as sealords, "pirates," and great traders, or, as Mommsen supposes-less probably salra tamen ejus laude, by the Balkans and Aquileja, established themselves in Italy as Etruscans and brought with them not only some literature, some astronomical science, and a rich art, but also customs and ceremonies of such potency and tenacity as to have entered into the construction of ancient Roman society, so deeply as in no small part to have survived in the Roman hierarchy from then till now; for the Roman Ceremonial, aswe see it, is not wholly, perhaps not chiefly, "Aryan." on the physical side, in their fleshy bodies ("Tuscus obesus"), almond eyes, big noses, and gorgeous tastes, so in their caste and stationary policy, customs, divinations," magical and sepulchral ceremonics, dances, and festivals, this people was in character strongly oriental; and their divinations may have been witnessed by Abraham himself on his entry into Hebron. Their trumpets are said to have been Lydian, their pipes Phrygian. "Tuscos Asia sibi vindicat" was the record of Seneca. Profoundly as the Etruscans differed from the Umbrian or Sabine Roman, especially in respect of artistic faculty, yet in warlike energy, military caste, doggedness, hard and exclusive temper, aristocratic supremacy, and curiously enough in the status of their women, the two masterful races had so much in common that by their fusion Rome was created, and a permanent ascendancy established over the weaker but still multitudinous and, no doubt, somewhat mongrel people, or plebs, which we have regarded on the whole as aboriginal. We read of the "parcus Umber"—the closefisted Umbrian; of the "tetrica et tristis Sabinorum disciplina "—the sombre and puritanical discipline of the Sabines, who were the backbone of old Rome." The patricians and their flamens seem to have worshipped Sabine deities. In broad outline, then, the background of Rome, for us the soil on which Roman medicine was to be cultivated, consisted of the original small, dark race,

* Divinations by entrails, flight of birds, &c., rather than by the astrology of the Chaldeans. Certain of the gods of ancient Rome were

O'Vide paper by Mr. Stuart Glennie (meeting of American School in Rome, December, 1908), on a tomb of Pelasgic origin at Quinto Fiorentino (near Florence) which gives further evidence of a Pelasgic period between (as the author puts it) "the Ligurian and Etruscan epochs of Roman (Italian?) history." If I do not enter into such vexed questions as of the round and long-headed dark people of mid-Europe, and of Gael and Goidel, it will be readily forgiven me.

That ornaments and utensils like those of Etruscan provenance have been found in Rhaetia is true, as I myself observed under Professor Pigorini's kind instruction many years ago, at Matrai, Trent, and elsewhere. But all bronze civilisation was not Etruscan. Moreover, the Etruscans burled their dead; the Rhaetians, like all the Hallstadt and Villanova folk (Umbrian') cremated. The Sabine families in Rome cremated. At Matrai bronze fibular, coral and amber have been found together. Etruscan sway probably extended far beyond its realms, as, for instance, to the L. Benacus, the "Lydian Lake" of Catullus. The wonderful beauty and genius of their crafts are preserved for our admiration in all great museums, especially in the Vatican, in the Castellani and in Florence, and their work is described in Dennis's "Etrufia" and later books.

8 Divinations by entrails, flight of birds. &c., rather than by the ⁷ That ornaments and utensils like those of Etruscan provenance have

astrology of the Chaldeans. Certain of the gods of ancient Rome were of Etruscan importation.

9 The "Lanuvinus ater atque dentatus" ("with fine teeth," as we gather from the context) was probably "Iberian." This passage, to which I have lost the reference, alludes to the practice of rinsing the teeth with urine; the whiter the teeth and the redder the gums the more of this disgusting lotion must have been used! Urine has not even yet wholly disappeared from the nursery pharmacoporia; there are still crones among us who would use it, like "fasting spittle," for children's sores, and especially for childlains.

reduced to formal or virtual servitude, degraded but still vivacious and factious, and of an ascendant and irresistible aristocracy, mainly of northern invaders, but interpenetrated by another ruling race of oriental habits. It is remarkable, and belongs perhaps to the military avocation of Rome, that while in religion the omens and auguries of the Etruscans persisted and even prevailed, their notable artistic qualities, unless in the mighty architecture 10 and cloacae, seemed under military rigour to have been blighted, or in later times to have been stifled in luxury until the Renaissance, when in Tuscany especially it reappeared. In early times they were warriors, hunters, pirates, and athletes; we all remember the later description of them : -

> "Semper inertes Tyrrheni; At non in Venerem segnes nocturnaque bella,
> Aut ubi curva choros indixit tibia Bacchi;
> Expectare dapes et plena pocula mensae
> Hic amor, hoe studium."
>
> Acn., xi., 732 (vid. et Catullus, xxxix., 11),

Whether in war, in religion, in literature, or in any high purpose of man, when forms are not kept fluid by an ardent and expanding spirit, induration and corruption set in. We have spoken of one of the lessons of history—that so long as we keep mind and passion free forms will take care of themselves and be transformed in ever new revelations of beauty and strength. Thus of the so-called Iberian or Pelasgian people, the artistic and imaginative qualities, which in all the Ægean cities were notable and in Greece attained to incomparable achievement, in Rome seem to have been crushed under the weight of the State; even the melancholy harp of the oppressed seems to have been muffled or silenced. Yet, such were the undying gifts of this brilliant race to an ungrateful world, that wherever they broke forth again into some freedom, in realms—as in Gaul and in Spain where the fury of the northern invaders was appeased; or in remoter fastnesses such as Brittany, Wales, and Ireland, where they were, so to speak, squeezed out at the edges of the conquering principalities, their song was heard again; no longer, indeed, joyous, dominant, supreme, but wistful and symbolic, dreamy and unsubstantial in the sense of uncon-densed mystery rather than of chaos; yet, as in the Ireland of the eleventh century, soaring again; in Alfred and Charlemagne educating not kings only but dynasties, and in France, in Belgium, in Franconia, in Switzerland, in North Italy (Bobbio) teaching and illuminating the new Europe; so that to this remnant in the far west, as to Greece, the old phrase may be adapted 11—Hibernia capta ferum victorem cepit, et artes Intulit agresti. Their creative work, like that of the Jews, if it has not gone to the making of nations, has built up the spiritual kingdoms of mankind.

And of this race, not as the artificially degraded plebs of Rome but as the spiritually free, if politically sub-ordinate, Pelasgic Ionians of Greece and Asia Minor, we have to speak as protagonists of Medicine in the arena of Rome; Rome as we have seen her grow up-austere, masterful not in ideas but in material predominance; yet, being ignorant and infused with Oriental affinities, superstitious, and in religion ritualistic and pharisaic; a people entrenched also in a folklore and a folk medicine of their own, and worshipping a mob of pallid deities each, as elsewhere so in Medicine, personating rather than creating not only every chief system and function of the body but every stage of each. For each stage of labour there was its peculiar deity; and of limbs even the harmless, unnecessary navel had its divine warden. Thus, as Bloch says in Pagel's "Handbook," "the religious cult of Rome contained an entire pathological system"—and consecrated it. Mommsen had said also that this religion contained every function of life. Even the itch was not without its goddess. Thus for the early and religious Roman a scientific medicine was impossible. How in the decay of faith and by the immigration of the busy, curious Greek, this "cake of custom" broken up we shall consider hereafter. Soranus bluntly declared that the obstetrician should be "άδεισιδαίμων." It

were scarcely worth while for the purpose of these lectures, even if I had the mythological knowledge, to distinguish in the chthonian and olympian hierarchies between the gods of the Etruscans and those, on the one hand, of the aborigines, and, on the other, of the northern invaders. Into the populous circles of Greeco-Roman divinity almost any new god was welcome who would play in the old game. The Etruscan worship was, however, in the main nature worship, and its deities chiefly chthonian. And among all the aboriginal Mediterranean races the chief deity was, and still is, the great and fertile Earth Goddess-Dea dia, under various names-Cybele, Rhea, Ashtoreth, Diana, Orthia of the Spartans, Artemis of the Ephesians, and so on. In his rare hymn to Diana Catullus, after saluting her as the mistress of woods and fountains, as Luna, as Trivia, as the patroness of corn and fruits, and as Tu Lucina dolentibus Juno dicta puerperis, exclaims:

> " Sis quocumque tibi placet, Sancta, nomine : Romulique Antiquam, ut solita es, bona Sospites ope gentium." Catull., Carmen. Sec ad Manam.

And, as Mr. Hogarth points out, in the General Council of A.D. 431, when the Nestorians were condemned, the Madonna had taken this place in the hearts of the people, and has held it ever since, both in the Roman and the hastern Church. And I may remind you of a passage in the first volume of the "Stones of Venice": "The Madonna is in great glory, enthroned above ten or dozen large red casks of three-year-old vintage, and flanked by goodly ranks of bottles of Maraschino and two crimson lamps in the evening, when the gondoliers come to drink under her auspices, she will have a whole chandelier."

We cannot wonder that the Solemn City, the seat of so grave and haughty a race, mistrusted and repulsed the plausible and versatile but yet alert and intellectual Greek. When Greece was at its height Rome was the land of the soldier, the peasant, and the small trader; a people without art, literature, or philosophy. It has been aptly said that the relative geographies of the two peninsulas, Greece and Italy (for the elder Greeks the land of Hesperia), especially in respect of harbours and seafaring, were such that they turned their backs upon each other; and the mission of Rome was westward. Until the third century, except at Cumse and a little later at the remoter Ancona, the only fair harbour on the Adriatic aspect, the contact of Greeks with Rome, if any, was only by way of the southern provinces. It was not until four centuries after the time when Rome was little more than a dyke and a palisade commanding an agricultural domain that she established diplomatic intercourse with Greece, 12 and that a Greek freedman of Tarentum became the earliest of Latin poets. After Metapontum, Tarentum, a great city upon a rock, founded by Dorians of Lacedæmon in 708 B.C., produced between 400-330 B.C., its finest coins, and led the southern confederacy until its reduction by Rome in 272 B.C.

So far, then, as we have analysed the sources of Roman medicine we discover a broad and deep but far from pellucid stream issuing from and compounded of the folklore of the small dark people we have taken as aboriginal, of the Etruscans, and of the invading northern tribes whom we may indicate roughly as Thessalian. It is obviously impossible, were it worth while, to trace Roman folklore farther and severally upward to these three constituent founts; we must content ourselves with some note of its characters as we find them in respect of medicine when Greek physicians first appeared in Rome. Into that main stream were now poured three fresh tributaries. Two of these tributaries were medicine of the Greek clinical or Hippocratean school, which again was twofold: The earlier current of Italo-Greek origin, dating from the sixth century, deriving from the following of Pythagoras, Empedocles, Philolaus, Alcmaeon, at Achaian Croton, a school second only to Cos, from Metapontum, also from the school of that great physician, Diocles of Carystus, probably at Athens; and the later but more direct current, reinforced by the Alexandrians, of which Celsus is our exponent and eminent example. The third tributary was

¹⁰ It is said that the great temple of Jupiter on the Capitol was of Etruscan architecture: but great examples of it in enormous city walls, uncomented but everlasting, in the arch with uncomented keystone, and in exquisite specimens of jewellers work are well known to all travellers interested in ancient history. The Roman house is supposed

to be on Etruscan plan.

11 To speak of "wedding the Celtic vivacity to Greek technique,"
unless in certain late and special instances when Greek had shrunk
into a "technique," seems to me, ethnologically speaking, misapprehension.

¹² The well-remembered embassy of Diogenes, Critolaos, and Carneades to the Roman Senate praying for the reduction of an indemnity. The decree of expulsion of the "philosophers," a few years previously, must be taken as a sign that Greek ideas were then spreading in Rome

the Hellenistic medicine of which Asclepiades was in Rome virtually the first, as Galen was the chief example. In an inchoate society, founded as was Rome, in the year 759 B.C. on some federative basis, the faculties of religion, law, custom, medicine, agriculture, could not be fully differentiated; and we shall see how long a time it took to release medicine from other functions, and especially from religion and custom; and even then how vehement were the later conflicts and reactions between clinical and scientific medicine, priestcraft, and folklore.

Folk medicine, whether independent or still engaged with religion and custom,13 belongs to all peoples and to all times, including our own. It is not the appanage of a nation, it is rooted in man; in his needs and in his primeval observation, instinct, reason, and temperament. Still it is largely modified by the kind of man; for instance, in the Greek folk medicine was soon separated from theurgic medicine, and even from mysticism; so that a professional medicine was more quickly conceived and built up. The necessarily sceptical attitude of professional medicine whereby the infinite complexity of function and the baffling conditions of observation are understood, an attitude which even commended it to the subtle, inquisitive, and irresponsible apprehension of the Greek, was for the ceremonial and slow-witted Roman even more intolerable than it To folk is for our own fellow-countrymen to-day. medicine doubt is unknown; it brings the peace of security. If infallibility failed! why, the game was not played properly. From Cicero we learn, as we learn in modern Rome, the potencies of an inflexible ritual exactness. First of all, the right deity for the job had to be discovered; let us say, for fortune Mercury, Neptune for a voyage, Robigus against the mildew, and so on. Then he tells us how there was one priest for ceremony, another for formula. If a word was altered, if a flute-player rested, or if an actor stopped short, the rite was broken; all must be recommenced. Prayer and personal observance had to be no less pharisaic.14 So in medicine; the proper god or godling had to be ascertained; then the proper formula of magic utterance to accompany the drug or operation, which, as we read in Cato and elsewhere, was to be recited with rigid precision.

Of supernatural or magical observances the more specific were "binding and loosing," the virtue of laying-on of hands, the discovery of names, lustrations, holy wells, dreams and their interpretation, temple incubation with its corresponding donaria, and the fantastic notions of signatures and symbolisms, of sympathy and analogy, of talismans; all of which observances entered deeply into early Roman as into other folk medicine of those and of later times.

These several veins of folk medicine, worked out at some length, were necessarily omitted from the lecture.]

Having now indicated rather than described the theurgic and magical elements in Roman medicine, I will with your permission step back to take up my story again with the household and folk medicine, and particularly with the practice of Cato the Elder. The more remote and secluded the society the more freely domestic medicine flourishes, as common experience tells us. In the agricultural and pastoral provinces of Scotland, where journeys were long and toilsome, the housewife's medicine closet was the busier. The lairds and their wives "doctored and drenched themselves and their dependants with all sorts of weird and wonderful decoctions," mixed according to manuscript collections of recipes handed down from generations beyond memory. And in the English counties this selfreliance was not much less, especially among those of the gentry who rarely travelled far from home. I remember hearing that the great sportsman, Mr. Meynell, to get rid of the gout for a hunting day, would take on his own counsel two strong calomel pills and a teaspoonful of colchicum wine in a glass of hot gin and water; while the only stimulant he took with him in his flask was tincture of rhubarb.

is in some such light as this that we must regard the medicine of Cato-as one of the many arts and home industries which in early societies are not yet differentiated. Though not noble yet probably of old Sabine stock, Cato, by his rude honesty, energy, strength, and austere ascendency -ferrer prope corporis et animi, as Cicero says in the De Senectute-rose from quaestor to be aedile, praetor, consul, and censor. Like nearly all the old Romans, and like many Swiss landholders down to our own day, before the importation of Sicilian and foreign grain, and presumably before the introduction of malaria, he "tilled his own lands with his own hands." Now we learn from Pliny that Cato practised medicine by the guidance of a certain Commentarium, or traditional recipe book in many chapters, extant in Pliny's time (Hist. Nat., xxix., 8), the contents of which, so far as conveyed in the Historia Naturalis, are partially known to us. Many of the prescriptions were futile, many were filthy, though in later generations they became filthier and filthier; some, however, were efficacious enough. Local and general narcosis were practised after a fashion. find the same or similar recipes in Dioscorides, Scribonius, and other such collections, we linfer that Greek and Roman drew from the common sources of an ancient medical lore.

The best known of Cato's medical means are the homely prescriptions of cabbage and wine in various forms for almost all internal complaints, and his magic sentences, gibberish 15 which was uttered over both surgical and medical cases to expedite the cure. Now, although I have not met with the suggestion, it must have occurred to many medical readers that Cato's cabbage, in days when fresh meat was not to be had in winter, or certainly not by the lower orders and the slaves, probably acted very effectively as an antiscorbutic, and that by this virtue its repute as a medicine was made and sustained. The cabbage - Olus under its more general name, more specifically Brassica—was regarded seriously as a remedy long before Cato's time; by the Etruscans, for instance, and by the Greeks—at any rate, by the Sicilian Greeks of the tradition of Pythagoras, as by Epicharmus, a pupil of Empedocles, who wrote a treatise in the Doric dialect in which cabbage was thus recommended 16; and, indeed, by physicians of no less distinction than Diocles, and Chrysippus the master of Erasistratus. If, then, Cato erred, it was in good company. The variety in use as a medicine in early times was probably the colewort, or sea cabbage, which has a slenderer leaf and a more bitter taste.

It may be asked why we should occupy ourselves with Cato, who, whatever his merits as a patriot, was, from the point of view of scientific or artistic culture, a gruff, obstinate, narrow-minded rustic, whose violent denunciations of Greek physic were but illiterate prejudice. I think in this respect historians have done Cato some injustice. In no small part we, as physicians, have derived our impressions of Cato from the babbling of Pliny, who had the vanity and garrulity of Boswell without his reverential sincerity. But in Plutarch we have a truer appreciation of Cato. It was said that he took to learning Greek "in his old age"; "belike fearing," as Sir Philip Sidney puts it, "that Pluto understood not Latin"; or, as Professor Mackail suggests, because of his admiration for the younger Scipio. But Cato was no such ignoramus; on the contrary, for his time he was a learned man. stoicism, stern and inhuman as it was no doubt when compared with the milder interpretations of Panaetius, he owed nevertheless to Greece. And, before Celsus and Varro, he was an encyclopedist—a "summist," whose chapters, not only on military matters and agriculture but also on law and history, were extant and respected in Cicero's generation. After his African campaign, and some nine years before his consulship, he discovered Ennius in Sardinia, brought him to Rome, and learned Greek of him at an age nearer 30 than 80 years. So that his Greek studies, were they more or less, extended over some half-century of his life. So far, then, from regarding Cato as a narrow and arrogant boor, may we

¹¹ Mr. Warde Fowler points out that the rites of Rome, whether Btruscan or Old Italian, are to be regarded separately from the religion, much of which came from other sources.

14 I read this year in a certain church, and over the signature of an eminent archbishop, that 40 days of Indulgence would be obtained by saluting a particular crucifix, and reciting one pater and one ave. But for one unable to go to this image 20 paters and aves would be required: one for each of the 14 stations of the Cross, five for the five wounds, and one "à l'intention du saint Père." Thus tenacious is ritual tradition. In the recent controversies around the death-bed and burial of the late Mr. Tyrrell much curious matter of this kind was notable.

¹⁵ From our point of view, gibberish; yet even gibberish may have its specific interest. It is probable that not Cato's incantations only, but those also of other times and peoples, are the degraded remains of some ancient tongue. Cato's "Daries, dardaries, &c." may be remnants

¹⁶ Vide Schneider, Script. rel. med. Brassica = $\kappa\rho\delta\mu\beta\eta$, "crambe repetita"; in the late Greek lexicon of Sophocles, $\kappa\rho\delta\mu\beta\iota\nu=\kappa\rho\delta\mu\beta\iota\nu$,

not come as near to the truth if we regard him with Ennius as one of the founders of Roman prose, and put him in some low degree of comparison with Petrarch, whose diatribes against physicians were no less unmeasured and indiscriminate? Can we be surprised, on looking back to their several epochs, that the harsh puritan and the petulant humanist, the one and the other alike without scientific insight, denounced the parade, the greediness, the luxury, and the glosses of medical adventurers as they saw them? If Petrarch could not understand or foresee the growth of the scientific thought of his own age, shall we blame Cato for that he did not foresee Asclepiades or Galen, nor perceive that in 150 years Rome would be dependent on Greeks not for medicine only, but also for its science and philosophy, and for much of its exquisite and derivative literature? "Belike" Cato, had he foreseen it, might have thought these Danaan gifts dearly bought at the cost of a sterner patriotism, of honour, and of righteousness. However, in all military periods of society-except, perhaps, that of Athens-the craftsman, whether of fine or practical art, has been regarded by the noble warrior with contempt; even schola-leisure itself-in such a period is humble.

It is improbable that Cato, versed as he was in annals and customs, would have accepted the absurd assertion of Pliny that for 600 years Rome had done without physicians, a new-fangled order, and, moreover, a canker in the State. Rome, in all its wars and plagues, must have had more than a domestic medicine, some accredited practitioners, even if of a Homeric order. For example, even in the reign of Numa the Cæsarean operations both for removal of a living child from the dead mother, and conversely, were imposed by law.17 A liability for this service in case of urgency was imposed upon all citizens, it is true1"; but these and other operations, such as the semi-sacred operation of trepanning, those for fractures and dislocations, for fistula, stone, &c., which we know were regularly and successfully undertaken. were no doubt as a rule committed to persons of professed dexterity. We know that there were many Greek physicians in Rome in Sulla's time; and certainly in the first century before Christ the "medicus" was plainly distinguished from the crowd of barbers, quack salvers, and wizards, for in the Digest, L. 13, 1, we read, "Medicorum quoque eadem causa est quae professorum nisi qued justior," and the law goes on to include orderly specialists, as for the eyes, ears, and teeth, for fistula, &c. 19 But "Non tamen si incantavit, si imprecatus est." which are not of the kind of medicine. To do more than note probabilities concerning ancient times of which we have few historical data is otiose; and it is only too certain that in and after Cato's generation many, perhaps most, of the medical adventurers who flocked to Rome were a gang of impostors who stank in the nostrils of high-minded men. Notwithstanding, secluded as early Rome was, it seems impossible that the learned and honourable traditions of the medical schools of Magna Graecia, of Alexandria, of Cnidus, and the rest can have passed over and around Rome, even into distant provinces of the West, such, for example, as Marseilles, &c., and yet left the Mother of Nations—not even then a very simple society—as if they had never been. Pliny was talking of times long before his own, yet he knew enough of Chrysippus, at any rate, to abuse him, and gives his case away when he says: "Non rem (medicinam) antiqui [our ancestors] damnabant, sed artem [the craftsmen]." How can we say there were, and had been, no physicians in Rome before Archagathus, when in the time of Plautus, the contemporary of Cato, we note the Greek cast of his plays, and note specifically such remarks as "Ibo ad medicum atque ibi me toxico morti though we can apprehend Cato's angry repudiations of them. Plautus speaks also of the Roman coin numus (nummus = about 1s.) as being not enough for a doctor's fee (plus jam medico mercede est opus). Again, Amphitryon exclaims, "I have looked for him in the market-place, in the spice shops in medicinis est tonstrinis." 20 There is in Plautus a good deal more of There is in Plautus a good deal more of

17 Compare the old legends of Zeus and Athene, of Bacchus (in Virgil and Ovid), and even of Esculapius, as well as such celebrated cases as those of Fabius and Scipio Africanus.

medicine with a colour so local that it clearly was not a hearsay medicine from Greece. Let us turn, for instance, to the fussy doctor in the Menaechmi-written 200 years before Christ—making his visits and boasting of his grand patients. He appears, moreover, to have had a Home in which he received sick persons for special treatment—"Ad me face uti deferatur. Soin quid facias optumum?" (that is, for a course of hellebore for twenty days). Lucilius again uses many medical words and phrases—not a few, such as cataplasm, &c., taken from the Greek, as if Hippocrates had been filtering in between the generations of Ennius and Lucilius. We note from Plautus also that skin diseases were evidently rife in those days of dirt-Scrpere uti gangraena mala atque herpetica possit.21

Varro (Marcus Terentius) was a full century younger than Cato; he belongs indeed to Cicero's generation, yet he remained a Catonic sort of person; he also was a "summist" of the kind which in Rome Cato initiated, and Celsus, and may we not add Virgil, whose Georgics were written about the same time in Rome, carried to its culmination. In Varro's nine Libri Disciplinarum medicine was the eighth book. In the time of Cicero, who was well versed in medicine, and even in that of Aulus Gellius (Noctes Att., xviii, 10), a knowledge of the broader truths of medicine, and especially of bodily hygiene, was still considered part of the education of a man liber liber-aliterque institutus; smatterings which, in the contemptuous phrase of Galen, had degenerated into "philiatry." In the volume of his output Varro almost equalled Galen; but all is lost, except his De re rustica and a few fragments. He seems, however, to have given to Rome less of medicine than of literature, antiquities, and "natural philosophy," especially mathematics; while to popularise "the higher philosophy" and rhetoric was Cicero's work. However, Varro says much on the salubrity of sites; and Haeser draws attention to the following remarkable passage: When the fleet and army of Pompey were at Corfu a pestilence broke out, and the houses were full of sick persons and corpses. Varro, however, "immisso fenestris novis aquilone, et obstructis pestilentibus, januaque permutata, caeteraque ejus generis diligentia, suos comites ac familiam incolumes reduxit."

While such was the general medical equipment of a Roman gentleman, and while also under the Republic we read of medici rich enough to own slaves, yet the technical practice was chiefly confided to domestic slaves. But we are not to suppose the slave of those times to have been what the haughty Roman took him for, nor to judge him on our prepossessions derived from negro slavery. Roman medical slave was usually a Greek, and his price, by law fixed at not less than 60 minae, was a high one. slavery was a convention enforced by the hardness of the times; the captive was not usually of an inferior race, but in brains as well as in dexterity often superior to his owner. His bondage was an accident; for on manumission his personal qualities often commanded such professional success and independence as to dissipate the sense of gratitude and attachment, and thus to give some check to manumission whereby valuable services were often lost to the patron. Conversely, whatsoever the personal virtues of the slave, the debasing pressure and conventions of that status must have thrown some shade upon his character, so that too often the Greek, by nature slippery and inconstant, as a freedman-and even between the libertus and the Roman there was still a chasm-betrayed himself as a stealthy and venomous rascal.

Of medical colleges and public medical offices I will treat hereafter, but, speaking generally, it is true that in Rome itself there was no kind of professional test or standard to discriminate sharply between such medici as the gentle and accomplished freedman Antonius Musa or the botanist Lenaeus, and villains like Vettius. As manners softened and intelligence and skill compelled recognition the position of these slaves and freedmen improved, especially under the enfranchisements of Julius and Augustus, but their calling

be "manibus puris, capite operto" applies, I fear, rather to religious rites than to antisepsis. The midwife of the clandestine confinement in the Andria of Terence was a drunken slut. I need scarcely direct the reader to Meniere's delightful books on medicine in the Latin Poets,

those of Fablus and Scipio Africanus.

15 In the Lex Regia, "is mater praegnans mortua sit fructus quam primum caute extrahatur."

19 The very word "medicus" itself is of early Italian derivation.

20 Plautus speaks also of interpreters of dreams and omens and of a charmer against disease—"praecantatrix." That the midwife should late allusion to it.

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could not well progress nor gain public recognition as ars prudentiae majoris. Thus it was that, even under the Empire, Roman medicine remained almost wholly Greek, for the few physicians, such as Scribonius Largus, who bore latinised names, were nearly all of them Greeks.²²

How are we, then, to explain the enmity of Cato; and the malice of Pliny who, while he endeavoured to ignore the physicians, could not refrain from signifying by his indiscriminate if not wholly unjustifiable abuse that they existed, and among the "antiqui" had existed, only too abundantly? Now, the fault of these physicians was not so much that they were crafty and rapacious as that their craft and rapacity were not of the Roman sort. As the physicians in Rome were practically all Greeks, their ideas were Greek, so Greek that no Roman could enter into them; furthermore, these Greek notions were not only mischievous in medicine, but in their more general tendency were socially subversive. The scent of a ruling class, secular or ecclesiastic, for inquisitive or esoteric opinions is amazingly keen, and its resentment ruthless. How haughty, ruthless, and unreceptive was the temper of the conquering races in Rome, how sacred were their religion and rites, how rooted their superstitions and folk medicine, how obstinately impermeable their qualities and customs to new ideas, and how incapable of elastic adaptations, we have already seen. We shall not wonder that all these conservative opinions and instincts should have incited, especially in Republican Rome, an alarm against foreign ideas. The old Roman of the type of Cato, austere and imperious as he was, was also, consciously or subconsciously, apprehensive of the instability of his State. Built as it was, not only upon slavery but also upon the quicksand of a restless, excitable plebs, mostly of alien blood, its security could be maintained only by the rigidity of the old iron will, consecrated tradition, military framework, and hardy strenuous habits. Thus the dominant class was clinging fiercely to creeds and rites whose validity they dare not suspect, and to intellectual conventions which, dare not suspect, and & Intellectual conventions which, already sapped by Hellenic curiosity, were ultimately by Christianity to be overthrown. This issue the old Roman dimly but uneasily foresaw. And is it too fanciful to surmise that no less dimly, but by some community of racial instincts, the bent of the subject or plebeian Roman was apt to assimilate the notions of his distant kinsfolk of the Aegean, and to be attended by the fields passions the irresponsible wit and stirred by the fickle passions, the irresponsible wit and faction of that clannish primeval race then, as before and since, intolerant of rank, though submissive to despotism? Such may have been Cato's presages; such, at any rate, was the upshot. For with spoils came luxury; with the deletion of Carthage ease and security; with intellectual curiosity the sapping of creeds and the decay of patriotism. It is scarcely true, I think, to say that Rome was unstable for lack of a middle class; the equestrians took some such place; the instability lay in the rift between the upper classes and the plebs, an unassimilated and naturally turbulent mass, mixed with the nation but not mingled or organised with it.

Note.—The bibliographical references are reserved for the fuller and more formal publication of these Lectures.

LECTURE II.

PRESIDENT AND FELLOWS, -As Coleridge said of Greek literature so of Greek medicine, it is "a superfetation upon and not an ingredient in the national character." The first physicians to wend their way to Rome were of those who we know were employed about the gymnasia and the arena.23 But on the common knowledge of the standard histories, the trita scholarum, I will forbear to dwell. Archagathus arrived in Rome about 220 B.C., some 20 years after the Punic war for the cornlands of Sicily. He was one of the first to feel the brunt of Roman indignation at the blasphemy of mistrusting the protecting gods, and at the implety of supplanting the tried resources of the Penates. Was it only this prejudice which turned his title of "Vulnerarius" into that of "Carnifex"? Was he a barbarous surgeon or was this story only Pliny's fun? For, on the other hand, he certainly was accepted as a Roman

citizen, and a taberna was assigned to him at the State expense in the city near the Forum Marcelli. Whether or not he was subsidised as a public physician - δημοσιεύωνafter the Greek fashion is an interesting question, for if so, as we shall see later, this office must in Rome itself, though not in the provinces, have fallen soon into desuetude.

Passing from Archagathus over obscure names and traces, I would concentrate our attention, in respect of the effective invasion of Rome by Greek medicine, upon the great name of Asclepiades. It is one of the flouts of time that the reputation of this great physician had fallen, not only into neglect, but even into obloquy; and the belated duty of restoring his name and place, after the lapse of nearly two thousand years, to their merited honour has been reserved for our own times. I say after nearly two thousand years because, although Asclepiades was born somewhere between 130 and 124 years before Christ, and 30 years later was famous, yet his fame suffered no eclipse until the star of Galen arose; then the torch of Asclepiades was quenched. Never a voluminous writer, his works, scarce by the fourth century, by the sixth century were lost; so that his reputation was at the mercy of any idle scribbler whose malice was thus placed beyond direct confutation. Something like the same neglect befell Celsus, whose treatise on medicine was also practically lost until the fifteenth century, when it was rediscovered, as it is said, by that respectable Pope Nicholas V. The facts according to Sabbadini, are that the first and less correct MS. was found at Siena by the humanist known as Il Panormita; the next and better one came to light soon afterwards in the Ambrosian Library. Portions of Celsus, however, had probably survived also in the obscurity of monkish closets. The work was not printed until 1478, at Florence. It is interesting to us to note that Politian took some pains with the text of Celsus, and that among those who attended his lectures were Grocyn and Linacre. 24 But Celsus was a Roman gentleman and a layman, whose treatise on medicine did not arouse any jealousies, and whose credit was safe with his own coterie. The spiteful arrows of Pliny were shot elsewhere. Neglect, therefore—unmerited neglect—might, and did, overtake Celsus, but not contumely.

It may be that this earthly orb, when it judges, judges securely; but it takes an unconscionable time to consider its judgments, and too often meanwhile this loss of documents arrests the course of its justice. Six hundred years ago, when the path of secular knowledge was the path to persecution or to the stake, flourished, or tried to flourish, Roger Bacon, the friend of Grossetête and Adam Marsh, one of the most masterly spirits of any time or people, and one of the boldest and most unfortunate champions of the emancipation of the human mind. Yet last year the historical school of his own university knew no better than to represent Bacon publicly as a buffoon. So much for humanism. And if this be true of modern history, what may we expect concerning the submerged scientific geniuses of two thousand years ago! Now I will not compare the memorable talents of Asclepiades, whose reputation for something like this interval has been under eclipse, with the genius of Bacon; nor the career of that favourite of kings and harvester of fees with the bitter bread of captivity and the ironical denial of the currency of the pen to the bounty of an un-conquerable mind; yet, had Asclepiades been a smaller man than in fact he was, for the sake of historical truth no inconsiderable measure of justice would still have been his

Asclepiades may remind us in many respects of Boerhaave. In the one case and the other affable manners, good fortune, and worldly success threw a glitter of valgarity over a career of rich practical and philosophic attainments, versatility of mind and temperament, rapid clinical perception, and sagacious insight into the conditions of health and disease; these were the endowments of both men, and in them approached, if they did not quite amount to, original genius. We meet with the curious coincidence that, in his first dissertation, Boerhaave also occupied himself in part with the philosophy of Epicurus. To Boerhaave ingratiating manners, elegant accomplishments, and popular vogue and fortune became no reproach; but in Asclepiades these qualities have been construed into sycophancy, sophistry, chicanery, and avarice. It may be said that

²² Sextius Niger and Julius Bassus, in Cæsar's time, are said to have been Romans, though, as the fashion was, they wrote in Greek.
²³ Aulus Gellius, Noct. Att., xii., 5.

Asclepiades lived a long time ago; that his contemporaries knew him better than we can do; or, anyhow, that there is no use in worrying over dead issues and obsolete reputations. We shall see, however, that Asclepiades occupies not only a high but a cardinal place in the history of medicine. Broken as are the lights in which for us he stands, yet his is the first figure which stands forth under any illumination since the dispersion of the greatest schools of Greece. The great names of Herophilus and Erasistratus are but shadows. Again, in so far as history is, or is to be, a science, or even morally true, no fact is to be taken of its apparent dimen-Now the cardinal moment at which Asclepiades flourished was that of a new outpouring of Greek philosophy and medicine into the alien air of Rome. The meaning of his career contains, therefore, much of the meaning of the age in which he lived, and of which he was a type; and, if the report of his contemporaries were coloured by envy or prejudice, our view of the period and of the course of the history is so far perverted. We must weigh the value of each witness, and compare the witnesses one with another, remembering that calumniare audacter, semper aliquid haeret. Moreover, we must not give too much latitude to the word contemporary.

About 130-124 B.C., then, Asclepiades was born, at that interesting city Prusa, in Bithynia; so that he was about a generation older than Lucretius. His name indicates that his family had some connexion with the medical calling. But the name was no uncommon one; of his time 14 persons are known to have borne it, and it seems the physician, himself an eloquent man, was confounded with another Asclepiades, a rhetorician; whence arose Pliny's spiteful legend that, having found rhetoric unprofitable, Asclepiades had turned to medicine with a sophist's adroitness and the ignorance of a layman. But to rectify our definition of a contemporary, it was about 70 years after the death of Asclepiades that Pliny was born; and the prudent Celsus who lived a little earlier, though none too willing a witness, says of him that "Medendi rationem ex magna parte mutavit." Asclepiades has suffered the more in reputation with modern English scholars as Greenhill, lately the honoured friend of some of us, and in medical history the revered teacher of us all, in my opinion and that of others, accepted too readily the irresponsible invective of Pliny, and the current estimate founded upon his testimony, reinforced by certain strictures of Celsus and Galen which were animated by controversial strife, not by moral censure. With such doctrinal differences, and the schisms which gave rise to them, I will deal presently. Suffice it to say now that for Asclepiades medicine was no afterthought; from his youth he was educated for our profession. In Wellmann's 25 opinion he was not only thus educated at Athens, as we now know, but probably at Alexandria also. It was from Athens that he brought to Rome a theory of medicine founded upon the atomistic philosophy of Democritus, then passing under the name of Epicurus, and soon afterwards to be transfigured in the shining car of Lucretius.

As in England the adverse view of the life and doctrine of Asclepiades received the sanction of Greenhill, it is from him that I must curtly present it. In his wellknown article in Smith, Greenhill says, "Asclepiades may fairly be characterised as a man of natural talents, acquainted with human nature, or rather with human weakness, possessed of considerable shrewdness and address, but with little science or professional skill. He (upon the plan which is so generally found successful by those who are conscious of their own ignorance) by villifying the principles and practice of his predecessors, and by asserting that he had discovered a more compendious and effective mode of treating disease than had been before known to the world. [Italics mine.] ... He directed his attacks more especially against the writings of Hippocrates." Greenhill then proceeds to argue that the methods of Asclepiades owed their popularity to his assiduous attention to everything which contributed to the comfort, flattered the prejudices, and indulged the inclina-tions of the luxurious classes. "We cannot fail," he adds, "to recognise in Asclepiades the prototype of more than one popular physician of modern times." This is tolerably scathing; and I suspect the distinguished critic, who was

At a much later date, some half-a-dozen years ago, a tract by Dr. v. Vilas came into my hands which made a radical alteration in my estimate of Asclepiades. It may be true, as Max Wellmann says, that v. Vilas was not sufficiently equipped with learning to do full justice to his theme; still Wellmann's standard is a high one; and a pioneer such as v. Vilas may on a humbler scale deserve very well of us. He put his points well, and supported them with no inconsiderable information. Moreover, he did the reader the service of putting him in the way to discover the earlier literary testimony. M. Albert also, in his Les Médecins Grecs à Rome, has given a balanced and better informed estimate of the place due to Asclepiades; and Fuchs (in Pagel) and Neuburger (the latter especially, whose work I had failed to consult until this lecture was under correction) have dwelt more adequately on the evidence for a far different interpretation of his character and talents; yet even these authors realise imperfectly the weakness and bias of the persistent detractions. Aliquid haerebat. The last and most convincing vindication of the place of Asclepiades in history is the essay by Wellmann to which I have already referred. Without claiming for Asclepiades a measure of magnanimity far beyond the easy standard of the age in which he lived, we shall remember, nevertheless, the gross licence of backbiting and invective then tolerated, nay, even customary, in Rome. extravagance we see colossal examples in the forensic orations of the time, even in those of men as cultivated and humane as Cicero; and in cases where we have better means of knowing the truth than remain to us in the instance of Asclepiades. Moreover, in the latter days of Athens and Alexandria, Hellenism, settling on its lees, had become more and more artificial and disputatious, more and more charged with schismatic animosities. In these passions of opinion reputations were indiscriminately devastated.

It is narrated of Asclepiades that one day, passing along the street, he saw a body stretched upon a bier, on the way to burial. He interfered, perceived some sign of life in the body, and applied restoratives; the supposed corpse quickened and the man was made whole. The multitude acclaimed Asclepiades as a god—to the annoyance, no doubt, of rival practitioners. This story is used in building up the accusations of charlatanry against the too lucky physician. But we know nothing of the circumstances which led Asclepiades to intervene, nor do we know how he carried himself under the adulation. What we do know is, that to expose the sick and dying on the highways for the chance wisdom of the passers by was an ancient and familiar custom. Moreover, we know, from a passage in Galen, that Asclepiades, as Herophilus before him, had devoted especial attention to the pulse. Another, and I think the only other, evidence alleged for the charlatanry or wily complaisance of the Greek is that in a time of growing luxury he made his therapeutical means also luxurious; that he laid aside coarse and drastic remedies for gentler meansfor regimen, baths, diet, exercises, and so forth; and that he introduced these changes in Rome with the manners of Boerhaave and Mead rather than of Radcliffe and Abernethy. But it seems not to have occurred to historians to consider whether these mitigations of practice were supple concessions to a voluptuous generation, or were consistent with a new and revolutionary doctrine, not of his own invention, but a fountain from the Alexandrian stream of thought, which drew upon him the hostilities and revenges which pursue innovations and innovators. That Asclepiades should have lifted up his voice against the sacred head of Hippocrates has made all historians, from Celsus to Dr. Withington, righteously indignant; and not without some reason. The leader of the Hippocratean school had seen

better versed in medicine than in philosophy, was not indisposed to use this parable of Asclepiades for the chastisement of certain professional vices of his own times. Dr. Withington, who may be said to represent opinion as now prevalent, with a more even verdict but still with an ironical pen, sides, on the whole, with Greenhill. He, too, is not unnaturally angry with Asclepiades for his revolt from Hippocrates. Nevertheless, during the last century there were not a few writers to take a more respectful view of Asclepiades, both as to his virtue and ability. The first scholar to qualify my own estimate of Asclepiades was that brilliant friend of my youth, Maurice Raynaud, snatched so prematurely from his friends and from medical science.

²⁵ Wellmann, Report of Congress, Köln, September, 1908, Münchener Medicinische Wochenschrift, Oct. 15th, 1908.

certain aspects of pathology with the eye of genius; Asclepiades saw another—a smaller side, if you please, but not fictitious. Yet there is no evidence that his opposition to Hippocrates, as construed by the Dogmatists, was embittered by personal acrimony; it seems to have been in the form of argument, and of sarcasm pointed by epigram. It is indeed a little curious that he should have called the Hippocratean expectancy a study upon death (θανάτου μελέτη), seeing that his own movement had been from dashing therapeutics to more rational and temperate methods; but this very discrepancy seems to mark his polemic as petulant rather than impious, while Galen's arrant teleological convictions were outraged by the flippant quip that Nature was as ready to kill a man as to cure him. But in moments of temper have not some of the modernest of us said the like? The fragments of Asclepiades, who is quoted by about thirtythree authors in various fields, in which passages, moreover, ten more references are embedded, were collected by Gumpert in 1794. The chief sources, however, are only four-namely, Celsus, Pliny, Galen, and Caelius Aurelianus; and of these Caelius Aurelianus is the most important. Unfortunately, such has been the ill luck of Asclepiades, that for many generations the writings of Caelius Aurelianus were lost, or concealed under corruptions of his name. By the same misfortune much of our knowledge of Soranus and of the history of the sect of the Methodists lay long in

A modern writer on medical history has made the interesting remark that as celestial bodies, while themselves invisible, may in some measure be recognised by their influences upon the paths of the bodies visible, so phases of the past of which, as in the case of Alexandria, the records are lost, may in some measure come into our ken by certain otherwise unaccountable deviations of recorded We must endeavour, then, to calculate from the orbits of medical thought and practice which we can plot out, those inferences which, in the absence of records, may give us some notion of the history of medicine during the blank period between Hippocrates and Asclepiades; and for a moment I must revert to the geographical aspects of the problem. We have seen that before and during the period which we may briefly call the Homeric the western seaboard of Asia Minor was not Greek; it was an outlying border of an inland power then strong enough to hold it against western encroachment. Miletus, for example, was for the Greeks of that period a city of the "barbarously-speaking Carians; although the Carians were experts in certain delicate arts, yet they spoke a tongue unknown to the Achaeans. Mr. Hogarth thinks that the north-west corner of Asia Minor and Rhodes-Ialysus, Cameirus, &c.-first became Greek. As the inland overlords-probably the Hittites. Aryan invaders from the north, who were not a seagoing people-began to lose grip and shrunk away from the seahoard, the fitful raids of the Ægean people became consolidated into permanent colonies. How these colonies grew into the magnificent cities and intellectual and artistic centres of Ionic Greece—centres which retained their vitality through many vicissitudes down to Byzantine times—there is no need for me to describe. The Alexandrian Empire began about 50 years after the death of Hippocrates, and Alexandria became the centre of trade and intellectual activity; yet Attalid Pergamon was almost comparable with it for culture. The swift advance of Greek science in Alexandria is comparable with the bloom of Greek art in Athens; Euclid, Archimedes, Aristarchus, Hipparchus, Ptolemy, Heron, and other men almost as great, carried the sciences forward, especially astronomy and physics, with astonishing effect, and the great school of medicine sprang up which produced Hero-philus and Erasistratus, to us almost mythical names; so illustrious was their fame, so little are they known Our reasonable hope that the discoveries in modern Egypt would bring forth some records of Alexandrian medicine has so far been disappointed. At the time of the foundation of the school of Alexandria the tradition of Hippocrates was probably in full vigour, a tradition, that is, not so much of formal doctrine as of observation, comparison, and suspension of judgment. For, although it is true that the humoral doctrines were held speculatively, yet the observant reader will perceive in the best Hippocratean treatises how little of the practice was derived | traced the course of some of the glandular ducts.

from a priori applications of them. This pedantry grew up with the Galenists. But we know from this positive medicine, as from religions, how under the Alexandrian mixture of Greek and Oriental tendencies—especially of platonic and pythagorean ideas certain notions, in medicine, the humoral doctrines especially, crystallised out in exaggerated shapes; and how principles and even words becoming detached as abstract dogmas and terms, gained acceptance as forces or as entities. Hence these later traditional teachers became known as λογικόι-dogmatici; medicine became more than ever interfused with philosophy, and probably the Timaeus, as Hauréau said, a bad training ground for ignorant men, began to impose itself upon physiology, as it did in the Middle Ages. To these tendencies were added from the East other influences also, of still worse consequence; motley mysticisms and occultisms, emanations, astrology, and the whole apparatus of demonology. From Pharaonic Egypt medicine probably received little, for good or harm, unless it were the accumulation of drugs; medicine under the Pharaohs was dried and sterile, and the anatomy of the embalmers was as rudimentary and pettifogging as a quartermaster's astronomy.

These extravagances, as was natural, resulted in the empirical reaction to which I shall allude presently. Meanwhile we may turn to the Greek tradition, not purely Hippocratean, but generally speaking almost free from sacerdotalism, on which Herophilus and Erasistratus were nurtured. The formal attempt to contrast the schools of Cos and Cnidus, and to allot to each its several system of argument and practice, fluctuating as such doctrines must with the inclinations of the more eminent leaders, was perhaps never a very profitable inquiry, and in the absence of almost all considerable documentary data it is in the opinion of Haeser impracticable. All we can safely assume is that on the whole the Coans were disposed to have regard rather to the general state of the patient, the equipoise of his functions, and the external conditions, such as climate, whereas the Cnidians were disposed to give more attention to the organ affected, and so to rely more on local than on constitutional means of cure. In our own terms we should say that the Cnidian would have discouraged general pathology, and that reliance in prognosis and Reneral pathology, and that renaines in prognost and therefore the research and Naturae (νόυσων φύσις larpòs) was a Coan point of view. Asclepiades, instructed in the physics of Alexandria, cannot but have recognised the tendency of moving systems to regain equilibrium, and from his practice it is evident that he protested, not against this beneficent bias, but against the teleological way of putting it. And for Aristotle himself, in distinction from Galen, it is no less just to admit that "teleology" meant no more than an analysis of statical relations, that the bodily functions knew no end outside themselves. From allusions in Aretaeus, Galen, Caelius Aurelianus, and other authors we apprehend that at the time of the rise of the school of Alexandria both these earlier schools, Coan and Cnidian, were in activity. The son-in-law of Hippocrates, Polyhus, in magnanimity, sagacity, and experience worthy of his noble kinsman, had carried forward the Coan school with signal success, and we cannot suppose that so eminent a physician as Diocles, though resident at Athens, could have been without considerable influence on the rising Alexandrian school. Diocles was too wise and too experienced a man to be a partisan, yet, as a platonist, his influence may have helped towards this bias in Alexandria; he may have sent them a copy of the Timaeus? Praxagoras of Cos, the first physician to teach the value of the pulse, was the master of Herophilus, who, and whose scholars, were accordingly, with more or less truth, regarded as in habit of mind Coan; while, as Chrysippus the Cnidian was the master of Brasistratus, he and his scholars were reckoned on the side of the tradition of Cnidus. In nearer proximity were the important schools of Magna Graecia and Sicily, of the great disciples of Pythagoras and Empedocles. Herodotus speaks of Cyrene and Rhodes as the two great medical schools of his time. It is probable that the inclination to anatomy was carried into Alexandria by the influence of Diocles and Praxagoras; for, although Galen respectfully banters him on the roughness of his dissections, Diocles was no inconsiderable anatomist. He is best known as the discoverer of the punctum saliens, but he carried the distinction between the venous and arterial areas beyond Aristotle, and

anatomy, like that of Galen, was of animals only; it is the distinction of the Alexandrians, on the advantages peculiar to their city, to have founded the anatomy of man. Unfortunately, too soon afterwards human anatomy-never practicable, perhaps, in Athens—became again impossible, and what had been gained in Alexandria must have been, as physicians are wont to say now of pharmacology and experimental psychology, too far from the sphere of practical medicine to be of cooperative service.

In discussing the later sects, in some of which anatomy was thus repudiated as otiose, we must remember that Daremberg, rather against the impression given us by Galen, was of opinion that up to the time of Asclepiades the school of Erasistratus had prevailed over that of Herophilus; and such also is my opinion, so far as this, at any rate, that the Erasistratids seem to have this, at any rate, that the Masstratus seem to have been commonly accepted as the "progressives" and the Herophilids as conservatives. This point is one of some little importance, as we shall see. It is known that during the life of Asclepiades some of the disciples of Erasistratus founded a medical school at Smyrna; and whether it be true or not that Asclepiades studied in Alexandria, which, in spite of the loss of its political importance on the shift of the centre of political gravity to Rome, was still a seat of cosmopolitan learning, a hive of Romans, Greeks, and Jews, we do know that he began his medical studies in Ionia, where in his time were the great cities and great schools of which I have spoken.

Now, in consequence of intrigues and persecutions in the early Ptolemaic period of Alexandria, many philosophers, physicians, and men of science were exiled or left the city. Certain of the emigrants settled in Asia Minor and founded or developed these medical and other schools in Ionia and Syria; as, for instance, at Laodicea, and so forth. From the earlier of these schools issued many eminent physicians, among them Alexander Philalethes and Cleophantus, who was one of the masters of Asolepiades. From the school of Laodicea came the oculist, Demosthenes Philalethes, whose renown was great in the Middle Ages. Now Cleophantus is mentioned by Pliny himself (N. H., xxvi., 8) as recommending wine as a medicine; an ancient remedy adopted by Asclepiades also, and imputed to him for unrighteousness. The school of Laodicea was founded by followers of Herophilus, so that Themison cannot have been deeply imbued with the doctrines of his birthplace; that of Smyrna, founded by one Hicesius about 50 B.C., when Asclepiades was an old man, was, as I have said, Erasistratean, so that these principles were still flourishing. Now we are told that Erasistratus, after his master Chrysippus of Cnidus, vigorously opposed the abuses of venesections, of purgation, and of emetics and clysters; Cnidian mitigations which in Asclepiades Pliny wrathfully denounced as cajoleries, for how in the face of a disease with horns and hoofs could any honest physician dare to stand prating about "Cito, tuto, et jucunde"—the wellknown formula of Asclepiades! Again, Erasistratus laid stress upon diet, regimen, and exercises; and it is to be noted that he originated that initial abstinence which Asclepiades, and after him the Methodists, made so much of at the commencement of a cure, and which Galen indeed approved. The disciples of Herophilus, on the other hand, as we note also in Galen, were much more addicted to venesection and to a profusion of drugs. Herophilus himself, indeed, seems to have been a somewhat severe practitioner; but he retained the Hippocratic reliance on clinical observation, and was the first physician to watch the pulse and to describe its characters, even with excessive refinement.

By these considerations we are led to the subject of the medical sects. As the medicine of Alexandria stiffened, and was drawn out into naked formulas, there, as under like circumstances elsewhere, a reaction set in, which, however, by a contrary extravagance ended in a similar sterility. Thus, at Alexandria, in the later part of the third century, or, as it is said, a little earlier, under Philinus of Cos, a pupil of Herophilus, arose the sect of the Empirics, whom in a former essay I have called the Philistines of Medicine. Like our own Philistines, these physicians were not without excuse, and were guided by a sort of brutal if rather barren common sense. In discussing the history of schisms and sects we must endeavour not to accentuate the differences by logical oppositions, but to perceive the example, that a patient has naturally curly hair will be modes and impulses which drove men apart. Men rarely irrelevant; and as it is not every man who knows what to

separate for fantastic or empty reasons, nor even on mere divergencies of temperament; they secede because certain relatively enlightened minds begin to apprehend the hollowness or inadequacy of current tenets. They secede and carry others with them; the established party is wroth, the dissenters hit back, and in the fury of their disputes and repartees the points of difference are forced into exorbitant contrasts. While in calmer moments no sensible dogmatist would have admitted that he treated his patents on an abstract formalism, so no sensible empiric would have admitted that he treated them on detached phenomena. without any attempt to attach fact to fact, or to interpret their directions. Yet in these dissensions of Alexandria the dogmatist was represented as recognising no facts, the empiric no reasons. Some such extremists there may have been. Empiricism has, notwithstanding, been a valuable discipline, a more valuable discipline than scepticism, because it bases itself on action, while the sceptic gradually draws aloof from action. Celsus did not lose sight of these considerations of historical justice, but Galen accused the empirics less fairly. From Celsus we gather that the empiric of that day relied on three methods: on chance observations of happy results, but also on deliberate experiments or trials, and on systematic collection of facts. From Menodotus we learn that the empiric accepted what he called an ἐπιλόγισμος—which I might translate as common sense; for instance, we read that in a case of disease of the brain signs of any former injury to the head would be sought for, and weighed, even if outside direct perception. Still in his mistrust of tentative hypothesis the empiric was an extreme Baconian; he believed in induction, but did not apprehend the inductive method in its completeness; indeed, he tried to restrict himself as narrowly as possible to proximate causes, and to regard longer concatenations and remoter causes with suspicion. The faults of the empiric were that he was unaware of the fallacy of enumeratio simplex; he had no criteria; and in treatment he would be guided only by the uppermost signs. Obviously, then, he would vilipend the only anatomy we could know, as Sydenham eschewed pathology. We have surmised that even the anatomy of Alexandria was not developed so far as to give much practical aid to medicine, except in some confirmations of And it is a remarkable tradition concerning surgery. And it is a remarkable tradition concerning Herophilus that this brilliant anatomist did divide his science from his clinical practice, thus leaning towards the empirics; as in later times revolts have been made to clinical observation from an inchoate pathology. Soranus, indeed, said necropsies were useless—"dνατομή (that is, post-mortem examinations) dχρηστὸς ἐστιν." And surely in the midst of Alexandrian visions many of the sayings of the empirics were refreshing; such as these, quoted by Celsus, "Ne agricolam quidem aut gubernatorem disputatione sed usu fieri"; "Morbos non eloquentia sed remediis sanari" ; or even the characteristic "Non interesse quid morbum faciat sed quid tollat." The empiric at worst meant business. And we can readily understand the testimony of Celsus and others that the empirics turned out excellent surgeons, such as Heracleides of Tarentum. They were no transitory sect; we read of professed empirics down to the time of the half empiric and half sceptic Sextus Empiricus in the fifth century. In these times, and before them, we find that the medical like other sceptics, as they lost their zeal, began to crave for coarse mental stimulants and gave themselves up to rank superstitions.

Still, as I have said, the more rational empirics undoubtedly put symptoms in some sort of major and minor subordination, and they esteemed the clinical descriptions of Hippocrates and his immediate followers. Even as physicians they could not ignore the memory of experiences nor assert that observation can proceed without connotation; but assert that to observation can proceed without only but in principle to the $\ell \nu \delta \epsilon i \xi i$; of the dogmatist they opposed rippysis. The best rendering of these terms I have found in Castelli, who renders $\ell \nu \delta \epsilon i \xi i$; as the determination of agents by the causes and mode of generation, indicate ex indicante, and τήρησις as cognitio fide sensum; or, as I may put it, a tight attachment of the perception to the mere events. On this habit Galen, in his treatise on Sects, rightly comments that, as phenomena are infinite, we cannot but select; we cannot but note one feature and discard another-for

accept and what to discard, therefore discerning observation implies training. Moreover, many of the profounder affinities cannot be detected but by reason. This is, of course, the perennial quarrel between the practical man and the theorist; the theorist is prone to overlook the contingent, the practical man to see nothing but the immediately accessible, incidents. Still, even early and rude empiricism could not but begin to demand explanations, and to perceive that there were things άδηλα, as well as φανερά, with which, if true affinities are to be traced out, the understanding must deal. One fact was not as good as another; facts had their relative values, to be appreciated by a mental operation, and some, indeed, were crucial. But, persisted the empiric, clinical observation cannot teach us causes, while shrewdness and insight with experience— $\pi\epsilon i \rho \alpha \tau \rho \iota \beta \iota \kappa \dot{\eta}$ —can by provisional axioms make order enough to give the physician no insufficient guidance in the infinite world of symptoms. The empiric starved his method by isolating it. With these and such limitations, however, it would seem that the empiric, as such, could never have risen even to the bare idea of preventive medicine.

The empiric did not see that the human mind cannot content itself with perpetual suspense, but in default of some chain of reason will betake itself to analogies, which are usually superficial and false; nor did he perceive the indirect influence of the sciences in training the mind as an instrument to accuracy and method. Serapion, indeed, explicitly advocated analogy— ἡ ἀπὸ τοῦ ὁμοίου μετάβασις a method fraught with the gross errors which I have indicated in the history of folk medicine. A debased empiricism must then abut either on the one hand by recognition only of the coarser phenomena upon folk medicine, or on the other, as in Sextus, upon the fatigue of scepticism; but more enlightened empirics, such as Menodotus, came near the salvation of the inductive method, and definitely did take account of remoter and obscurer causes. Menodotus, as M. Favier in an able essay has shown, even recognised the value and purpose of provisional hypothesis. 26
The contrary tendency to scepticism is indicated by such terms, common to both empirics and sceptics, as εγκέρησις—a lighting upon events, as opposed to conceptual anticipations of them. When we try to compare the standpoint of the dogmatist with that of the empiric, we are met on the threshold with the curious question, How much in the direction of the understanding the senses contain, or imply; how much diarbia - or the intelligent collection of apparent facts, contains of λόγισμος—or a reconstruction of them; and again, how far these processes are functionally in combination with toropla or memory? On reflection we shall perceive that only in an abstract logical scheme, in a sort of Athanasian mosaic, is the mind divisible into such severalties. The faculties of mind and body work not in compartments but as a contexture; and in so far as these faculties are drawn asunder the functions of the whole understanding are thrown out of balance and its products perverted. In the school of Hippocrates it is true that humoral hypothesis was professed, yet in the matter of practice the bent of it was strongly empirical, and the understanding was regarded as receptive rather than productive. It was to this attitude of mind that Sydenham returned to a sort of systematic empiricism making for the plotting out of phenomena in series, in some contrast with the compara-tively occult curiosity of Morgagni about seats of disease, and of modern medicine about their genesis. It was in their reliance on sagacity before logic, that the saner dogmatists —such as Celsus—were Hippocratean; they trained and trusted the faculty which Cicero calls ingenium sagax. But, after all, perhaps few schools—as few religions—were as bad as their creeds.

Of the state of medical opinion in Rome in the first century B.C. we have but indirect evidence, and even of this not much. Moreover, we have to set aside the random invectives of Pliny; happily, indeed, we are able to discard them for the evidence of Celsus, a sober and competent author, who, moreover, flourished nearer to the time we are considering—the time, that is, of the setting of the school of Alexandria and of the large migration of medicine to Rome. In the treatise of Celsus, then, medicine in Rome is presented to us as still in its main quality solidly Hippocratic, fortified by Alexandrian science, and chastened by the

influence of the empirics who were protesting against the later Hellenistic vagaries in Oriental metaphysics. As I have recently published a note on Celsus in the Classical Review, I will not stop to repeat it here; I will do no more than indicate that among the upper classes of Rome in the first century B.C. medicine had been lifted far above the folk medicine of Cato, although beneath these classes it was flowing on in scarcely diminished volume. was floating upon a Græco-Roman aristocracy of family and wealth a Greek, but still, as represented by their spokesman Celsus, a sedate and instructed medicine worthy of the Roman gravity; when, from more than one quarter, burst forth a new and revolutionary idea, cham-pioned by men of great ability, by a poet of transcendent genius, and by a physician rich in talents, which shook the Hippocratean raft almost to pieces. Indeed, in its later and corrupted form it was decomposing the science and art of medicine into empty conceits, when the more tremendous and, on the whole, more virtuous arm of Galen attacked and demolished it. So close have been the alliances between medicine and philosophy one may wonder that the atomism of the unrivalled twin masters Democritus and Leucippus had not made an earlier prize of our art—an art drifting then and since through many ages with uncharted methods, and without anchorages in substantial knowledge; for humoralism had ignored or neglected the pathology of the solids of the body. The triumph of Methodism proved but a hollow show, though, as I have stated upon the elucida-tions of Daremberg, Diels, and Wellmann, its survival, from its beginning to its fading away in Salerno, was a longer story than is usually told. For my part, however, I should speak, not so much of the late survival of Methodism as of its relics, and of these rather as its accidents than as its substance; but it is true that doctrines have their roots deeper in the past, and their vitality lingers longer than is obvious to the cursory observer.

The Hippoeratic Canon is permeated by many inconsistent strains of thought; as, for example, in the Περι διάιτης; the Περι φύσιος ἀνθρώπου; the Περι φυσῶν, &c. Again, Diocles seems to have been a forerunner of the pneumatists. So among the adumbrations of Methodism, we find that Asclepiades apparently held the strange opinion, excusably derided by Galen, that the wrine was not, as Hippocrates ($\Pi \epsilon \rho l$ $\delta \sigma \tau \ell \omega \nu$ $\phi \psi \sigma \iota \sigma s$) truly held, a stream secreted by the kidneys and trickling as rivulets by way of the ureters into the reservoir of the bladder, but that the corporeal fluids rising in vapour exhaled, and, vaguely permeating the pores of the body, condensed in the bladder. Now it luckily happens that Galen, in contesting this very unanatomical but very methodistical notion, remarked that it was in origin pre-Alexandrian. Furthermore, certain opinions concerning plethora, similar to those of Asclepiades, were also held before Erasistratus by one Aegimius of Elis. Aegimius, as it seems from Celsus and Galen, did not accept the humoral pathology, and was therefore neither Coan nor Cnidian in doctrine. Aegimius then may have been the first champion of atomism in medicine, as Asclepiades was really the last. These and such questions are very ably treated by Wellmann in the new Pauly,²⁷ where he traces back the atomistic stage of medical history to Erasistratus and beyond him. Diels is now of opinion that Erasistratus endeavoured to harmonise the materialism of Democritus with the ideas of Aristotle; that, according to Erasistratus, it was by an atomic mechanism that the great artist Nature created and acted, as Galen put it (De Faoult. Nat., II., 2, &c.), "προνοητικήν τοῦ ζωου και τεχνικὴν αὐτὸς ὁ Ἑρίστρατος ὑπέθετο τὴν φύσιν." Health accordingly consisted in a συμμετρία (rhythmical system) of these rudiments.

Again, as we learn from Brieger and other commentators, Democritus opined that the soul consisted in a collective activity of spiritualised—that is the finest—atoms in all parts of the body; this opinion was held with a small difference by Asclepiades also, who proceeded to found upon it a positive method of psychiatry, wherein παραφροσύνηwhich he clearly distinguished from the cerebral symptoms of other diseases—was to be treated as a disorder of the brain, a corporeal disease remediable by corporeal means, in which, however, he included music and other psychical influences; a true, and for that age admirable, conception which may be said to have fallen into utter neglect until its

²⁶ Un médecin grec du IIme siècle A.D., Thèse de Paris, On Fragments of this Physician's Writings in a Latin rendering of Galen's De Subfiguratione Empirici.

restoration by Pinel. A note of the rare insight of Asclepiades is to be marked in his ideas of the integration of soul and body; for that these were real thoughts of his, not notions coloured after our modern patterns, is illustrated by such reflections as this—that hallucinations dissolve or diminish in the daytime, because they are counteracted by the data of the senses; as in the rays of the sun a torch becomes invisible. But in the dark the veil of oppression over the senses cannot be drawn away, and thus in sleep, the senses being closed, the pictures of fancy have free play (Cf. Lucretius,

It was then to the remarkable opinions of Democritus on the nature of the soul that Asclepiades, surpassing certain shortcomings of later thinkers, indeed, of Epicurus himself, returned; but now we come to an important advance of his own. Democritus, as I have said, held the interesting view that the soul consisted in the sum of functions, in a cooperation of the atoms of all parts of the bodily system (συγγυμνασία $\tau \hat{\omega} \nu$ alognotian), so that between animation, consciousness, and thought—the άλογον and the λογιστικόν—there were for him only degrees, no radical division. Erasistratus accepted the familiar divisions between the vital principle in the viscera, that of the animal life in the arteries and respiration (τὸ ζωτικόν), and that of the mind (τὸ ψυχικόν). For Diocles the soul was in the blood, for Praxagoras in the heart. It was the corollary of Epicurus that for the sake of the soul the body must therefore be cherished, which led to the degradations of hedonism. Now it is recorded of Asclepiades that in this part of physiology he made certain proofs by experiment. The view of Democritus— $\pi \nu \epsilon \hat{\nu} \mu a$ παντί τὰ σώματι παρακείμενον—obviously excluded a particular seat of the soul; yet, said Asclepiades, in the synthesis the brain must take a predominant part; for he had observed diseases of the brain to be followed by notable perversions of the mind. It was to throw light on this dilemma that he undertook the experiments, in some prescience of the methods of Galen; he decapitated animals of different orders, eels, tortoises, goats, crickets, flies, and pointed out that, though under this dismemberment they could all survive awhile, it was in very various degrees. Moreover, in his research Asclepiades took heed of a certain reserve akin to the system of controls in our experimental method. He pointed out that the functional products were continually variable, even of the soul; this he explained by the incessant whirling restlessness of the atoms (κίνησιs, φόρα, ρυσίs); he warned the empirics that therefore two and more observations could never be made under identical conditions. If, then, Asclepiades, in concentrating his explanation of insanity upon the brain, conjectured that the atoms of the brain were rounder and smoother, and so more mobile, than those in the rest of the body, where they united by hooks to form a web $(\sigma v \mu \pi \lambda o \kappa \eta,$ complexio), yet he was led into this transcendental speculation by observation and experiment. We know, also, that he made post-mortem examinations, for in a gibe of Galen's, Asclepiades, who consistently with his theory and with the teaching of Erasistratus regarded digestion as a merely mechanical grinding and pulping, is derided for not observing different qualities in the digested food, whether in the vomit or "ενταῖς ἀνατόμαῖς." But I will not attempt to detain you by farther illustration of the researches of Asclepiades, for, as in the case of Francis Bacon, his meditations were often more fruitful than his applications. Thus it was his logic which dictated to him that the finest atoms must be in the centre of gravity of the body -namely, in the breast; and, with more truth, he adhered to the belief that respiration consisted in the affinity of these finest atoms for the like finest particles of the atmosphere, those nearest like fire or pneuma, or, as we might sphere, those hearest has the of pheams, of, as we might say, of oxygen. The directions of the $\phi \delta \rho \alpha \iota$ —the atomic orbits—he explained partly by "logic," yet also (as we might expect from an Alexandrian student) by some mathematical conceptions. For this reason the hypotheses of Asclepiades have been seriously compared with those of the iatro-physicists or iatro-mathematicians of the seventeenth century; but surely this is to forget that in the vast interval the bases of the medical sciences had been wholly transformed. Of philosophy the bases continued to be more uniform; Asclepiades, like his intellectual ancestor Democritus, was as convinced a teacher as Locke of the relativity of knowledge and of the relative finality of the appreciations of the senses. Ultimate substance is

άδηλον, and we cannot, he says, carry the bases of our knowledge beyond phenomena (φαινόμενα). 2-3

From considerations such as these, by a closer and wider

investigation of such fragments and allusions as are extant, we begin to perceive that to regard Asclepiades as a smoothtongued and covetous intriguer, bent on plausible inventions and pliable therapeutics wherewith to tickle the fancy of an enervated and self-indulgent society, was an unfair and mistaken judgment. On the contrary, we have seen that this eminent man was educated from his youth for the medical career; that to this end he studied in Erasistratean schools, perhaps in Alexandria itself, and came to Rome inspired by no time-serving, extemporal, or individual sentiments, but by a large and revolutionary system of doctrine seriously intended to overthrow the post-Hippocratean dogmatism, already combated by the empirics. This system, adapted from the atomic theory of Democritus and Epicurus, and developed in its applications to medical science, had been delivered to him through four or five generations of authoritative teachers; and about the same time this theory and interpretation of life, already for two or three generations propagated in Rome, was to reach its zenith in the splendour of the epic of Lucretius. In common life educated men, and even the general public also, were repudiating the crude tenets and the barbarous practices of the old-fashioned medicine; while in respect of the empirics, on the other hand, intellectual observers such as Crassus the orator, 20 Cicero, Atticus, Marc Antony, some of whom are recorded as personal friends and patients of Asclepiades, could not fail to discern the aridity of doctrines which professed to see facts only one by Thus the minds of thoughtful Romans were open to consider almost any plausible doctrine of causation, and meanwhile to welcome more temperate therapeutical methods. At this time it was that Asclepiades arrived from Athens, animated by the atomic theory, a physical conception of nature which in philosophy and literature also had already inspired other eager spirits with the ardour of revelation. and professing to found a new practice upon those methods of diet, active and passive exercises, baths, and the conduct of life which we honourably distinguish as physiological, and that Asclepiades was no ineffectual sophist, but expert enough with his hands on occasion, we infer from his reputation as a surgeon and from the attribution to him of the operation of laryngotomy.

But what about the ungenerous denunciations of Hippocrates? Why, we shall step out of the study, and apply to these scoffs a little worldly common sense. Asclepiades came to Rome as a rebel; he had to fight for his hand against a powerful array of conservative forces, especially against a jealous and none too scrupulous body of practitioners, all or nearly all of them either dogmatists or pretenders, both of which parties armed themselves alike with weapons from the armoury of the older tradition. As for our fathers, Moses being interpreted meant Bishop Usher, so in the mouths of the Greek doctors in possession "Hippocrates" meant the prevalent dogmatics and routine. And it were no inconsistency of temperament in a reformer one day as irascible man to throw controversial missiles at the effigy of a Hippocrates or a Moses, and on the next as sage to treat their persons with reverence. The remonstrances of Asclepiades were far away from the raw and insolent abuse of Thessalus, such as that the aphorisms of Hippocrates were all lies. Pliny is the only writer to impute moral delinquency to Asclepiades; the medical botanist and folk-lorist and the philosophical physician were irreconcilable. Varro, whose leanings were towards the Empirics, bitterly opposed the Epicureans, and in this sense only opposed Asclepiades. Scribonius Largus protested, but with great respect, against a physician who discouraged the liberal use of drugs. The wise and learned Celsus, in a period when literary acknowledgments were usually disregarded, mentions Asclepiades, so I have computed from the index of Dr. Friebos, no less than 29 times; if often with dissent, yet always with respect, and many times with honour—for instance, as "auctor summus" and as one who "medendi

²⁸ For the discussion of these materials derived from Sextus Empiricus, Caelius Aurelianus, Galen, Aetius, Cassius the latrosophist, Antiochus of Ascalon, &c., I am indebted chiefly to Daremberg, Brieger, and Wellmann.

29 Ciccro, in writing to Crassus of Asclepiades as both friend and physician (apparently of both?), says that Asc'epiades was indeed cloquent, adding: "In eo ipso quod ornate dicebat medicinae facilitate utebatur non cloquentiae."—De Orct, I., 14.

rationem ex magna parte mutavit." How paramount in his own day was the reputation of Asclepiades we know from the attempts by other potentates, especially by Mithridates, to allure him elsewhere. Galen, though more acrimonious in dispute than Celsus, yet likewise betrays in his argument, and indeed avows, that the fame and ascendency of Asclepiades were still paramount and that he sought to discredit that fame not in morals but in doctrine. Between such antagonists there could be no truce; and, as Asclepiades had been in his grave for a century and a half, the illustrious Galen got all his own way in the wrangle. Still I repeat that these angry protests of Galen, for much of which there was controversial justification, were a tribute to the authority of Asclepiades, and carried with them no more imputation of guile or dishonour than in the case of Menodotus and others whom he pursued with the same pugnacious eloquence.

While Asclepiades erred towards a dissipation of the specific in the universal, Galen, who belonged rather to the Herophilean tradition, became accordingly engaged and even entangled in too assiduous an occupation with specifics and the consequent enormous polypharmacy. Moreover, Galen had adopted the monotheism which, as it were in reaction from the invasion of demonology, had arisen in Alexandria, and in with it he had woven a highly elaborated teleology, which virtually postponed the divine to the human intelligence and turned any incidental result of the co-adaptation of an organism and its conditions into its end. Besides his loyal devotion to the name and school of Hippocrates, Galen was himself an ardent, only too ardent, humoralist. He relied also upon the Critical Days, repudiated by the atomist school, which, if a remnant of magical numbers, was accented, and more rationally, by the periods of pneumonia—a malady then frequent, and of the malarial influence which tainted many of the other diseases of the Mediterranean. It is a mistake, however, to suppose from this that the Methodists did not recognise crisis; what they denied was that crises were determined by calculable periods.

The researches of Maxwell, Kelvin, and J. J. Thomsonto mention but a few recent workers in this field-have linked us so much more intimately with the atomists of old, that we read even the esoteric Timaeus with less sense of the bizarre; still, for medicine the doctrines of Asclepiades, and still more justly those of Themison and formal Methodism, were very crude, even as hypotheses, and from the peculiar needs of medicine they rambled far away. What the art of medicine needed above all things was positive methods and a ruthless fidelity to facts. I have been led to imply that for medicine even the cramped and illiberal notions of the empirics were less unwholesome than the fascinating and philosophically interesting visions of atomism. Philosophy is one thing, a craft is another, and a craft must walk before it can fly. Atomism did, it is true, recall men to the forgotten solids of the body, yet so very impalpably that not professional antagonists only, but the very nature of things warred against Asclepiades. If the despotism of Galenic tradition became an incubus to medicine, we may surmise that a tyranny of Methodism might have been a worse mis-Methodism would have started indeed with a fortune. "cito et jucunde," and the western sick might have been spared the flourishes of the actual cautery and volumes of blood, but the following centuries were rough; perhaps they were fascinated by rough handling, at least they did not resent it; and if Methodism ignored the vis medicatrix Naturae, Galenism too often forgot it.

To move onwards from Asclepiades; the early atomists had said little of the spatial relations of the atoms, of pores between them.30 Plato supposed his triangles to act in a plenum.²¹ Erasistratus and Asclepiades, however, laid stress on the pores; for instance, if there were no pores in the skin how could one sweat? 22 And Themison, who is commonly regarded, perhaps conveniently, as the founder of Methodism proper, for the pores almost forgot the

atoms themselves. In what kind of association, then, did the atoms seem to the atomists? Had they any conception-to use our current terms-of a grouping of the indivisible atoms into molecules? Even when we come down to Asclepiades, had he in his mind's eye any functional, differential, or heterogeneous segregation of atoms? After some rummage among texts and com-mentaries I have come to the conclusion that to this question no answer can be given. The difficulty is not so much that in respect of a building of atoms into molecules there is no allusion, as that in the relevant passages of the textsfragmentary as they are—the extant terms and sentences are at variance, or indeed contradictory. Some Epicureans, using the word arouos, regarded these particles as ultimate; others, using the word bykos, as divisible; but it is not apparent that any point of constructional principle depended upon the difference. The probability is that the notion of systems of atoms or of compound atoms, as molecules, did not present itself formally to the ancient thinkers as a mode of functional development. They supposed that atoms might stick or crowd together, but they looked upon such adhesions as incidental, and usually, as hampering them in their orbits, mischievous. But Asclepiades, as we have seen, conceived of the atoms themselves as coarser and finer and so differential in function. To read more into their expressions -at any rate, into their extant phrases-is, I think, to import

into them ideas of our own. What is, then, the distinction which separates Asclepiades from Themison—the Epicurean from the Methodist? Well, this—that from regarding the atoms as in a plenum, or, again, as rushing, spinning, or whirling in space or spaces, Themison, as I have said, almost forgot the atoms in the pores, or rather forgot both in the meagre notions of relaxation (ρυσις, τὸ ρύωδες) and constriction (στέγνωσις, τὸ στέγνον) in this area or in that. Asclepiades conceived of the atoms as losing their balance and crowding together in this direction or in that so as to cause a stoppage ($\xi\mu\phi\rho\alpha\xi\iota s$), or at least a retardation (στάσις), of the currents in one part with a corresponding rarefaction in other parts. Of the rarefactions, Asclepiades says less than Themison, for whom they loomed larger, and Themison contrasted the rarefied parts, where he regarded the tissues as relaxed, with the congested parts where they became choked or constricted. Thus, pain for Asclepiades consisted more particularly in a sense of stoppage, of aggregation of coarser atoms-as in thick blood for instance; Themison reduced it to a mere strictum; and in their respective explanations of fever there were the same differences. Generally speaking, for the Methodist acute disease was a status strictus, chronic disease a status laxus. 33 For pain, then, Asclepiades conceded that venesection, preferably local, might fairly be practised, though cautiously and only for instant relief; for he affirmed that on the whole bleeding tended to draw off the finer, the more vital, atoms first, leaving the coarser behind; so that rigor, due to such a peripheral viscosity, might follow venesection. Again, when arrests took place in certain parts, as in glands or in a lesion of a limb, the swift atoms, finding themselves thwarted in their orbits, would sweep upwards from the block, or perhaps from a more universal closure of the pores of the system, and thus set up general fever.

I may digress not inconveniently here to say that the interpretation of fever was one of the great questions of the schools; that of the atomists we have noted. Diocles held that fever was a contingent effect (ἐπιγέννημα) of some morbid process, and Galen took a similar view of it, the not irrational view-over-emphasised in later times by Broussais-that all fever depended upon some focus of inflammation, especially if pus were forming. schools attributed fever to plethora: the Hippocrateans to bile-the degrees of malaria, for instance, being degrees or kinds of biliary crasis. And external poisons were not forgotten-such as bad food or bad gases; for to some such agency Thucydides tells us the great plague of Athens was attributed. By the Methodists, however, these doubts and conjectures were all diluted into the vague conceit of a mere strictum, more jejune

³⁰ Empedocles supposed the emanations from external bodies passed through pores into the organs of sense

through pores into the organs of sense.

If the $\pi\nu\kappa\nu\omega\sigma$ is and $d\rho al\omega\sigma$ is of Anaximenes were not spatial relations of atoms but extenuation and condensation of a uniform "air." For the extant sources the reader is referred to the collection of Ritter and Prelier.

If may here recall the contemporary, and especially methodist, idea of respiration by the skin in man.

²³ That Asclepiades, or any other one physician, propounded the distinction between Acute and Chronic Disease 1 can hardly admit. The prevailing notion in the time of Hippocrates seems to have been that Chronic Disease was a sequel of Acute, and this notion became modified

even than the Asclepiadean stoppages of the pores. This was one of the universals (κουνότητες) of the Methodists; This the other two chief communitates being the "laxum" and a third or mixed state, $\mu\epsilon\mu l\gamma\mu\epsilon\nu\nu\nu$; this last being one of those shifts for the disposal of awkward instances to which most system-mongers are driven, only to find that it unites the difficulties of both extremes. This "mixtum" was inserted by Themison. On those universals Soranus wrote a book, lost with the rest of his works. Thus, conceptions which in Asclepiades were an endeavour to range biology with the positive sciences, to bring medicine into contact with physical methods, to anticipate Heller by bringing the solids of the body into the reckoning, were, by the extravagancies and fantasies of his immediate successors, the Methodists, attenuated into the flimsiest of cobwebs. To the most eviscerated of these notions the Methodists referred all phenomena; they scorned axiomata media, and sought to know the whole without knowledge of the parts. For them the problem of diagnosis was not, what are the phenomena? but how far could the malady be evaporated into a communitas—a strictum, or a laxum, or a mixtum? The treatment, accordingly the strictum of the strictum of the strictum of the strictum of the strictum. ingly, was just a correlative formula—laxative, tonic, tono-laxative—a facile device which, at any rate, discouraged polypharmacy. But, as Galen happily retorted upon them, as Humanity, for example, is a universal, but in the examination of individual cases, or even in inquiring into the species and sorts of Man, one very vaguely useful, so in disease the physician must not only pay regard to particular symptoms and characters, but must also inquire into what Galen called the procatarctic (occasional) causes, such as climate, age, sex, habit, and the like. This aspect of causation was familiar to Asclepiades, who taught, for instance, that diseases behaved differently, and patients tolerated treatment differently in Rome and in the Levant. However, too often these discussions were, after all, fights between one windmill and another. It is curious that each in his own extreme, the Empiric and the Methodist alike, the Empiric glued to his particular, and the Methodist blown into his universal, dispensed with the need of inquiry into causes, or, indeed, into processes. While for the Methodist the specific fact was as soon as possible to be sublimed into one of the three universals, for the Empiric it was an ultimate; the one refused to see it, the other refused to pursue it. This was a sad falling-off from Erasistratus, who made some necropsies; he observed, for example, that in ascites the liver might be of stony hardness. But the Methodists soon discovered—or it was discovered for them that to reduce medicine to two, or even to three, abstract categories was because of its very facility to reduce it to a vapid and fruitless pretence; they formulated, therefore, other universals subordinate to the chief triad. Yet even then, for the explanation of poisoning, of the invasion of foreign bodies, of tumours, and of surgery in general, the idea was unworkable; and, at any rate, in its emptiness of content,

The parallel categories to which their therapeutics were necessarily reduced were of contraria contrariis; if, as in the first stage of fever, there was constriction, then relaxants were to be used; if, as in the second stage, there was solution, then astringents. So, again, in presumptive local leaks or stoppages astringent or solvent remedies respectively were to be directed to the affected area. It is easy to see how such rules-of-thumb must lead, as in fact they did, to the vainest and most senseless routine, and how destructive they were of the method of Hippocrates, which, as Celsus wrote, was mederi oportere et communia et propria intuentem. Still, as in all such revolts, the leaders, as we have glimpses of them down the centuries in Oribasius, Aetius, Alexander of Tralles, were better than their followers. But I must permit myself again to commend the excellent and permanently influential side of their therapeutics derived from their forefathers, Asclepiades and Erasistratus, that which congruently with their physical views led to the correspondent extension and development of the physical means of cure-of passive movements, graduated exercises, special baths, diet, regimen, and so forth. These were the methods which, in the hands of Asclepiades, supplemented the barbarous practices of Archagathus. A proverbial rule of the Methodists, which we trace back to Asclepiades and Erasistratus, was the well-known three days' abstinence with which they commenced the treatment in acute disease.

It was in the later stages that wine and good feeding were recommended.

In obstetrics the Methodists attained distinction, especially in the person of Soranus, whose fame, and the fragments and titles of whose works, testify to remarkable abilities, not in obstetrics only, but over the whole sphere of medicine. The man is reflected in his terse, lucid, shrewd, and practical style. Soranus was, as it were, re-constructed from these relics by Reinhold Dietz, of Königsberg, another learned physician carried off prematurely by death. The development of obstetrics probably arose out of the Alexandrian anatomy; we know that Herophilus wrote upon the subject. Thessalus of Tralles, on the contrary, in the reign of Nero, reveals himself to us as an arrogant boaster, and not only as vainglorious, but as the captain of troops of pretenders, to whom he promised for a fee to teach in six months all that need be known in medicine. Such medicine as Thessalus had to teach might have been written on the proverbial half-sheet of notepaper, and learnt for less money in as many hours. He vaunted himself as the foe of doctors, and on his ostentatious tomb in the Appian Way inscribed himself as Iatronikes. He vanquished, it is true, whatever there was in the science and art of medicine, of understanding, of skill, of patience, and of honour; and must have revealed to the respectable Methodists how near are the boundaries of vanity of doctrine and vanity of conduct. Asclepiades was the forerunner of the Methodists it is true, but it was by Themison and his school that the atomistic conceptions, which at best lent themselves too readily to fantasy, were so reduced, both in theory and practice, to summary forms as to be comprehensible by any illiterate charlatan.

A COMPARISON BETWEEN THE ANTI-SEPTIC AND ASEPTIC METHODS OF OPERATION, WITH SPECIAL REFERENCE TO THE OCCURRENCE OF SUPPURATION.

BASED UPON THE RESULTS OBTAINED AT ST. GEORGE'S HOSPITAL DURING THE YEARS 1906 AND 1908 RESPECTIVELY.

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During the year 1907 the use of antiseptic solutions at operations was superseded at St. George's Hospital by the more modern aseptic method. Up to the end of 1906 everything connected with an operation at St. George's Hospital was sterilised by means of antiseptic solutions. The trays and other utensils were cleaned by washing in hot soap and water and antiseptic lotions. The instruments were boiled and subsequently put in a 1 in 60 solution of carbolic acid. The swabs were subjected to a similar treatment, as were the towels by which the field of operation was surrounded. Gloves were hardly worn in any instance.

Dr. O. Slater writes us as follows: "The principal changes that have been introduced are largely concerned with details of technique involved in the substitution of aseptic for antiseptic methods—details which are well known to surgeons and about which it is unnecessary to say anything—and certain changes due to the installation of a more complete sterilising plant than that which existed before the period considered.

I. A battery of sterilisers has been provided, in a room adjacent to the theatres, which are heated by steam, and provide for easy and rapid sterilisation at 100°C. The most important of these is a large double tank, in each compartment of which the whole of the vessels required for an operation (instrument trays, receivers, &c.) can be sterilised at one time. These vessels are all packed into a perforated

metal receiver which is plunged into the steriliser, and after the requisite boiling is lifted out by means of a travelling crane, drained for a moment or two, and then dropped on to a trolley, covered with a sterile towel, and wheeled into the operating theatre. This method has replaced the simple washing out of the vessels with hot water (not boiling) and is rendered so easy by the mechanical arrangements that there is no tendency for those in charge to shirk the work.

II. A supply of sterile water has been provided for the theatres and for the sterilising room. The supply is drawn from the ordinary hot-water supply of the hospital, which has been shown by repeated examination to be sterile, and is cooled by passing through a metal worm immersed in a cylinder through which the whole of the cold water used in the theatres for all purposes passes. Beyond the initial cost, which was small, there is no expense involved for maintenance and little for renewals, while the quantity of water available is practically unlimited.

III. There has been an alteration in the method (formerly very faulty) of preparing and storing sterile salt solution, and provision has been made for the bacteriological super-

vision of this easily contaminated fluid.

IV. The most important change has been in the installation of a high-pressure steam steriliser of sufficient capacity to deal with sterilisation of all dressings, coats, towels, &c., for the theatre and for dressings for the wards. The methods used have been shown by experiment to secure the destruction of highly resistant spores placed in the least permeable of dressings in the centre of the boxes. The boxes are sterilised when closed and no internal cages are used. This saves much space and avoids many risks of contamination. These results cannot, however, be obtained in the ordinary metal sterilising box. The boxes employed have openings about 3 inches in diameter cut in the lid and bottom of the box, and these openings are protected by double gratings of coarse wire between which pads of wool and gauze can be placed. These pads can be easily renewed when necessary. The steam penetrates easily to the interior of the dressings, and there is no difficulty in securing that they are reasonably dry after sterilisation.

Associated with these changes there have been alterations in the nurses' costumes and regulations as to the wearing of gloves and the use of other precautions to secure asepsis. Rubber gloves are now worn by nearly all the surgeons; and many use some form of head-gear. The standard solution in use for the sterilisation of the hands was a 1 in 2000 solution of mercuric potassium iodide and 1 in 500 solution of the same salt in spirit. This is still employed for the preliminary cleansing of the hands, previous to putting on the rubber gloves. The only particular in which no change has been made is in the preliminary preparation of the patient's skin. The field of operation is first thoroughly washed with soap and a brush, next rubbed over with ether to remove any sebaceous débris and fatty material, and finally swabbed with a 1 in 500 solution of mercuric potassium iodide in spirit. A carbolic compress 1-80 is then bandaged on. In the theatre before operation the skin is again cleansed with ether soap and a solution of 1 in 500 biniodide in spirit.

These changes were begun early in 1907 and perfected towards the end of the year. It occurred to us, therefore, that it would be a matter of some interest to publish the results obtained during 1906, the last year of the old régime, with those of 1908, the first year in which the new method was used systematically. For this purpose we have examined the hospital records and have gone into the after-history of every major operation performed during those two years. We should state that at St. George's Hospital the initial notes of every case are taken by the registrar, while the continuation notes are written by the house surgeon in charge of the case, and thus we are forced to rely upon the data supplied by a large number of observers. In compiling these statistics we therefore made it a rule to include no case as free from suppuration unless there was a definite statement in the notes that the wound had healed by first intention or words to that effect. We have, however, in our capacities as surgeon and surgical registrar, personally observed more than half the cases during their stay in hospital, and further, we have been assisted in this inquiry by three of the house surgeons who were responsible for the care of many of the cases that we ourselves did not see. Any case in which the slightest doubt existed was immediately discarded.

Certain classes of cases were also eliminated as being unsuitable for the purposes of this inquiry. These were: (1) abscesses and cases already septic before operation; (2) operations upon the ear, nose, and throat; (3) operations upon mucous surfaces, e.g., upon the rectum and mouth; and (4) cases of appendicitis in which there was already abscess formation or peritonitis at the time of operation. Our reasons for excluding classes (1) and (4) are too obvious to need stating. With regard to classes (2) and (3), it need hardly be said that suppuration can and does occur, but we have excluded them because, while in some suppuration can hardly be avoided, in others it may escape the observation of even an intelligent house officer.

1360 operations are recorded in 1906, and 1180 in 1908. Of these, after the process of exclusion on the lines laid down, only 738 were available for our purposes in the former year, and 673 in the latter year.

The statistics of the two years are given in tabular form :-

								1908.
Total available operations			•••		•••	738	•••	673
Healed aseptically	•••	• • • •				638	•••	624
Became septic	•••		•••			100		49
Percentage of septic cases		•••	•••	•••	•••	13.5	•••	7.2

These numbers are not as large as we could wish, but they are, at any rate, too large to admit of the argument that the improvement is a coincidence. We would point out also that the operators were the same in the two years.

We have further made separate statistics of the results of operations on certain special diseases, and again we give the results in tabular form:—

I.—Radical Cure of Hernia. 1906. 1908. Total cases 188 198 Healed aseptically 162 179	IV.—Operations upon the Mal Genital Organs, Hydrocele, Vari coccle, Relatined Testis, Tumour of the Testis, &c.
,	1906. 1908
Became septic 26 19	Total cases 49 46
Percentage of septic cases 13.8 9.6	Healed aseptically 42 43
II.—Operations on Breast.	Became septic 7 3
Total cases 57 41 Healed aseptically 52 36	Percentage of septic cases 14.3 6.5
Became septic 5 5	
Percentage of septic cases 8.7 12.2	V.—Operations for Quiescent Appendicitis.
III.—Operations on Thyroid	Total cases 65 90
Total cases 13 16	Healed aseptically 59 87
Healed aseptically 12 15	Became septic 6 3
Became septic 1 1 Percentage of septic cases 7.7 6.2	Percentage of septic cases 9.2 3.3

It will be seen from these tables that, as in the case of the total number of operations, the percentage figures are better in all cases in 1908 than in 1906, with the single exception of operations upon the breast. In some of the published statistics dealing with this question, operations in the neighbourhood of the scrotum, such as hydrocele and varicocele, have been omitted on account of the admitted difficulty of rendering and keeping the field of operation asceptic. It will be seen that in this inquiry we have made no such exception. In no case did the septic infection prove fatal nor did it materially prolong convalescence. For instance, in those cases of hernia in which infection occurred, although the healing of the wound was delayed, none of the patients were detained in bed beyond the usual period of three to four weeks.

While investigating the results of "interval appendicectomies," we had necessarily to inquire into the histories of all the cases of appendicitis during the two years, and we think the following statistics, though not bearing on the main question, are sufficiently important to justify publication.

Operations for Appendicitis.									
7 7 22	1906.	1908.							
Total number of cases		216							
Operations in acute stage (gangrenous with abscess									
or with diffuse peritonitis)	111	128							
Deaths in acute cases	15	12							
Operations in quiescent stage ("interval appen-									
dicectomles")	€5	88							
Deaths in quiescent cases	Nil	Ntl.							
Percentage mortality (in all cases)	8.5	5.5							
Percentage mortality (in acute cases only)									
To sum up, out of every 100 primarily	aseptic	cases							

operated upon, 86.5 healed aseptically in 1906, and 92.8 in 1908. We hope that these statistics will prove useful and of interest to the practitioner and help him to give a patient a fair idea of the average chance of aseptic healing after the commoner operations. We have tried to make these records as accurate as possible and we have embodied in them the results of the work of four surgeons and three assistant surgeons.

In conclusion we must thank Dr. Slater, the head of the clinical laboratory of St. George's Hospital, for the kindly interest he has taken in our paper; and we are greatly indebted to him for the detailed description of the sterilising methods now in use.

THE RELATION OF ALCOHOL TO IMMUNITY.

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THE great amount of controversy which has arisen over the question of the action of alcohol on the human body has given rise to much experimental work on its action in animals. One of the chief interests of the question lies in the relation which alcoholism plays in the reaction of the body to infections. While much clinical evidence and general experience goes to show that large quantities of alcohol and the continuous use of moderate quantities in some individuals cause a lowering of the resistance to infectious disease, no definite evidence can be obtained as to its effect in small quantities. Experiments on animals have shown that there is in them a definite lowering of the resistance to infections when they are under the influence of alcohol.

The question as to how the alcohol acts does not seem to have been decided, though many statements have appeared to the effect that this drug lowers the resistance to disease by acting upon the phagocytes, and so inhibiting their activity. These statements have their foundation upon the fact discovered by Metchnikoff, that drugs such as opium depress the activity of the white cells so that there is less phagocytosis than in normal animals. Since, however, it is now evident from the work of Wright 2 that phagocytosis is dependent upon substances in the serum it seemed that it might be of interest to determine by means of the opsonic index upon which factor-serum or phagocytes-the alcohol does act in an alcoholised animal. Delcarde showed that animals when given alcohol succumbed during a course of immunisation against anthrax while the controls lived. Abbot showed that animals alcoholised are more sensitive to harmful effects of several micro-organisms—e.g., streptococcus, staphylococcus, and bacillus coli. Laitmen gave anthrax vaccine subcutaneously to six alcoholised animals and all died, while of four control animals only one died. Friedberger 6 has shown that one injection of alcohol increases the quantity of the antibodies while much alcohol diminishes them, but Fraenkel was not able to confirm this harmful influence.

Metchnikoff sums up the matter by saying: "Impairment of their [animals under alcohol] resistance was manifested by the inactivity of their white blood cells: alcohol therefore has a harmful action on phagocytes." Statements of a similar kind are quoted in the work by Horsley and Sturge. They say: "It is now proved that alcohol even in tiny doses paralyses more or less the white cells. Alcohol renders the white cells less alert, so that they remain passive and motionless in the presence of dangerous microbes." Woodhead has stated that alcohol has an action on the antibodies in the serum, which are regularly but distinctly reduced. Kruschilin observed in alcoholised

rabbits a quicker course of infection and a quicker sprouting of spores than in control animals; he considers that the activity of the phagocytes is inhibited by the alcohol; he used staphylococcus, anthrax, and the hay bacillus in his experiments.

The experiments detailed in this paper were made with the object of determining the effect of alcohol, firstly, upon the phagocytes; and secondly, upon the production of anti-bodies which were gauged by taking the opsonic index.

Method.—The opsonic index was estimated in the usual way. The animals (rabbits), which were treated with alcohol (diluted), were injected by the vein of the ear. In the animals subjected to continuous alcoholism the treatment was commenced with small doses and gradually increased, the injections being made every other day and the treatment continued from two to four weeks; a tolerance is gradually established and the doses can be increased; the maximum dose obtained was once 2.5 cubic centimetres of absolute alcohol well diluted in normal saline. The minimum dose commenced with was 0.1 cubic centimetre. Rabbitsshould not be repeatedly injected subcutaneously with even dilute alcohol, as necrosis is apt to occur at the site of injection.

Action of alcohol upon the phagocytes.—In studying this action the following method was used: the blood was dropped into 1.5 per cent. sodium citrate and centrifuged down; the supernatant citrate was then drawn off and the corpuscles were mixed with normal saline made up with the required strength of absolute alcohol and this mixture allowed to stand, with occasional mixing, for about one hour. The corpuscles were then centrifuged down and immediately used.

Small quantities of alcohol.—The first experiments were made with small quantities of alcohol in order to see if this had any effect, either stimulant or depressing, upon the action of the phagocytes. Dilutions of alcohol 1 in 100, 1 in 50, and 1 in 25 were made: human serum and staphylococcus aureus were employed, and in all the experiments human corpuscles were used.

```
50 cells. Index.
Normal corpuscles
                           + serum + cocci = 220 = 1
                    (1-25) + \dots + \dots = 218 = 1

(1-50) + \dots + \dots = 221 = 1
Alcoholised ,,
     ,,
                    (1-100) + ,,
                                     + ,, = 198 = 0.9
```

The conclusion from this experiment is that by treating white cells with the quantities of alcohol given no effect on phagocytic activity is apparent.

Stronger solutions of alcohol.—Dilution 1 in 5: The corpuscles were next treated with a very strong solution of alcohol, 1 in 5, with the following result :-

```
50 cells.
Normal corpuscles + serum + cocci = 212
Alcoholised , + , + , = 0
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The white cells were here obviously much damaged by the alcohol and probably actually killed as the majority were broken in appearance and very granular.

Experiments were then made to determine at what concentration of alcohol the corpuscles are affected, and for this purpose two dilutions of alcohol were used for treating the corpuscles, 1 in 8 and 1 in 10.

```
50 cells. Index.
Normal corpuscles
                            + serum + cocci = 269 = 1
Alcoholised , (1-10) + ,, + ,, = 260 = 1
,, ,, (1-8) + ,, + ,, = 132 = 0.5
```

The phagocytosis in the last case is lowered to half the normal, and though the corpuscles were not broken up there was some evidence that the alcohol of this strength had acted upon their structure in that the outline of the nucleus in many cases was becoming irregular as though small "streamers" of nuclear protoplasm were projecting into the cytoplasm.

From these experiments it may be concluded that alcohol has no effect upon phagocytic activity until it is of such a concentration as to seriously injure the vitality of the cells. Moreover, it is practically impossible that it could occur in such quantities in the blood as to be in a solution of 1 in 8, at which dilution it begins to exert its effect upon the cells.

Effect of alcohol on the opsonic undex .- 1. Non-toxic dose of alcohol. A cubic centimetre of alcohol was injected subcutaneously and caused no apparent clinical effect. Blood was withdrawn 24 hours and three days after the injection and tested against staphylococci.

Metchnikoff: Immunity in Infectious Diseases (Cambridge, 1905).
 Wright: Studies of Immunisation (London: Constable, 1909).
 Delearde: Annales de l'Institut Pasteur, 1897, p. 837.
 Abbot: Journal of Experimental Medicine, vol. i., p. 447.
 Laitmen: Zeitschritt für Hygiene, 1900, vol. xxxix., p. 206.
 Friedberger: Quoted by Metchnikoff, Harben Lectures, Hygiene Tissue, 1906.

of Tissue, 1906.
7 Horsley and Sturge: Alcohol and the Human Body. Mondhead: Recent Researches on the Action of Alcohol in Health and Sickness, quoted by Horsley and Sturge.
 Kruschilin: Zeitschrift für Immunitätsforschung, Band 1, 1909,

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50 cells. Index.
$4 hours —
   Corpuscles + normal rabbit serum + cocci = 211 = 1
            + alcohol ,, , + ,, = 285 = 1.3
Three days-
   Corpuscles + normal rabbit serum + cocci = 283 = 1
           + alcohol ,, ,, + ,, = 279 = 0.98
```

A small non-toxic dose of alcohol causes a rise in the opsonic index of short duration.

2. Toxic dose of alcohol. - The effect of this was studied by giving a rabbit a single large dose (4 cubic centimetres) subcutaneously. The clinical effect of this was respiratory distress and some collapse. The symptoms appeared in half an hour and lasted about four hours. The animal's serum was tested four hours and 24 hours after the injection.

```
Four hours-
    Corpuscles + normal rabbit serum + cocci = 380 = 1
              + alcoholic ,, ,, + ,, = 294 = 0.77
       ••
    Corpuscles + normal rabbit serum + cocci = 248 = 1
              + alcoholic ,, ,, + ,, = 269 = 1.08
A toxic dose of alcohol lowers the opsonic index for a few
```

hours, but recovery has taken place in 24 hours.

Effect of chronic alcoholism on the opsonic index. was treated with gradually increasing doses of alcohol, the injections being given intravenously every other day. Serum taken at various intervals of time gave the following results :--

```
Eleventh day-
                               Three weeks-
 Index to staphylococcus = 0.72
                                 Index to staphylococcus = 0.72
                                    ,, tubercle bacilli = 0.69
    ,, tubercle bacilli = 0.78
Sixteenth day-
                              Four weeks-
 Index to staphylococcus = 0.76
                                Index to staphylococcus = 0.78
    tubercle bacilli = 0.77
                                    ,, tubercle bacilli = 0.70
```

Chronic alcoholism produces a marked lowering of the opsonic index, although no toxic symptoms are produced.

Effect of alcoholism on reaction to vaccination.—A rabbit which was under the influence of chronic alcoholism was injected with a vaccine of 1,000,000,000 staphylococcus aureus and its reaction compared with that of a normal rabbit similarly treated.

Before the vaccine—				5	0 cells.		Index.
Alcohol rabbit	•••	•••	•••			=	0.79
Normal ,,		•••	•••	•••		=	1
24 hours after the vaccine—							
Normal rabbit				=	218	=	1
Vaccinated alcohol rabbit				=	206	=	0.94
" normal "	•••		•••	=	288	=	1.32
Third day after raccination—							
Normal rabbit				=	302	=	1
Vaccinated alcohol rabbit				=	229	=	0.7
" normal "				=	308	=	1
Sixth day—							
Normal rabbit		•••		=	203	=	1
Vaccinated alcohol rabbit				=	136	=	0.6
" normal "			•••	=	207	=	1

The effect of this vaccine on the rabbits shows that where a normal rabbit would respond to a vaccine with a considerable rise on the opsonic index a rabbit under the influence of alcohol shows reaction, the index not rising above normal. The injections were repeated, using a much thicker emulsion of killed organisms.

Before vaccination—	56	cells.		Index.
Normal rabbit	=	203	=	1
Alcohol	=	136	=	0.6
Rabbit to be vaccinated	=	207	=	1
24 hours after the injection—				
Normal rabbit	=	342	=	1
Vaccinated alcohol rabbit	=	268	=	0.78
., normal ,,	=	395	=	1.15
Third day—				_
Normal rabbit	=	570	=	1
Vaccinated alcohol rabbit	=	382	=	0.67
" normal "	=	352	=	0.61
Sixth day—				_
Normal rabbit	=	3 34	=	1
Vaccinated alcohol rabbit	=	357	==	1.06
" normal "	=	43 6	=	1.3
Ninth day—				
Normal rabbit	=	387	=	1
Vaccinated alcohol rabbit	=	352	=	0.8
. ,, normal ,,	=	476	=	1.26
Twelfth day—				
Normal rabbit	=	284	=	1
Vaccinated alcohol rabbit	=	197	=	0.7
,, normal ,,	=	296	=	1

The large dose was sufficient to produce a marked negative phase followed by a positive one; the negative phase brought the normal vaccinated rabbit's index down to the level of the alcoholised one after a slight rise in each case; from this point the reactions show a marked difference, the normal vaccinated rabbit's index mounts up to 1.3 while the alcoholised rabbit's index starting from the same level mounts up only to about normal. The reaction lasts rather longer in the case of the normal vaccinated rabbit.

These results show that one of the effects of chronic alcoholism on the animal's body is to act upon the mechanism which produces the anti-bodies in such a way as to render it less sensitive to the invasion of killed microorganisms so that the reactions are not so great as in a normal animal; it is interesting to note also that the negative phase is less marked in the alcoholised rabbit. It would naturally be inferred from such results that animals under the influence of alcohol would show less resistance to infections by living organisms than the normal animal, as has been shown by experiments referred to previously.

The next experiment therefore was to try the effect of such living cultures upon the reacting mechanism. A rabbit under the influence of alcohol was infected intravenously with a living culture of staphylococcus aureus and at the same time a normal animal was treated with an equal quantity of the same emulsion of staphylococcus; the variations in their opsonic indices were followed for several days; the rabbits showed no clinical signs except a slight loss in weight in each case. The opsonic index of the alcoholic rabbit before infection stood at 0.7. 50 cells were counted in each case.

2's hours after injection-			50 cells Index.
Normal rabbit serum	+ sta	phyloc	occi = 107 = 1
Infected alcoholic rabbit s	erum+	,,	= 70 = 0.6
,, normal ,,	,, +	••	= 140 = 1.3
Third day-			
Normal rabbit serum	+	,,	= 349 = 1
Infected alcoholic rabbit	+	,,	= 106 = 0.3
,, normal ,,	+	••	= 161 = 0.4
Fifth day-			
Normal rabbit	+	,,	= 465 = 1
Infected alcoholic rabbit	+	,,	= 240 = 0.5
,, normal ,,	+	,,	= 358 = 0.77
Seventh day-			
Normal rabbit	+	,,	= 316 = 1
Infected alcoholic rabbit	+	**	= 89 = 0.55
", normal "	+-	••	= 162 = 0.5
Ninth day-			
Normal rabbit	+	,,	= 335 = 1
Infected alcoholic rabbit	+	,,	= 212 = 0.63
,, normal ,,	+	••	= 385 = 1.15
Eleventh day-			
Normal rabbit	+	,,	= 467 = 1
Infected alcoholic rabbit	+	••	= 486 = 1.04
,, normal ,,	+	••	= 668 = 1.42
Thirteenth day-			
Normal rabbit	+	••	= 284 = 1
Infected alcoholic rabbit	+	,,	= 247 = 0.87
" normal "	+	**	= 388 = 1.36
Fifteenth day-			
Normal rabbit	+	,,	= 312 = 1
Infected alcoholic rabbit	+	,,	= 225 = 0.72
" normal "	+	**	= 364 = 1.16

These results show as would be expected from the previous ones that the production of antibodies as represented by the opsonins is very much feebler in an alcoholised rabbit than in a normal rabbit when both are infected with living microorganisms. In this case both animals survived the injection, and though they suffered from a prolonged negative phase both eventually showed a positive phase; the difference of reaction is marked, the alcoholised rabbit shows a much lower index during the negative phase and a less marked rise during the positive reaction, thus proving again that the alcohol has interfered with the reactive mechanism.

Though these results are definite for animals and probably show the method by which alcohol lowers resistance to disease in man the conditions under which the experiments are performed are not strictly the same in the two cases. The alcohol present in alcoholic liquors is not pure alcohol alone, but contains other substances which may in large quantities be equally deleterious; at the same time it is probable that such toxic substances would act in the same

way as the alcohol does, by depressing the activity of the reacting mechanism.

Another important difference to be remembered in applying these results to the case of man is that of tolerance. The experiments were carried out after a few doses of alcohol had been administered and such doses were given in gradually increasing quantities. In man, however, there may be the same dose, roughly speaking, continued over a great number of years, in which case it is probable that a high degree of tolerance being induced no abnormal condition of the reacting mechanism is incurred.

In those cases in man in which alcohol does lower the resistance to infections it is probable that it acts in the same manner as it appears from these experiments to act in rabbits, by its action on the production of antibodies and not from any action directly upon the phagocytic activity of the white cells.

Conclusions.—1. Alcohol in small quantities has no action upon the phagocytic activity. 2. It has no action on the phagocytic activity until it is present in 12.5 per cent. strength. 3. Small quantities of alcohol injected into rabbits may stimulate the production of antibodies temporarily. 4. A large dose of alcohol lowers the opsonic index for 24 hours. 5. Continuous moderate doses of alcohol cause a permanent lowering of the opsonic index. 6. The reacting mechanism to vaccines is much less effective in alcoholised rabbits than in normal rabbits; the difference is still more marked when living micro-organisms are used.

SOME COMPLICATIONS AND DANGERS OF NASAL SURGERY.1

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During the last 20 years nasal surgery has made very rapid advancement, the technique has much improved, and areas which at one time were deemed inaccessible and dangerous can now be reached with comparative safety, while the vulnerable parts of the ethmoidal labyrinth, for instance, have been more clearly defined. In recent years the attention of the medical profession has been drawn to the importance of surgical procedure in many of the cases previously treated—and very often unsuccessfully treated—by douches, snuffs, &c. Medical men, as a rule, did not hanker after such cases, which seldom did credit to their treatment; and often the patients, in a miserable condition from headache, foul nasal discharge, cough, and expectoration, &c., dispensed with medical advice, and either resigned themselves to their condition or gave themselves up, body and soul, to the remedies of the unscrupulous quack. Nowadays there are few diseases of the nose that we cannot in some way ameliorate, and there are many sufferers that we can reasonably promise to restore to perfect health. Naturally the increased number and the magnitude of nasal operations have produced complications and dangers unheard of in pre-operative days, and it is on these more particularly that I propose to dwell, completing the imperfect record of personal experience by cases which I have observed under the care of others.

DISEASES OF THE MIDDLE TURBINATE.

The middle turbinate, by far the most interesting and important of the spongy bones, is very commonly the site of disease of varying forms and intensity, and from its close proximity to the openings of the anterior group of sinuses it will be obvious to you that alterations in its size must materially influence the drainage of those sinuses. Fortunately, in many of the cases of acute inflammation of those sinuses the inflammatory products force a way out and recovery speedily follows, but occasionally—and I venture to say more commonly than we think—the sinuses only partially empty themselves, and one is face to face with the beginning of a chronic sinus supparation.

Diseased conditions of the middle turbinate require its

partial or complete removal. It is said that fracture of the cribriform plate of the ethmoid has been caused by the use of the cold wire snare in this procedure. This I very much doubt, but I have seen post mortem a case where this structure showed a perforation supposed to have been caused by Walsham's scissors in removing the anterior end of the middle turbinate, death being due to suppurative meningitis.

A point which I should like to strongly emphasise is the importance of having free access to the middle turbinate before attempting its removal. I refer to the correction of deviations and obstructing spurs, which not only occlude the view but very frequently conceal an enlargement and prevent its complete removal. If this is not done the mucous covering of these deviations is almost certain to be damaged and troublesome adhesions between the septum and turbinates are extremely likely to follow and will be very difficult to cure. The surgery of the nasal septum was until a few years ago in a most unsatisfactory state. The operations were manifold and the armamentarium employed was a most extensive one, and the results in many cases were deplorable. Adhesions to the turbinates were common, perforations and sloughing of the septum were frequent, and I know of a case where collapse of the tip of the nose occurred and transformed a well-shaped into an ugly snubnose. A few years ago Killian introduced his now famous operation of submucous resection of the septum, and I can unhesitatingly recommend it to you for practically all cases of septal deviation. Carefully and skilfully done it has no equal. It will afford easy access to the diseased middle turbinates, it will render any after-treatment simple, and it will make it possible for you to obey the golden rule for successful nasal surgery-namely, to have efficient drainage.

By far the most important disease of the middle turbinal region requiring surgical intervention is polypoid degeneration, commonly called nasal polypi, and there is no pathological condition in the nose which demands such careful, thorough, and patient treatment. Associated as it often is with suppuration and sinus infection, it will be at once apparent to you that it is a prolific source of the complications which occur in nasal surgery.

Ethmoidal curetting, the only operation worth doing for nasal polypi and apparently a dangerous procedure, is one which in skilled hands is attended with brilliant results. The dangers I shall enumerate to you, but only the most important will be reviewed at length. They are: (1) hæmorrhagic effusion into the eyelids and orbits; (2) orbital abscess; (3) necrosis of the frontal bone; (4) necrosis of the superior maxilla; (5) fracture, puncture, and laceration of the cribriform plate, suppurative meningitis; (6) suppurative meningitis apart from injury; (7) severe hæmorrhage; and (8) optic neuritis and blindness.

The first of these, effusion into the eyelids and orbit, is very common and of no moment. Orbital abscess, very rare, requires external incision, as do necrosis of the frontal bone and superior maxilla, but such unfortunate occurrences should not deter one from thoroughly clearing out the disease. To be timid with ethmoidal curetting will certainly deprive the operation of much of its success.

I had the good fortune to see a case which well illustrates all the complications I have discussed and a few more. Double ethmoidal curetting was performed on a woman rather over 30 years of age, who was the subject of old-standing nasal polypi and ethmoidal suppuration. A few hours later both eyes were closed with hæmorrhagic effusion, and, as is usually the case, she had severe frontal headache. At night the temperature was 101° F., being 99.5° in the morning. This febrile condition persisted, although at the end of the first week the effusion had left the eyelids, and the headache was merely a dull aching heaviness. Four days later puffiness appeared over the right nasal bone and the nasal process of the superior maxilla, and in a few days fluctuation was made out. The abscess was freely incised; a little thin pus escaped, and some necrosed bone was soraped away; it was drained. A week after, during which time the temperature had varied from 99° to 102°, a similar but larger swelling appeared along the lower orbital margin and was similarly treated. A week later just the same happened in the right frontal sinus region and subsequently on other parts of the skull. By this time the headache had become intense, optic neuritis was diagnosed, the eyelids were cedematous, and drowsiness had developed. At night she was delirious, and occasionally in

¹ Founded on an address delivered before the Nottingham Medico-(Mirurgical Society.

the last two days of her life she had a rigor. The postmortem examination revealed extensive necrosis of the superior maxilla and frontal bone scattered in small patches, and giving the skull a worm-eaten appearance. The cribriform plate was reduced to a soft pulpy mass, and the crista galli of the ethmoid floated free in the pus of a basal meningitis. All the accessory sinuses contained pus. The case, I think, is unique, and fortunately so. Its gradual progression to a fatal issue occupied about five weeks and nothing seemed to influence its course.

The cribriform plate of the ethmoid—that bugbear of most nasal surgeons in their early days—is occasionally punctured, fractured, or lacerated, and fear of this has time and again led to failure. But really a little care in watching the position of the cutting end of the curette with regard to the plane of the cribriform plate will prevent any damage. It is not so easily punctured as one would imagine-access to it is through a narrow slit, I might call it, and to get there requires some force. Still, the indiscriminate use of a cup-shaped curette with the cutting edge pointing upward will undoubtedly injure this structure, and it was in much this way that another death I have seen occurred. The instrument was a Grünwald's curved curette, and although the cutting edge was mostly directed towards the orbit, at times it must have strayed towards the vertical plane, and then the damage was done. I need not recount to you the further history of the case beyond telling you that acute suppurative meningitis reached a fatal termination in four days. The symptoms in such a case are similar to leptomeningitis from other septic causes but more severe. The diagnosis is never in doubt and the treatment is always in vain. Operation need not be thought of.

Before finishing this fragmentary description of the dangers of ethmoidal curetting a word of caution will not be out of place in dealing with older patients—those over 50 years of age—the subjects of long-standing sinus suppuration and polypi. Many of them have on frequent occasions had polypi removed; the middle turbinate, or what remains of it, is in a state of degeneration, and the tissues are of a pale bluish anæmic colour. The nose is full of pus, and perhaps all the sinuses are infected, and the bone destruction is usually much greater than one can diagnose by the speculum and probe.

A very interesting case—one that well exemplifies the risks of old-standing nasal polypi and suppuration in old people—was that of a man, 70 years old, who for 40 years had been the victim of nasal polypi. Time and again the polypi were removed by the snare, only to recur in a few months. Every visit to the surgeon he vowed would be his last, and he actually went for two years with his nose completely blocked. However, this state of things could not continue; his health began to decline, the pus which he was swallowing ruined his digestion, whilst cough and expectora-tion repeatedly spoilt his night's rest. He was obviously breaking up; headaches—occasionally frontal and sometimes occipital, but oftener general—still further reduced his strength. His spirits flagged, and at odd times he fell into a drowsy, half-somnolent condition. The headache increased and became so excruciating that he was compelled to seek advice, hoping that another clearance of his nasal passages would relieve him, as it had done before. This time, however, it was thought that the nasal condition would not account for the intensity of the headache, but in the hope that the removal of pressure and the improved drainage would allay the pain the larger polypi were removed under cocaine and adrenalin anæsthesia with the cold wire snare. There was no improvement; the operation had failed to benefit the headache. 12 days later he died, and the course of the illness was particularly interesting. He gradually became drowsy, his temperature at times reached 102° F., and his repeated request was for something to relieve the headache. He retained his faculties to the end, even talked and made witty remarks. and only for a couple of hours before death did he become quite unconscious. Throughout his pulse was strong; he had but one rigor and had no convulsions. Optic neuritis was absent. Twitching of the right arm and leg appeared for a day, and brief cycles of Cheyne-Stokes breathing were noted. Unfortunately no post-mortem examination was made, and thus the diagnosis was in doubt. Was it a cerebral abscess or suppurative meningitis? I am inclined to think it was the former from the previous history, from the duration of the illness after operation, and from the absence of signs of

meningitis save in regard to the temperature and drowsiness. Moreover, I might venture further and suggest that the abscess was in the frontal lobe. The cerebral abscess, if he had one, was probably old-standing, and its latent energy was stimulated by fresh absorption from the raw surfaces left after the removal of the polypi. Therefore I should like to impress upon you the importance of early and thorough treatment of nasal polypi and ethmoidal suppuration and to remind you of the complication which may ensue in old-standing cases.

THE SURGERY OF THE FRONTAL SINUS.

The surgery of this sinus has progressed with leaps and bounds since Ogston in 1884 described three cases of empyema which he had treated by operation. There is still room for great improvement, and I look forward to the time when one will be able unhesitatingly to recommend the radical operation without being haunted by fears of osteomyelitis of the skull and meningitis and the lesser evils of a discharging fistula in the orbit and continuance of the nasal suppuration. I would not have you think that I condemn the operation. Far from it, but I think many cases have hitherto been unwisely subjected to operation when the only symptoms of the trouble have been a discharge of pus from the infundibulum and an occasional headache.

To begin with, the deformity left after the radical treatment cannot be lightly laid aside. The disfigurement is obvious, and subjects of the double operation acquire a weird physiognomy, especially as the capacity of the two sinuses frequently varies. In women this is always a serious matter. Obliteration of the sinus, the common operation, is sometimes impracticable from its size. One has then to face the alternative of keeping a drainage-tube in the infundibulum till all discharge ceases. And this is no trifling matter if you consider that a rubber drain protruding at the inner angle of the orbit has to be worn for a considerable time, and then a silver cannula has to be inserted to prevent contraction of the infundibulum, and may have to be used for many months or even years. The uncertainty and tediousness of this mode of treatment try the patience of the surgeon and more so that of the patient, and some have drifted into a hopelessly neurotic condition, whilst others have become confirmed hypochondriacs. A hospital patient once told me that if the discharge from the orbital fistula could not be stopped he would commit suicide, and he looked as if he meant it.

The more serious and almost universally fatal complications of the radical operation are osteomyelitis of the skull. meningitis, and cerebral abscess, and to illustrate the first of these I will take the case of a young girl who was a sufferer from intense right frontal headaches and chronic nasal discharge. The operation was performed by Killian's method but no bridge of bone was left to preserve the contour of the orbit. A drainage-tube was passed into the infundibulum, and it was kept there for a week, till the skin incision had healed, and was then removed. The cavity was packed daily with gauze through this opening. Evidently the cavity was not being properly drained, for at the end of the first week the temperature rose to 102° F. and for the next few days ranged from 99° to 101.5°. The wound was opened up and one of the ramifications of the sinus was found shut off and full of pus. The gauze packing had not reached this point; otherwise the operation area looked The wound was opened up and free drainage was established, the gauze packing being continued. A few days later the skin over the frontal sinus assumed that glossy appearance which, to my mind, is a bad omen in such cases. At first there was no pitting on pressure, but a deep-seated tenderness led one to suspect bone inflammation. The wound was again opened up and the tissues were raised to expose a little of the frontal bone. This was found roughened and the periosteum over it was thickened; a drop of pus escaped on incising it. Perfect drainage was established but failed to influence the course of the bony inflammation. Œdema of the forehead with tender spots here and there over the skull were a fitting accompaniment to marked drowsiness, intense headache, and other evidence of septic infection of the meninges. Slowly she sank, and during the last two days of her life she was quite unconscious. She died about five weeks from the date of operation. Post-mortem examination revealed patchy osteomyelitis of the skull and purulent meningitis. Scattered all

over were small areas of necrosis from which beads of pus oozed on pressure.

No operative treatment seems to arrest the progress of osteomyelitis of the skull—and even the very radical proceeding of incising the scalp from ear to ear and chiselling away the outer table of the frontal bone failed to stop the spread in another case. In this case the drainage was apparently inadequate, and if one reflects on the irregularity of the boundaries of the frontal sinus, on its overhanging anterior surface perforated by venous channels, one can easily imagine that when the skin and tissues are allowed to fall into position how liable a small pocket is to be cut off. Once this happens time alone is necessary for it to become septic, for it seems well-nigh impossible to make the parts aseptic during operation. The subsequent course of the case is well illustrated by the examples I have already given you.

After such a gloomy account of frontal sinus surgery you will wonder why the operation is done, but when you consider that the posterior wall of the sinus is very thin, that erosion imperils the meninges, and that blockage of the fronto-nasal duct from cedema, nasal polypi, &c., is not uncommon, you will, I think, allow that the operation is absolutely necessary in some cases, and when I relate to you the following interesting case you will agree that disease of the frontal sinus involves the patient in considerable risk.

The case was related to me by a friend of mine, who was called in consultation to see a man who lay in bed apparently prostrate with grief at the death of a relative. Physicians said his mental equilibrium had been upset, probably from shock, and that restoration to health was but a question of time. Surgeons could find no symptom warranting an operation; in fact, they decided that the case was a medical one. He had no pain, no headache, and no optic neuritis. The appetite was poor and the bowels were constipated. He was listless and apathetic, would speak when spoken to, but at other times he lay with his eyes closed and seemed asleep. Someone mentioned "nasal discharge" and the rhinologist was soon on the spot. He detected signs of old ethmoiditis, but careful examination failed to justify any surgical interference. The patient died suddenly a week later, and nothing but increasing drowsiness was noted to help towards a diagnosis. Post-mortem examination revealed erosion of the posterior walls of both frontal sinuses with exposure of thickened dura mater and ethmoidal disease. A large abscess was found in one of the frontal lobes, and this had ruptured into the ventricles and caused the patient's sudden death.

To sum up the treatment of frontal sinus suppuration. In cases where pus escapes freely from the frontal sinus and is producing no ill-effect on the general health, and only an occasional headache is complained of, and if the patient can be seen periodically, I think the risks of operation more than counterbalance the advantages. Intra-nasal treatment will suffice for the patient's comfort. If, however, any signs of cerebral involvement occur, if the health is undoubtedly suffering from septic absorption, if the headache is intense and persistent, or the infundibulum is narrower and is causing retention, then an operation must be performed.

A few not unimportant sequelæ which one notices after operation, and which, although not of vital importance, are responsible for much discomfort to the patient, might be Dryness of the throat and nose, sometimes with mentioned. crust formation, may follow turbinal and extensive ethmoidal operations, and after the latter I have seen occur what one might term a post-operative ozena. The risk of infection of healthy sinuses must not be lost sight of, and although this at times is unavoidable, still strict attention to the ordinary principles of antisepsis or asepsis will considerably reduce the risk. Acute inflammation of the middle ear and follicular tonsillitis as operative sequelæ need not be discussed, but before I finish there is one more interesting sequela that I wish to bring before you. It is the nervous breakdown which one occasionally encounters.

When considering the benefits that will accrue to the patient one must not forget that the removal of the diseased foci is not the only point at issue. One must satisfy oneself that the patient's confidence will stand the strain of perhaps a tedious and painful course of treatment, and one must be ready to banish all gloomy thoughts, to combat every evidence of flagging courage, and to make the patient feel

that both are successfully striving to produce an early and favourable termination to the trouble. Sometimes one fails; the patient breaks down and various aches and pains are complained of. They may be located in the head at one spot, or a general headache, or in the spine, or assert themselves as weakness in the limbs and joints. The female sex is not alone in the neurotic plight. A man of strong physique and of apparently well-balanced mind may give unmistakable signs of nervous collapse. Women suffer from painful adiregular menstruarion and discover some tender spot in the ovarian region and hurry to the gynæcologist, whilst others adopt the suggestion of friends and undergo protracted rest cures, courses of electrical treatment, &c. Do not conclude that the operation has caused this train of symptoms: it is the tedious after-treatment which has been too much for their nervous systems.

Nottingham.

SOME NOTES OF

A SEVERE CASE OF EXOPHTHALMIC GOITRE, IN WHICH TREATMENT BY X RAYS AND SOUR MILK APPEARED TO BE BENEFICIAL.

By J. C. NEWMAN, M.B., B.C. CANTAB., F.R.C.S. ENG.

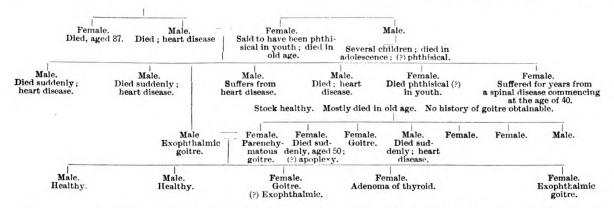
An unmarried woman, aged 31 years, consulted me in September last year for shortness of breath, general weakness, and nervousness. There was evident exophthalmos, the thyroid gland was markedly enlarged, the pulse-rate was 120 per minute, and fine tremors of the fingers were demonstrable. The patient was well nourished and did not appear to be any thinner than when I had last seen her about six months before. The following is the result of further examination. The action of the heart was visible, rapid, and forcible. The apex beat was in the fifth interspace just internal to the nipple line. There was a systolic bruit over the base, but no murmur of valvular incompetency was diagnosed. I considered that the heart was somewhat, but not excessively, dilated. The arteries of the neck pulsated forcibly, and there was a loud "bruit de diable" heard over the thyroid gland. Exophthalmos was very marked. Stellwag's and Grasse's signs were present. The thyroid gland was enlarged, the left lobe being more so than the right. The whole gland was very sensitive to pressure.

The history of the illness is as follows. About ten months previously I had attended the patient for a "bilious attack" with diarrhea and vomiting of unexplained origin. The attack passed off in two days. I noticed at the time a slight enlargement of the thyroid gland, but there were no exophthalmos and no unusual rapidity of the pulse, and the possibly true explanation of the attack did not occur to me. The mother has since told me that she was, then and after, anxious concerning her daughter's health, and that at about that time she noticed that she began to complain of the heat, although she had previously been a "chilly" person. She had no further symptoms, except occasional shortness of breath, for about six months, when she began to notice a feeling of weakness on exertion. This increased for three months, when she suddenly became very much worse, and was obliged to seek advice. In her past history there is nothing of importance, although before puberty she was considered delicate.

Her family history is interesting, and a scheme illustrative of it, so far as I have been able to trace it, is appended. Her father was more or less an invalid after the age of 39 years, when he had a "nervous breakdown." From this time he was liable to "totter as he walked" and at times he used to "shake a great deal." He developed "delusions" at 52. At 53 he had exoph halmic goitre, which terminated in acute mania and death at 55. The mother has had since girlhood a parenchymatous goitre. She has also suffered for many years from an "irritable colon"—i.e., the slightest indulgence in fruits, or even, at times, in green vegetables, will produce frequent large evacuations of undigested stools, accompanied by pain and much distress. She has been prostrated for weeks at a time from this cause. She is in other respects healthy. The family consists of two brothers,

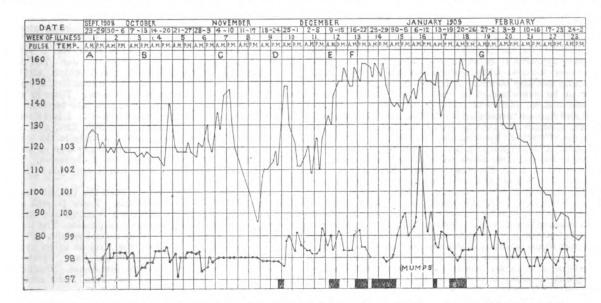
who are healthy, and three sisters. The eldest sister has an enlarged thyroid, and she and her family state that at one time she suffered from the symptoms of exophthalmic goitre, although she never sought medical advice for it. She is now in good health. The second sister has an adenoma of the thyroid gland. She enjoys good health, but says that the gland at times gets uncomfortably large. The third sister is the subject of these notes.

In consequence of her increasing illness Dr. Tooth was asked to see her, and his suggestion of Nativelle's digitalin accounts for the drop in the pulse-rate of the seventh and eighth weeks. Commencing with a quarter of a milligramme per diem on Nov. 8th and 9th, the same dose was given twice on the 10th and five succeeding days, when a single dose per diem was again given. The effect on the pulse is the more remarkable when it is considered that the patient was previously taking



was strictly limited, her society being practically confined to that of her mother, with an occasional short visit from a brother or sister. She was put upon a diet from which red meats, tea, coffee, and alcohol were excluded, and which consisted chiefly of milk and milk foods, fish, a little game, chicken, and bread and butter. The drugs employed will be discussed later. The course of her illness is indicated in the appended chart. Dr. J. S. Risien Russell, Dr. Howard H. Tooth, Dr. Hutchison, and Dr. H. Lewis Jones saw her in consultation with me. The pulse-curve on the chart indicates

The patient was kept in bed, the number of her visitors large doses of the tincture of digitalis. With the fall in the pulse-rate the patient certainly became more restful and composed, and she also slept better. Improvement, however, in other respects did not coincide. The thyroid did not decrease in size, nor was the palpitation much better. On Nov. 18th, while she was still taking a quarter of a milligramme of digitalin per diem, the pulse-rate suddenly, one evening, jumped to 118. An increase of the dose had no effect, and as she complained of feeling sick it was stopped altogether. However, on the 24th she vomited and hereafter the attacks of vomiting seem to account for the high



The upper line is the pulse curve and indicates the highest daily reading from the charts kept at the time. The lower line is the temperature curve. The letters on the chart indicate the general medicinal remedies employed, thus:—A. Tinct. belladonnæ and liq arsenicalis; B. tinct. belladonnæ and tinct. digitalis; C. digitalin nativelle; D. rodagen; E. opium and morphine; F. X rays; and G, sauerin. Attacks of vomiting are indicated by the blackened spaces

the highest daily reading from the charts kept at the time. Most, but not all, of the larger gross variations seem to be capable of explanation. Thus, there was for the first four weeks a gradual fall, presumably due to the rest in bed and other treatment. The rise at the end of the fourth week (Oct. 20th) was coincident with a very bad and persistent attack of palpitation, which was only partially controlled by the hypodermic injection of a quarter of a grain of morphia. From this time the patient steadily became worse. The palpitation became more troublesome, the thyroid grew larger, and the patient became more restless and distressed.

pulse-rate, nor is it surprising when one considers the terrible state to which she was reduced by them.

The condition of the heart was, on the whole, the bright spot throughout her illness. The dilatation which was present at the commencement was certainly increased during the period of vomiting and excessive rapidity of pulse, but never to the extent that one would have thought inevitable. There was a slight systolic bruit to be heard over the base, but I could never make out a murmur which I thought due to valvular incompetence, excepting after the last attack of vomiting on Jan. 24th. On that day and for about ten days

after there was a murmur which I took to be a mitral regurgitant blow. However, it had disappeared by the second week in February, and the heart now appears natural. As regards the action of the heart, it was for the first 13 weeks of her illness astonishingly regular, and at times a beat of over 150 per minute could be counted at the wrist. There were, however, times of faintness when it became imperceptible at the wrist, and during the later weeks it became very irregular in rhythm and force, at times very alarmingly so.

The most painful feature of the case was the vomiting. There were six definite attacks of this, lasting from two to seven days, and although the patient was occasionally sick between the attacks the sickness was on these occasions of a less malign character, relief being obtained by the emptying of the stomach. The first attack occurred on Nov. 24th and was at the time ascribed to the digitalin administered. It appeared to be controlled by cerium oxalate in usual doses. The second and subsequent attacks were more serious. Their duration is shown on the chart by the blackened spaces. Similar characteristics marked them all. A feeling of nausea would increase in intensity for about 24 hours and culminate in an act of vomiting, the vomited matter being usually bile. An hour or so later an attack of retching and vomiting would ensue, which would last from ten minutes to an hour and a half and completely prostrate the patient. After the cessation of the attack she would doze off into a broken and restless sleep for a few hours, from which she would be aroused by another attack of sickness. During the third attack the vomit, hitherto bilious, became coffeeground in character, and in the later attacks it was occasionally fæcal. There was always a tendency for the bowels to be loose during these attacks, especially towards the end of them, and after the last attack there was copious

The condition during these attacks was desperate, and indeed at the close of the fourth and sixth she appeared moribund. Although not absolutely unconscious, she was oblivious to her surroundings, and seemed much like a person in the last stages of a septic peritonitis, with the exception that she appeared to suffer more. With a parched tongue, her pulse uncountable, she lay in a state of muttering delirium, unable to raise her voice above a hoarse whisper or to control her sphincters. Having brought her to the lowest ebb, the vomiting appeared to cease automatically, and she began to make slow recovery. Of each of the remedies employed much the same tale may be told. Raising hopes at first, it seemed later to be overwhelmed by the severity of the disease. Cerium oxalate, tincture of iodine in large dilution, bismuth, soda and rhubarb, prussic acid, salol, carbolic acid, mercury, cotoin, adrenalin and cocaine, separately and in combination, atropine, hyoscine, hyoscyamine, chloretone, opium, and morphia is a melancholy list of the drugs employed. Of these the last two alone were of any real value, and they failed at last. Keeping the stomach empty of food had no effect. The organ filled with bile, the ejection of which was only a matter of time. Stomach lavage at times gave a temporary relief. Blisters or ice to the epigastrium were, I think, helpful for the nausea. Nutrient enemata were well retained throughout. During the earlier part of this period of vomiting the feeding was the matter of the greatest care, but in the later stages she was encouraged to take anything in reason that she fancied. She took tea, coffee, and brandy with apparent benefit. For the rest her food was composed of milk, a few eggs, and biscuits with large quantities of water. She was given strychnine hypodermically. Her body weight was fairly well maintained till the second attack of vomiting, which was accompanied by rapid and extreme wasting. Between each attack she would pick up, to be reduced to extreme emaciation by the succeeding one. The general medicinal remedies employed are shown by the letters on the chart. The belladonna was certainly useful throughout in checking palpitation and restlessness, but I could not see any general beneficial effect, although it was pushed to the verge of poisoning. The arsenic and tincture of digitalis were, I believe, useless, nor do I think the rodagen, though given in full doses, had the slightest effect.

On Dec. 18th Dr. Lewis Jones exposed the thyroid for seven minutes to the X rays. Subsequently I continued the treatment about twice weekly till Feb. 20th, 1909, exposing alternate sides of the gland at each application. The treatment certainly appeared to me to have some beneficial result.

and in this way. The second attack of vomiting had been accompanied by rapid wasting, in which the thyroid participated, but after the attack was over the gland became as large as ever within two days. This wasting occurred again during the third attack, after the commencement of the X ray treatment, but the re-enlargement was very much less marked, and after the fourth attack the gland remained in the condition in which it has been ever since—viz., the right lobe normal, the left lobe the site of an adenoma of about the size of a Tangerine orange. Her neck was at this time, and is now, smaller, according to her own account, than it has been for some years.

After the last attack of vomiting (Jan. 18th to 24th) the diarrhœa was considerably more troublesome than usual. The stools, to the number of six to nine daily, were large and watery, and were accompanied by much abdominal pain and tenesmus, and for part of this period there was melæna. Starch and opium enemata, bismuth, opium, cotoin, salol, and carbolic acid by the muth, opium, cotoin, salol, and carbolic acid by mouth produced no apparent benefit. After this condition had lasted for a week the patient was put upon milk soured by the lactic acid bacillus, in addition to a continuance of the treatment by opium and bismuth (which was continued for another five days). It is curious that from the commencement of the sour milk she began to have relief, not only from the diarrhoea, but from all her other symptoms, and that from this date her improvement was a steady one in every respect. The fact that the improvement followed so closely on the administration of sour milk, would, I suppose, suggest that the latter was not the prime cause of it. It must, however, be remembered that her diet at this time consisted of little else than milk, and that her stomach was dilated and probably in a condition of atony. Under these conditions her intestines may have received little else than soured milk, and this after they had been pretty thoroughly flushed out. The suggestion that her improvement was due to the exclusion of intestinal toxins, probably assisted by the fact that the activity of the thyroid had been reduced by the X rays, seems to me to be at the moment a legitimate one.

During the illness there were two intercurrent complaints of some interest. One was an exceedingly bad attack of conjunctivitis in both eyes (followed by a corneal ulcer in one), which commenced after her room had been filled with smoke from a smoky chimney. The other was a typical attack of mumps, which commenced on Jan. 7th, at a time when she was a little better, and which, although occasioning a good deal of pain and discomfort, appeared, on the whole, to do her very little harm. There is satisfactory evidence that no one who came into her room had been in contact with mumps except myself. I had attended such cases on Dec. 15th, 16th, 19th, 20th, 21st, and 22nd. An interval of at least two hours and a drive in the open of five miles intervened between my visit to any case of mumps and a visit to the patient at present under discussion. These facts seem to indicate that mumps can be conveyed by a noninfected third party.

Since the last date noted on the chart the patient has had some slight trouble from urticaria. There is still slight exophthalmos, the thyroid adenoma remains, and she has had on one or two occasions a little palpitation. The tremors have gone and she has regained her normal weight. She has been able to walk two miles on the level or to go upstairs without discomfort. The pulse-rate has kept between 80 and 90 per minute until the last few weeks. During the present month, however, there has been some return of tachycardia.

Bishop's Stortford.

THE ROYAL SANITARY INSTITUTE.—A meeting will be held on Dec. 8th, at 8 P.M., at 90, Buckingham Palace-road, when a discussion will take place on the Collection and Disposal of House Refuse, to be opened by Mr. J. S. Brodie, M.Inst.C.E., borough engineer, Blackpool. The chair will be taken by Mr. H. Percy Boulnois, M.Inst.C.E., and a general discussion is invited. The new museum providing greater accommodation, the committee is arranging for short exhibitions of sanitary apparatus. The first exhibition, showing working models of sewage distributers and sprinklers in action, is now open for inspection by members and others till the end of January, 1910. The museum is open daily from 9.30 A.M. to 5.30 P.M., and on Mondays to 8 P.M.

Clinical Aotes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF HENOCH'S PURPURA; LAPAROTOMY; PNEUMONIA; DEATH.

BY J. BASIL COOK, M.D., B.CH. VICT., D.P.H. CAMB., SENIOR ASSISTANT MEDICAL OFFICER, EBNSINGTON INFIRMARY, W.

THE following case, having so many points of similarity with that reported by Mr. F. C. Pybus in THE LANCET of Oct. 9th, may prove interesting. The patient, a boy, aged 12 years, was admitted to Kensington Infirmary on March 11th, 1907, stated to be suffering from "acute rheumatism." Upon admission both knees and ankles were swollen, tender, and painful; there was a rash upon the legs which was considered to be peliosis rheumatica; the temperature was 98° F. and the pulse was 96. Three days later he had an attack of vomiting and complained of pain in the abdomen which was most severe in the umbilical region. On the next day the symptoms increased in severity, the vomiting was more frequent, and the vomited matter was blood-stained. There were diarrhoea and tenesmus, blood and mucus being passed in the stools. On the following day the patient was worse, having dulness in the left iliac fossa and a mass of something easily felt on the left side of the abdomen. The bowels were opened frequently, the motions still being blood-stained. A consultation was held, and the possibility of the condition having a purpuric origin was considered; but as the symptoms pointed so strongly to intussusception an operation was decided upon.

The abdomen was opened by Dr. H. P. Potter and a portion of intestine which felt like an intussusception was easily found. A careful examination showed it to be a portion of the small intestine which was considerably thickened for a distance of about 6 inches. Upon tracing this thickened piece of gut upwards and downwards one came upon normal intestine. The thickening was due to extensive extravasation of blood under the visceral peritoneum. Between the fingers this felt like worms in a bag. A few inches lower down there was a second piece of intestine of precisely similar appearance. No peritonitis was present and the incision was closed. The diarrhoea and vomiting persisted for several days but finally ceased on March 22nd, upon which day broncho-pneumonia developed on the left side. On March 23rd the cough was bad and the breathing distressed. A purpuric eruption appeared upon places where there was pressure. The urine was albuminous. From March 23rd to April 9th fresh crops of spots appeared almost daily upon various parts of the body, the head, trunk, limbs, hands (back and palm), and feet (dorsum and sole) being in turn affected. The patient began to get cedematous on April 11th, by which date the urine on heating was practically solid with albumin. The patient died suddenly on April 24th.

At the post-mortem examination there were found pleuritic adhesions and broncho pneumonia in the left lung, a patch of purpuric staining on the left ventricle, and large white kidneys. The other organs were healthy.

I am indebted to Dr. Potter, medical superintendent, for permission to publish these notes.

A CASE OF ASTHMA WITH VASO-MOTOR COM-PLICATIONS.

BY W. MILLER, M.D. EDIN.

IN view of the annotation on "Asthma and Urticaria" in THE LANCET of Oct. 23rd the following case may be of interest.

On Sept. 5th last I was called to see a lady, aged 34 years, who had been taken suddenly ill. It appeared that she had been suffering from a slight cold for some weeks. About midday on Sept. 5th she was stung by a wasp at the root of the second finger of the left hand. She applied a "blue bag." About 10 minutes later she had a paroxysm of sneezing, and as it passed off felt very ill and faint, and was with some

difficulty got to bed. When I saw her, about three-quarters of an hour later, she was propped up in bed, somewhat cyanosed, the respirations were 30 per minute and characteristically asthmatical, the pulse was 120 per minute, regular, but very soft and small, and the limbs and trunk were covered with large urticarial wheals. It was said that she was then better than she had been. Small quantities of brandy were given, and a spray, containing atropine and cocaine in a saturated solution of hyponitrous acid gas, was used frequently. Under this treatment the asthma subsided. The site of the wasp sting was freely scarified and a compress applied. An hour later I was hurriedly summoned, as "the uvula was displaced and choking her." The nettle-rash was now fading, the respira-"the uvula was displaced and choking tions were 20 per minute and slightly noisy, but not asthmatical, there was a constant dry cough, the pulse was 100 per minute, regular, but very weak, and there was considerable cyanosis. She had fainted once before my arrival. On examining the throat the uvula was seen to be very swollen, cedematous, and to a large extent blocking the isthmus faucium; the soft palate was also cedematous. I immediately swabbed the palate and uvula with a solution of adrenalin chloride, 1 in 1000, and as the patient fainted gave a hypodermic injection of digitalin. For an hour her condition remained most critical, she being almost pulseless. During this time the fauces were repeatedly swabbed with the adrenalin chloride solution, digitalin and strychnine were administered hypodermically, and, as she gradually improved, brandy was given by the mouth. Two hours later Mr. Cleveland Smith of Southend kindly saw her with me. condition was then quite satisfactory. The pulse was 90 per minute and of relatively fair volume, the respirations were 18 per minute and of normal character, the cedema of the palate and uvula had almost gone, and there were only faint traces of the nettle-rash. During the next fortnight there were slight asthmatical attacks which were controlled by the use of the spray; she then went to Brighton for 10 days, since when these have ceased. She is now (Nov. 1st) gaining strength, but the pulse is still feeble and there is palpitation on exertion.

There was no history of any previous asthma, but it was stated that her pulse had been commented on as being small by several medical men. There had been several previous wasp stings during the past summer, none of which had any constitutional sequelæ. On examining the site of the sting it was seen to be immediately over a small cutaneous vein, and it would seem possible that some poisonous matter may have been introduced directly into the circulation.

Rayleigh, Essex.

NOTE ON A CASE OF PITYRIASIS RUBRA PILARIS.

BY D. WELLS PATTERSON, M.B. DURH.,
ASSISTANT PHYSICIAN, DEPARTMENT FOR DISEASES OF THE SKIN, ROYAL
VICTORIA INFIRMARY, NEWCASTLE-ON-TYNE; PHYSICIAN TO
THE HOSPITAL FOR DISEASES OF THE SKIN,
NEWCASTLE-ON-TYNE.

A YOUTH, aged 20 years, consulted me at the Hospital for Diseases of the Skin, Newcastle-on-Tyne, for an eruption which had first developed in March of this year. The disease first showed itself as an itching, red, scaly eruption of the face. After about a week it commenced to spread downwards on to the trunk and arms, and finally, in about a month from the commencement the legs were involved. At the same time the patient noticed horny points, developing on the chest first, but soon afterwards on the rest of the body, the arms, hands (especially the backs of the fingers), feet, and legs. Itching was at first very troublesome, but subsided soon after the onset. The patient states that there was no interference with his general health, and that he felt no inconvenience with the exception of the itching and a feeling of tightness in the skin generally.

The following was the condition on examination: The scalp showed a moderate amount of dry seborrhæa and the hair, though abundant, was dry and lustreless. The face was yellowish-red and covered with fine dry scales. The yellowish-red colour extended slightly on to the trunk and was also well marked on the front of the shoulders, in front of the elbow-joints, and on the anterior and posterior surfaces of the lower thirds of the forearms. It was also well marked on the lower part of the abdomen and over the buttocks. The skin

over the whole of the body, from the upper part of the trunk downwards, showed horny papules occupying the situation of the hair follicles, many of the papules being pierced by short broken hairs. In some places the papules were so closely set together that the skin felt like a very coarse nutmeg-grater. On the backs of the fingers the lesions remained discrete. There was very marked hyperkeratosis of the palms and soles, and in the latter situation the thickened epidermis was peeling off in large flakes. The nails were not affected. Apart from the condition of the skin the lad was perfectly healthy, and the urine was in every respect normal.

This case throws no light whatever on the obscure etiology of pityriasis rubra pilaris, and the whole condition was so marked that there was no difficulty in the diagnosis. Perhaps the one unusual feature of the case was the scanty amount of scaling on the body, though on the face this was well shown. My reason and excuse for publishing the case is that every case of this disease which is described may help to establish it as a clinical entity and to clear up disputed points in differential diagnosis.

Newcastle-on-Tyne.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

PATHOLOGICAL SECTION.

Autoplastic and Homoplastic Transplantation of Tumours of Mice — Dissemination of Caroinoma by the Blood Stream in Animals. — Experimental Production of Sarcoma in Mice. — Oophorectomy and the Uterus in the Rabbit. — Iransverse Lexica of the Spinal Cord. — Retro-peritoneal Teratoma Connected with the Spinal Canal.

A MEETING of this section was held on Nov. 16th, Dr. F. W. MOTT, the President, being in the chair.

Dr. M. HAMAND read a paper on Autoplastic and Homo-plastic Transplantation of Tumours of Mice. He said that he wished to bring before them some results of transplanting sporadic tumours of mice into the same mouse in which the tumour had arisen, as compared with corresponding transplantation into other spontaneously affected mice and in normal animals. The only previous attempts at systematic investigation of this kind, besides single cases reported by Loeb, were those recorded from the laboratory of the Imperial Cancer Research Fund. Four mice were inoculated with their own sporadic tumours with two successes; six mice with other sporadic tumours with only one success; three of the tumours employed were tested in normal mice, giving eight tumours in 325 inoculated mice. Loeb's cases were a mammary tumour of a rat re-inoculated into the same animal with positive results, and into two other rats with negative result, and also a tumour of a dog into the same dog and into three other dogs. The provisional results to which Dr. Haaland drew attention were: Of 17 spontaneously attacked mice after removal of the original tumour each inoculated with their own sporadic tumour, 16 had given continuously growing tumours; that gave a positive result in 94 per cent.; only in one the result was negative. Of 27 transplantations of the same tumours into other sporadic mice, only two had been attended with success (i.e., in 8 per cent.) Of the spontaneous tumours employed, 6 had been tested in normal animals; 3 of these were negative in 700 animals, while 3 others gave 32 tumours in 279 mice (i.e., ca. 12 per cent).

		Homologous transplantation.			
-	Auto-trans- plantation into sporadic mouse itself.	Other mice with sporadic tumours.	Young normals.	Old normals.	
2 cancroids	2/2	0/3	0/686	1 –	
1 sebaceous carci- noma	1/1	0/4	4,42		
14 mammary adeno- carcinomata	13/14	2/20	28/251	0,12	
Total	16/17	2/27	32/979		

These experiments allowed some conclusions to be drawn both upon questions connected with transplantation in general and on certain aspects of the problems of cancer. First they illustrated very well the differences obtaining between autoplastic and homoplastic transplantation. Reintroduced into the organism to which they belonged-i.e., into the soil to which the cells were accustomed—they found all conditions for continued existence and growth. Quite different were the conditions in other individuals of the same species, of the same age and sex. By no other means could the existence of individual biological differences between animals of the same species be proved more clearly and the specificity of the milieu each animal represented be demonstrated more strikingly. The experiments showed the advantage which would be gained by the surgeon by employing tissues from the same individual in all transplantations, and showed that it was unreasonable to expect an equally good result with tissues from other individuals. Beside these general conclusions as to transplantation, the experiments had more direct bearing on certain problems of cancer. They demonstrated very strikingly a well-known fact—viz., the danger for the individual operated on if cancer cells were disseminated in the wound and the overwhelming probability that recurrence would follow upon such dissemination. On the other hand, they showed the relatively insignificant danger these cells represented to other individuals, even when introduced under most favourable conditions. last point had a direct bearing on one of the theories of cancer origin one now and then comes across-viz, that implantation of cancer cells from one individual to another played an important rôle in spreading the disease. Even if no other proofs existed to show that cancer always arose de novo in the organism attacked, the consideration of the facts elicited by these experiments showed the improbability of the transference of cancer cells from one individual to another having any etiological significance. Furthermore, these experiments threw light on hypotheses assuming cancer growth being due to a differential of avidity between tumour cells and body cells. The "avidity" of cells could only be tested in an imperfect and indirect way; the "avidity" of tumour cells by their behaviour on transplantation into normal animals, and the "avidity" of body cells by comparison of the suitability of the animal as soil for tumour growth with that of normal animals. In these experiments they had two cancroids which were tested by inoculation into 1000 young normal mice, of which 686 lived more than four weeks, but did not grow in a single animal. In this case it was difficult to assume any increased avidity on the part of the tumour cells. Each of those tumours was transplanted into its own mouse and here gave rise to progressively growing tumours. According to the theory they would expect that the body cells of the mice which allowed cells of such low "avidity" to grow, possessed a still lower degree of "avidity," and that, therefore, these mice would be more susceptible to transplantation of other tumours. But this was not the case. By exchanging grafts between the two animals in which these cancroids had arisen they did not obtain any growth, and these mice were not only refractory against tumours of low avidity, but when tested with another sporadic tumour which grew well in normal mice they also showed themselves completely refractory to this tumour of higher avidity. This experiment was only one instance of a series of similar experiments which all gave similar results. They showed that the conditions for tumour growth were far more specific than was allowed for by the supposition of a mere differential of avidities. In fact, the cells of each sporadic tumour were adapted for a specific milieu and only in this milieu were they able to unfold their real powers of assimilation and growth. The conditions for which two histologically indistinguishable tumours were adapted were so different that they could not be exchanged without the malignant mode of growth ceasing altogether. He had earlier attracted attention to a similar specificity of the conditions for growth, which under certain conditions might be exhibited by transplantable tumours. Two different transplantable tumours, a carcinoma and a sarcoma, each adapted to a different strain of mice, were mixed together and injected into mice of both strains. cells of each tumour showed in this case an elective power for that strain to which they were adapted, so that in each of the two groups of mice only those tumour cells grew which previously were adapted to this special strain. In these transplantations of sporadic tumours they met

with the same phenomenon, only even more pronounced; the conditions of growth were specific for each individual sporadic tumour. The phenomena of immunity to inoculation of cancer exhibited a parallel specificity as shown by Bashford, Murray, and Cramer, and by the author of the paper. While the conditions for progressive growth of the cells of a sporadic tumour were relatively seldom found in other spontaneously attacked animals, a preliminary growth lasting a few weeks was not so seldom observed. This phenomenon of preliminary growth was the same as that which was so frequently seen in transplanted tumours, and it suggested that simultaneous immunisation had to do with the final negative result. The experiments showed that tumour cells from another individual were far more susceptible to such a reaction than were the cells originally belonging to the same individual. The latter either did not set up any immunity reaction on their reintroduction in the body, or if such a reaction was set up, as seemed possible from Woglom's experiments made in the Imperial Cancer Research Laboratory on immunising mice with their own spleens, it had no effect against cells belonging to the same organism.

Dr. J. A. MURRAY demonstrated specimens showing the Dissemination of Carcinoma by the Blood Stream in Animals. Dr. B. R. G. RUSSELL spoke on the Development of Sarcoma arising during the Propagation of a Hæmorrhagic Adeno-carcinoma of the Mamma of the Mouse. After referring to the observations already made and published by Dr. Haaland upon this subject, the speaker proceeded to describe the histological and biological behaviour of a tumour of the mouse which also gave rise after 15 months of propagation to tumours composed of carcinomatous and sarcomatous elements. This tumour, strain "100," was the second tumour which had, in the laboratory of the Imperial Cancer Research Fund, given rise to secondary sarcoma development. The primary growth of the tumour in question was a hæmorrhagic adeno-carcinoma of the mamma of an old female mouse, and situated in the left groin. The tumour was removed by operation, but recurred, and finally the animal had to be killed, when it was found that there were present large metastatic deposist in the lungs. Material from the primary and recurrent growths was successfully transplanted and gave rise to the tumour-strain "100" of the Imperial Cancer Research Laboratories. No trace of sarcomatous tissue could be seen either in the primary, recurrent, or metastatic growths, and the tumours obtained by transplantation remained pure carcinoma for a period of 15 months. At this period it was noted that one tumour which hal grown for a very long period (57 days) in one mouse showed at one part a change in the character of the stroma whereby the normal connective tissue was replaced by an actively growing sarcomatous tissue composed of elongated spindle cells arranged in interlacing bundles. Three other very old tumours of this strain also showed the same change, whereas in none of the young tumours could any such change be seen. As it appeared that long residence of the carcinomatous cells in one animal played a rôle in the production of the sarcomatous change, a systematic investigation of the tumour was made with the object of proving or disproving this possibility. Pure carcinomatous tumours were transplanted, and a certain number of the resultant tumours were killed after 30 days growths, an equal number being allowed to grow until threatening ulceration from expansion of the overlying skin required the destruction of the animal. It was found that the tumours 30 days old always remained pure carcinomata. whereas the sister tumours which were allowed to grow for from 50 to 60 days or more almost invariably showed in some part of the tumour a neoplastic transformation of the stroma. Once initiated this sarcomatous proliferation rapidly spread throughout the tumour, and when these mixed tumours were transplanted the invariable result was the complete elimination of the epithelial constituent of the tumour. This occurred sometimes after one passage as mixed tumour, more usually after two or three passages. That the tumours thus produced were really sarcomata he regarded as being absolutely proved, and referred to Dr. Haaland's work upon the transplantation and metastasis formation of these sarcomata as having already fully proved this question. By choosing young tumours for transplantation it has been also possible to maintain parallel strains of pure carcinoma. which could always serve as fresh starting points for the study of sarooma development. In tumour "100" the pos-ibility of a primary mixed tumour could not be entertained; the

hypothesis that the sarcomatous cells were merely morphologically altered epithelial cells was also quite out of the question. He believed that in tumour "100" the epithelial cells induced after prolonged contact with the stroma cells, 50-60 days, a neoplastic transformation of the connective tissue cells, but did not attempt to premise more definitely the nature of that influence.

Dr. E. F. BASHFORD said that the three communications formed evidence of the very special nature of the investigation of cancer at the present time. The domination of cancer research by medical dogma had passed away and the investigation of cancer was rapidly advancing and could stand alone. Much that had been thought to be fundamental would be overthrown and much that was new would come out. It was now the turn for the investigation of cancer to modify pathological and medical doctrines in many directions. He did not deny the possibility of the parasitic etiology of cancer, but he did deny any analogy between cancer and the processes occurring in any known form of infective disease.

Mr. S. G. SHATTOCK showed the results upon the Growth of the Uteri of Double Oöphorectomy when carried out upon the young rabbit without the application of any ligatures and without injury and displacement of the rest of the generative apparatus. The result in question was a striking overgrowth of the uteri (which in the rabbit are two), as compared with those of an animal of the same size whether it had been pregnant or not. In the case of the human subject it was still doubted by some whether the ovary was the organ which dominated the growth of the rest of the generative apparatus. The evidence to the contrary in the case of man was in-direct and inconclusive. The case was parallel with that direct and inconclusive. The case was parallel with that of the ill-development of the testicles in cryptorchism. In scarcely any cases of bilateral cryptorchism was there evidence that the testicles were spermatogenic Nevertheless, such individuals might present all the external secondary marks of maleness. The right deduction must be that the hypoplastic undescended testicle functions for a short period only, and then rapidly becomes senile, and as in the case of the ovary the speaker held that a fully developed condition of the uterus was evidence that one or both ovaries had at some time functioned, though they might have afterwards functionally atrophied; the disparity presented between the size of the ovaries and that of the uterus might be erroneously read as a proof that the uterus had grown independently of any ovarian influence. In both sexes the speaker held that the external sexual characters were due to the production of an internal secretion, which probably acted upon the vascular supply of the accessory organs through the nervous system, but he thought that the production of this was in some indirect way dependent upon spermatogenesis or ovulation. There was a belief current amongst poultry breeders that section or partial excision of the oviduct in young hens led to atrophy of the ovary, the procedure being adopted to produce poulardes or fat birds for the table. This belief Dr. C. G. Seligmann and he had demonstrated to be quite erroneous by removing the oviduct in young birds examining the ovary when the birds were fully grown.

Dr. S. W SEWELL and Dr. H. HUME TURNBULL reported a case of Transverse Lesion of the Spinal Cord at the level of the sixth cervical vertebra. The patient was a boy, aged 14 years, who was knocked down by a motor cab, sustaining a fracture-dislocation at the level of the sixth cervical segment. Some movement in the right arm was retained and slight movement at the left shoulder, but there was otherwise complete paralysis of the limbs and trunk, with priapism and loss of sphincter control. Tactile sensation was diminished, but present below the level of the lesion. accompanied by marked thermo-anæsthesia. Death ensued eight weeks after the injury. The pathological examination dealt with (1) tract degenerations, ascending and descending, from the lesion; and (2) the changes produced in the cells of origin of the fibres injured. 1. Below the lesion descending degeneration, as shown by Marchi staining, was present to a marked degree in the crossed and direct pyramidal tracts, and to a lesser degree in the rubrospinal and vestibulospinal tracts. The comma tract was degenerated as far as the ninth dorsal segment and below this region Flechsig's oval area, and the triangle of Phillipe showed degenerated fibres, the latter tract as low as the third sacral segment. Marked degeneration was present on either side of the anterior fissure of the cord as low as the third

sacral segment, and since the direct pyramidal tract terminates in the upper lumbar region it was suggested that these fibres constituted the tract originally described by Mott from the corpora quadrigemina. The fact that these fibres descend to the upper sacral segments suggested some connexion with the voluntary control of the sphincters. Ascending degenerations were present in the direct cerebellar tract to the restiform body and in Gowers's tract, which divided into two parts in the upper portion of the pons, part passing to the cerebellum by means of the superior cerebellar peduncle, part entering the common fillet. At a lower level considerable numbers of fibres passed from Gowers's tract to the region of Deiters's nucleus. The posterior columns were totally degenerated as far as the gracile and cuneate nuclei, but even above the decussation of the fillet scattered degeneration was observed among its fibres. Ascending scattered degeneration was also present in the anterior ground bundles and in the continuation of these-i.e., the posterior longitudinal bundles—through the brain stem. Degenerated fibres from the posterior longitudinal bundle passed outwards to Deiters's nucleus, one through the valve of Vieussens, and some to the corpora quadrigemina. Degenerated fibres passing from the fillet into the lateral nucleus of the thalamus were also found. Scattered degeneration of coarse fibres was present in the pyramidal tracts above the lesion. Sections of the middle and lateral lobes of the cerebellum showed degenerated fibres from the direct cerebellar tract and Gowers's tract, sweeping both to the roof nuclei and dentate nuclei, and to the neighbourhood of the granular layer of the cortex. 2. Cell changes. The leg areas of the ascending frontal convolutions presented marked Betz cell changes from slight degrees of chromatolysis and nuclear excentricity to ghost cells, though a few cells were normal. Similar changes were present in the cells of the lower portion of the arm area, while the face and trunk areas presented no changes. No changes were seen in the large pyramidal cells or in the ascending parietal convolutions. Similar chromatolytic changes were present in the cells of Clarke's column, as also in many of the large cells of the red nuclei and Deiters's nucleus. No changes were seen in the large motor type of cells of the thalamus.

Mr. RAYMOND JOHNSON and Mr. T. W. P. LAWRENCE exhibited a specimen of Retro-peritoneal Teratoma connected with the Spinal Cord. The patient, a boy of 2 years and 9 months, had a swelling in the abdomen which had hear retried for three months. been noticed for three months. The lumbar spine presented a well-marked lateral curvature with its concavity to the left, and the left half of the abdomen was occupied by a large elastic tumour passing back into the loin. Although the nature of the case was evidently obscure, it was regarded as probably one of tuberculous disease affecting the left side of the bodies of the lumbar vertebræ and thus causing a lateral rather than the ordinary angular curvature. In accordance with this view the swellings in the abdomen and loin were regarded as chronic abscesses. An exploratory incision in the loin, exposing cysts containing sebaceous material, revealed the true nature of the case. It being evident that the removal of the tumour was impossible, a large cyst was opened and a drainage-tube inserted. The patient became progressively weaker and died about five months later. A partly cystic, partly solid tumour was found lying behind the left kidney, and intimately adherent to the spinal column. The tumour measured 10 centimetres in diameter and reached as high as the tenth rib. A portion of the tumour, 5 centimetres in vertical measurement, projected into the spinal canal, displacing laterally the extremity of the spinal cord and the cauda equina, but not compressing them. Microscopically, the tumour showed fibrous tissue, fat, myxomatous tissue, smooth muscle, cartilage, bone, skin, and tubular spaces lined with columnar or ciliated epithelium. In parts the structures present closely resembled feetal organs -bronchial tubes, intestine. The cysts contained sebaceous material, with hairs.

SECTION OF SURGERY.

General Spinal Analgesia.

A SPECIAL meeting of the Surgical Section, under the presidency of Mr. RICKMAN J. GODLEE, to which members of the Section of Anæsthetics were invited, was held on the afternoon of Friday, Nov. 19th, to listen to an address upon General Spinal Analgesia by Professor T. Jonnesco of the

University of Bucharest. The chief points of the method introduced by the lecturer are indicated by our description of the demonstration given at the Seamen's Hospital. The address was followed by a number of lantern slides illustrating various operations in progress under spinal analgesia. Trephining, ovariotomy, and removal of the lower jaw were amongst the operations depicted, and a striking slide was one showing a surgeon operating upon his own groin. Professor Jonnesco was warmly thanked for his address and a number of questions were put to him, to which he replied in French, the language in which his address was delivered.

CLINICAL SECTION.

Pneumococoal Colitis.—Primary Hyperplastic Tuberoulosis.— Exhibition of Cases.

A MEETING of this section was held on Nov. 12th, Mr. A. PEARCE GOULD being in the chair.

Dr. W. HALE WHITE, Mr. J. P. LOCKHART MUMMERY, and Dr. H. BRUCE-PORTER contributed a paper on a case of Pneumococcal Colitis with hyperpyrexia and severe hæmorrhage treated by appendicostomy. The authors stated that they had recorded the case because, in the first place, it was, they believed, unusual for a diagnosis of colitis due to pneumococcus to be made during life and confirmed by bacteriological examination; secondly, because it illustrated the difficulties of such a case and the successful treatment of hyperpyrexia by cold sponging—they especially drew attention to the beneficial effect of having run iced water through the colon; and thirdly, the case illustrated the value of appendicostomy as a means of stopping severe bleeding from the colon. Before the patient came under their notice the bowel had been washed out from the anus by intestinal douches without in any way controlling hemorrhage, nor did the same method of applying hazeline and water have any effect during the four days it was tried before doing the appendicostomy. While the patient was in a nursing home she took her food very well, and on several occasions half an ounce of sterilised olive oil was injected under the skin; this was always completely absorbed, and thus the case showed the occasional advantages of that little-used method of feeding.

Mr. W. GIFFORD NASH described a case of Primary Hyperplastic Tuberculosis of the Stomach and Duodenum. He said that tuberculous disease of the stomach was very rare, and of the duodenum almost unknown. Most of the cases reported had been instances of tuberculous ulceration of the stomach, secondary to tuberculous disease elsewhere. of hyperplastic tuberculosis of the stomach had been recorded by Mayo Robson and Beadles. Probably that affection had been mistaken for malignant disease. The case related was that of a woman, aged 33 years, who had suffered from gastric derangement for two and a half years and signs of pyloric obstruction for six months. The stomach was extremely dilated and a tumour was felt at the site of the pylorus. There were no signs of tubercle elsewhere. Operation revealed an elongated hard mass occupying the pyloric end of the stomach and the first part of the duodenum. stomach and omentum were covered with tubercles. Gastrojejunostomy was performed, with great relief of symptoms and improvement of the patient's condition. At intervals of 11 weeks and 14½ weeks after operation the abdomen was opened and drained of ascitic fluid. The patient died five months after the original operation, and no post-mortem examination was obtainable. - Dr. F. PARKES WEBER related a case of carcinoma of the bile-duct in which at the necropsy tuberculous tumours were found to be present.—Dr. H. D. ROLLESTON said that he had seen tumours which had been thought to be tuberculous turn out to be minute malignant growths -Dr. W. CAMAC WILKINSON (Sydney) described how the diagnosis between cancer and tuberculosis could be settled by the use of tuberculin.— Mr. NASH explained that he had come to the conclusion on clinical grounds that the miliary tubercles were tuberculous.

Mr. Pearce Gould described a case in which he had removed from the patient a Vesical Calculus weighing 8 ounces when fresh; the stone had formed with great rapidity in the bladder.

Dr. ROLLESTON and Mr. G. D. H. CARPENTER showed a case of Scleroderma with Sclerodactyly. The patient was a woman, aged 30 years, who was shown at the Clinical Society in 1901 as generalised scleroderma with Raynaud's disease. Symptoms of pain and numbness in the hands and,

to a less extent, in the feet began in 1895. The sclero-derma over the face, arms, and hands had advanced, whilst the feet and legs had recovered. The hands showed considerable ulnar deflexion and were flexed, claw-like, and almost immoveable. Attacks of local syncope and local asphyxia still occurred in the hands. During the last ten years she had had thyroid, iodides, and various vaso-dilators without any relief. She had always received benefit from electrical treatment. As the result of that and of massage and passive movements of the fingers there had been considerable improvement.

Dr. T. D. SAVILL showed a patient, a married woman aged 56 years, as the sequel of a case of Scleroderma of the Extremities (sclerodactylia, acroteric scleroderma of Hutchinson) associated with a previous and family history of angio-neurotic cedema. The patient had had attacks of anglo-neurotic ædema throughout life. The patient's mother and one of her two daughters also suffered from attacks of angio-neurotic ædema throughout life. The patient's attacks of angio-neurotic cedema ceased two and a half years ago, when the hands and feet first began to get hard and stiff. When she was first shown to the section in April last she could walk easily, but now only with the greatest difficulty. The thickening of the skin had extended up the limbs. The joints had become stiffer and more creaky, showing that changes were taking place within the joint structures as well as in the skin around. In spite of careful diet and medicinal and electrical treatment she had become progressively worse. A discussion followed, in which Dr. J. GALLOWAY, Dr. W. P. HERRINGHAM, Dr. ROLLESTON, and Dr. SAVILL took part.

Mr. ARTHUR H. EVANS showed a patient on whom he had performed the operation of excision of the larynx, of part of the pharynx, and upper end of the esophagus for malignant disease (squamous-celled carcinoma) of those structures.

Mr. T. H. OPENSHAW showed three cases. The first was one of Rheumatic Spondylitis with Torticollis. The second was a case of Rheumatic Spondylitis with Torticollis and Atlo-axoid Subluxation. The third was a case of Myopathy, infantile type. In the list of cases it was described as Batten's Frog-child. The patient, a boy aged 7½ years, first came under Mr. Openshaw's care in April last. He had never been able to walk. He could move his arms and legs till the onset of measles at the age of 18 months. After that he could not move his legs. His mental condition was excellent. He could not stand, even with aid. He made no effort to hold himself up. His general muscular condition had improved. He could now sit up unaided by pressure of hands on the floor. He could not stand on his feet, but the leg movements were stronger than on admission to hospital.

SECTION OF ANÆSTHETICS.

Heart Massage in Chloroform Syncope.

A MEETING of this section was held on Nov. 5th, Mr. R. GILL, the President, being in the chair.

Dr. VIVIAN B. ORR read a paper on Heart Massage in Ohloroform Syncope, with a report of a successful case. Dr. Orr said that the history of the evolution of this treatment with the information obtained from experiments on both cold- and warm-blooded animals showed that there was reasonable ground for testing its applicability to man. The inadequacy of the usual methods of restoring life in cases of heart failure under anæsthetics seemed undeniable, while, in the light of both written and verbal evidence, the claims of massage appeared to be clearly established. The different indications, the various possible modes of action, and the technique were discussed. The sub-diaphragmatic route was shown by results to be the preferable method of reaching the heart; 10 successful cases had been reported resulting from this procedure. The most difficult point to decide was the exact moment when this treatment should be applied. The higher nervous centres seemed to be irreparably damaged before the lower centres, and these again before the intrinsic heart vitality, and cases were cited which exhibited a return of both circulation and respiration for some hours, with no return of consciousness and ultimate death. If massage were performed within five minutes of the heart arrest there was a reasonable prospect of a favourable result if efficient lung aeration were maintained. Valuable time was often lost in necessarily

futile injections of stimulants, while the methods of aspiration, simple or electric puncture, electricity, and combined pressure on the lower limbs and injections of Ringer's fluid with adrenalin had not so far proved successful measures in man. The patient in the case recorded was about to be operated upon for gastric trouble when the heart failed. Mr. Charles Stonham opened the abdomen and massaged the heart from below the diaphragm from three to four minutes after the failure. In response to stimulation, the heart beats returned and the patient completely recovered.

Dr. DUDLEY W. BUXTON congratulated Dr. Orr upon his paper and the able résumé he had given of the subject. Dr. Buxton alluded to the various physiological factors which produced heart failure under chloroform and the circumstances which, arising during anæsthesia for a surgical operation, would tend to increase the danger of its occurrence. He pointed out that circulatory failure, although often associated with respiratory difficulties which themselves were adjuvant towards causing heart standstill, was directly the result of chloroform dosage, and its degree varied directly as the strength of the vapour inhaled. He discriminated between the various conditions at work when cardiac failure arose, emphasising the importance of their recognition in order that appropriate treatment should be pursued. The abdominal route without incision into the diaphragm was, he believed, the best one for heart massage, and he contended that that measure should not be unduly delayed if the case were at all appropriate, as the surgical procedure involved did not increase the patient's risk seriously. He pointed out that other subsidiary measures were necessary, but deprecated the use of electrical stimulation of the heart.

Dr. E. H. STARLING mentioned a case of a weakly child, aged 11 months, who required the needling of a cataract. Chloroform was given from a Junker's inhaler and was taken well. When the child was under, the head was slightly raised to adjust the towels, when both the pulse and the breathing ceased. The head was lowered and artificial respiration performed, while ether and strychnine were administered hypodermically and a warm saline solution was injected into the rectum. Fingers were passed up under the ribs and the heart compressed five or six times, when a gasping inspiration was taken, and the heart was heard to beat again, after which gradual recovery took place. He thought it essential that artificial respiration should be continued for some time after the heart recommenced to beat.

MEDICAL SOCIETY OF LONDON.

Treatment of Irigeminal Neuralgia.

A MEETING of this society was held on Nov. 22nd, Dr. SAMUEL WEST being in the chair.

Mr. JONATHAN HUTCHINSON read a paper on the Operative Treatment of Epileptiform Trigeminal Neuralgia. He sum-marised his experience of 31 operations on the Gasserian ganglion for epileptiform neuralgia of the fifth nerve, with especial reference to objections that had been raised against surgical intervention in this disease. First, with regard to the risk or mortality of the operation, he held that it was unfair to quote the early statistics, which undoubtedly gave a high percentage, as being true at the present time. about 20 per cent. of deaths (1896) the mortality had come down, in practical hands, to about 5 per cent. cases adduced not one had ended fatally; all had recovered. As to deformity resulting from the operation, he pointed out that this entirely depended on the method adopted. If a small flap was turned down from the scalp only, if only the necessary amount of bone was removed and the zygoma was not divided, practically no deformity ensued. It was, in fact. sometimes difficult to tell later by appearance on which side the operation had been done. As to the anæsthesia of skin and mucous membrane, this was generally of little con-sequence. The cranial anæsthesia was, however, more serious as the patient was left liable to ulceration from the unnoticed access of any septic dust. If the modification of the operation which Mr. Hutchinson had described was practised—namely, leaving the ophthalmic trunk intact—all danger to the eye was avoided. Out of the 30 cases this modification was carried out successfully in 26. In the other 4, in which the eye and forehead had

been left anæsthetic, some ocular complication had happened in all, but in only one had it proved serious. As regards the objection raised to the operation that it was not a radical or permanent cure, the evidence was steadily accumulating that in nearly all cases no return was to be feared. Mr. Hutchinson's first case dated 12 years ago, and even longer periods of cure had been observed. The operation did not prevent headache or neuralgia occurring on the opposite side of the head, and sometimes curious pains associated with circulatory trouble persisted or came on later. It was a matter of importance to avoid operation in patients obviously neurotic. Neurotic symptoms were as a rule absent in true epileptiform cases. In none of the 30 cases had there been any complication as regards sepsis or severe shock. In fact, recovery was rapid and uneventful. The average age of the patients was 52 years. The great difficulty of the operation arose from hæmorrhage, and in one case the recurrent bleeding from the distal end of the middle meningeal artery had necessitated a second operation, and the pressure of the blood-clot had led to some oculomotor paralysis on that side.

Dr. WILFRED J. HARRIS read a paper on the Treatment of Trigeminal Neuralgia. He said that he would restrict his remarks on treatment, for the most part, to that form of neuralgia of the fifth cranial nerve which was characterised by the definiteness of the pain area, corresponding roughly to the anatomical distribution of one or more branches of the nerve. Further, all neuralgias were definitely excluded in which there was any detectable cause of irritation of the nerve, either central or peripheral. The pain, moreover, almost invariably came on in severe spasms, varying in duration from half a minute to half an hour, and there might be intermissions of many months, or even of years, in which the patient was completely free from pain. With that exception the pain continued year after year, until operation of some kind, or death, brought relief. No cause had yet been fully proved for that terrible disease, though various slight changes in the Gasserian ganglion and in the peripheral nerves had been at times described. The sexes appeared to be about equally affected. Thus, of 265 cases, 144 were men and 121 women. There seemed, however, to be a very definite predilection for the disease to attack the right side, for of those 265 cases 179 were on the right side and 80 on the left side, while 6 cases were bilateral. Thus the right side appeared to suffer more than twice as often as the left side. The character of the pain was sometimes exactly simulated by other forms of trifacial neuralgia, particularly dental neuralgia. True trigeminal neuralgia affecting the first or ophthalmic division of the nerve alone was much less common than of the second or third divisions, and, indeed, he had only met with one such case. Yet supra orbital neura'gia was common enough as a reflex from errors of refraction and other similar causes, and it was especially severe as a post-influenzal neuritis. The diagnosis of the site of the cause of the pain was most important in estimating the probable results of any projected treatment, and it practically came to this: that if the pain was referred along one or more branches of the nerve, and there was no trace of any anæsthesia or analgesia or other signs of trophic impairment, such as muscular wasting or glossy skin, then the site of the cause of the pain was surely peripheral, and careful search must be made for any source of peripheral irritation, such as a carious tooth, an unerupted and impacted wisdom tooth, &c. During the last 12 months he had seen 29 cases of true trigeminal neuralgia or tic douloureux, 24 of which he had treated by injections of 80 per cent. alcohol. Of the remaining five cases, three refused treatment by injection; one, a case of bilateral neuralgia involving both second divisions of the fifth during the last 42 years was sufficiently relieved by butyl chloral hydrate and gelsemium as to render injection treatment unnecessary. The remaining case, a woman, aged 58 years, who had suffered only three months with neuralgia of the right third division, died suddenly from angina and cardiac infarction while butyl chloral was being tried. Of the 24 cases which he had treated by alcohol injection, 20 appeared to be so far completely successful as regards entire disappearance of the pain. Two of the remaining four cases were partial failures. If the needle were pushed in as far as 24 inches when searching for the foramen ovale it was likely to pierce the wall of the pharynx, and if

any alcohol was then injected the patient would recognise it by the smell and by its burning sensation on the back of the tongue. This was of no consequence. It must be distinguished from the sensation of trickling along the lower jaw and tongue that the patient would notice when the foramen ovale was being successfully injected owing to the action of the alcohol upon the lingual and inferior dental portions of the nerve. Well-marked pruritus might be sometimes complained of in the area of nerve-distribution after a successful injection into the nerve trunk. Of his 29 cases of true trigeminal neuralgia, 9 were men and 20 women. 13 cases affected the third division only and 8 cases the second division only, while only 2 appeared to affect all three divisions of the nerve, and in two cases the first and second division and the second and third divisions were affected together, both requiring treatment. 18 of his cases were on the right side, 9 on the left, while in 2 cases the pain was bilateral.

Sir Victor Horsley said that he had removed the Gasserian ganglion in 149 cases in patients of varying ages. He found that the death-rate was 7 per cent., but that really only applied in patients over 50 years, for he had never lost a patient under the age of 50 years. In regard to the deaths, one was from accidental sepsis at University College Hospital, and the others were all cases due to the arteriosclerosis from which these patients suffered. The operation was of course difficult, but this was not insurmountable. He considered that the so-called mortality and the so-called disadvantages of the operation were undoubtedly greatly exaggerated. He had employed the method of injecting alcohol with the view of avoiding the Gasserian operation. The cases in which the best results were obtained from alcohol injections were those which were strictly localised to one division of the nerve. Each case, however, must be dealt with on its own merits, but the general procedure was to recommend injection of alcohol first and afterwards, if necessary, resort to the removal of the Gasserian ganglion. He thought that the disadvantages of the removal of the ganglion were really more a matter of imagination than of clinical fact.

Mr. C. A. BALLANCE said that the dangers of the operation had been gradually getting less and less. He considered that it was the right thing where possible to inject alcohol before resorting to severer measures.

Dr. L. G. GUTHRIE pointed out that the severe condition of trigeminal neuralgia did not threaten life. He did not think it was desirable that operation should be performed on any young subject for trigeminal neuralgia.

Dr. T. Grainger Stewart said that those cases which would benefit by medicinal means would not accept operation. In those cases in which he had tried alcohol injection he had been very successful.

After Mr. HUTCHINSON and Dr. HARRIS had replied the meeting concluded.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.

Empyema Thoracis.

A MEETING of this society was held on Nov. 11th, Dr. E. H Davis being in the chair. The evening was devoted to a discussion on Empyema Thoracis.

Dr. JAMES DRUMMOND opened the discussion with a reference to the disease as seen by the general practitioner. He said that empyema could hardly be regarded as a separate specific disease, but rather as an accident or sequela, arising in the course of, or in consequence of, some other preexisting morbid process. It was with this period, before empyema had declared itself, and while the case was under the observation of the general practitioner, that he had been asked to deal. Once empyema was established, the case was no longer a medical one, and he had no hesitation in saying that the sooner it was dealt with by the surgeon the better. He mentioned only a few of the principal diseases in the course of which empyema might occur. In his experience pneumonia had been the precursor in nearly all the cases of empyema the onset of which he had observed. It might occur in the course of specific fevers, such as enteric fever, scarlet fever, measles, and influenza, but he was not sure that in all such cases a mild

type of pneumonia might not have been present. In fact, in many of the cases referred to pneumonia was undoubtedly present as a complication, and the eventual development of empyema in some of them led him to think that probably some degree of pneumonia was present in all. Next in order of importance in the causation of empyema he placed septic conditions of the lungs and abdominal viseera. Septic infarct, gangrene, and bronchiectasis would naturally lead the medical attendant to look out for empyema as a sequela. In his own experience, before the days of immediate operation for appendicitis, he had seen empyema develop in at least two cases which had gone on to suppuration of the appendix. Tubercle in itself was not often followed by empyema, and, as Dr. T. Beattie had pointed out, when it did occur it was usually a result of some added infection. In quite a number of cases there was no history of a previous illness. The medical man was consulted because a child was not "thriving"; there might be no rise of temperature, no cough, and no dyspnœa or other prominent symptom beyond emaciation, but on examination of the chest dulness over one or both bases might be found, leading to the suspicion that fluid was present, and on aspiration pus might be detected. illustrate the difficulty and uncertainty in the diagnosis of empyema he related a case as follows. He was called to attend a woman who complained of pain and swelling in her right side, accompanied by dyspnœa and cough. examination he found all the symptoms of fluid in the chest at the base of the right lung. He introduced a needle in the fifth or sixth interspace in the axillary line and drew off a syringeful of pus. She was operated on for empyema next day, and a large quantity of pus was withdrawn. Part of a rib was resected and the cavity washed out and drained. After a few days it was discovered that numerous pieces of membrane, clearly the daughter cysts of a hydatid, were present on the dressing, showing that the case was one of suppurating hydatid and not true empyema. The pus had found its way behind the liver and diaphragm and burst into the pleural sac. The case did well after a counter-opening had been made through the abdominal wall and the cavity irrigated with weak iodine solution. He purposely avoided making more than the briefest reference to bacteriology in connexion with the causation of empyema, but in his opinion empyema was a question of bacteriology from beginning to end. Temperature observations, auscultation, and percussion were useful adjuncts to a correct diagnosis, but all of them were fallible. The nearest approach to infallibility was, in his experience, to be found in the prompt and frequent use of the aspirating syringe and microscope. As an early diagnosis in such cases was all-important, he urged the prompt and repeated use of the aspirating needle before the lung had become irretrievably collapsed by pressure, and both surfaces of the pleura had become permanently thickened. With ordinary care as regards sterilising the skin and instruments, he had never seen the slightest bad effect from the use of the needle. If there was not time to sterilise the skin of the patient by means of scrubbing and antiseptic dressings, the site of the puncture should be previously painted over with liniment of iodine. When pus was found in the chest the case should be handed over to the surgeon at once. For the development of empyema there must be some antecedent local or general disease, usually dependent on, or at least associated with, the presence of a microbe, and in the great majority of cases, if not in all, the offender was the pneumococcus. In the course of an attack of pneumonia presumably a certain amount of pleurisy took place, with some degree of effusion of serum or lymph. This fluid instead of being re-absorbed became infected with a specific organism, and the resulting collection of fluid was an empyema. The large majority of cases of pleurisy were due to the presence of tubercle; this condition, however, seldom ended in empyema, so that some other organism must be usually, if not always, the deciding factor in producing empyema.

Professor H. J. HUTCHENS dealt briefly with the bacteria found in the pus of empyemata, and pointed out that in many cases the organisms were well-known inhabitants of the alimentary canal. Dr. S. J. Gee had long ago drawn attention to the fact that in empyemata of children the mesenteric glands were caseous. Professor Hutchens mentioned that in the pus from an empyema recently examined in his laboratory an organism was found which appeared to be

identical with the organism described by Dr. D. W. Carmalt-Jones, which he had found in some cases of bronchial asthma.

Dr. David Drummond said that the primary cause of empyema was pneumonia. It was 22 years ago that he first thought the association of pneumonia and empyema was more than accidental. If the temperature rose after the crisis of pneumonia aspiration should be performed on the tenth day, and without an anæsthetic if the patient would allow this. The needle should be inserted where the dulness was greatest and the vocal fremitus (which never entirely disappeared) was least. For testing the vocal fremitus he always used the single stethoscope. All the signs of simple and purulent effusions were the same. If there was diminished dulness at the end of one week the case was not one of empyema. Tuberculous disease did not follow pneumonia.

Mr. A. E. Morison made a communication on the Surgery of Empyema in Adults. He said that empyema was a more serious condition in adults than in children because it was more frequently complicated by tuberculous infection, by alcoholism, by organic diseases, especially those affecting the kidney, and by glycosuria. The treatment of both ought, in his opinion, to be surgical. It was a simple matter to evacuate the pus by the aspirator and recovery had followed a simple aspiration, but this result was so infrequent that no practical importance could be given to it. The greatest use of the aspirator (including the exploring syringe) was to discover the presence and the position of pus. As a rule the question whether the empyema was general or localised could be determined by ordinary physical signs, but this was not always possible. In localised empyema the aspirator was essential as a guide to operation. If the empyema was general a needle introduced at any part of the dullest area should find pus, but if it was local and small a prolonged search might be unsuccessful. As many of the localised empyemata occurred in the lung fissures and between the lobes the position of these fissures must be borne in mind. On both sides a line drawn from the spine of the second dorsal vertebra downwards and forwards to the junction of the sixth costal cartilage and rib marked the position of the sulcus which separated the upper from the lower lobe. All above and in front of this line was upper lobe, while all below and behind it was lower lobe. On the right side the position of the second fissure was marked by a line extending from the middle of the first to the junction of the fourth costal cartilage with the sternum. Many of the empyemata which emptied through a bronchus were situated between the lobes of the lung and were located with difficulty. When other attempts had failed a successful exploration could occasionally be made by imprisoning the pus. The patient was directed to empty his chest so far as possible by coughing before retiring to bed. A dose of morphia was then administered and further coughing was forbidden. The aspirator was tried in the morning when the cavity was full. Whilst operating on all varieties of localised empyemata it was essential to keep the aspirator needle in position till the pus had been found. When such an empyema had been discovered the proper treatment was to drain it through the most direct route. A second use of the aspirator was to tide over a temporary difficulty. In a case with urgent pressure symptoms or marked displacement of the heart, or complicated by acute bronchitis, aspiration previous to operation was generally a wise measure. The same principle held in cases of double empyema after draining one side. A third use to which the aspirator could be put was suggested by Murphy of Chicago and if his results were confirmed it would then assume the position of greatest importance. After emptying the chest he injected through the needle a glycerine-formalin solution, and his published results were very remarkable. Mr. Morison said that he had no personal knowledge of this treatment. In adults the danger of general anæsthesia was greater than it was in children because of the condition previously mentioned. Local anæsthesia by infiltration into the skin and muscles was safe and with few exceptions satisfactory if the directions as to the operation he described were followed. With local anæsthesia it was most convenient to allow the patient to sit astride a chair with his arms resting on the back of it. If a general anæsthetic was needed his preference was for chloroform till the patient was insensible, then "open ether" till the finish. The anæsthesia should always be light. The patient should lie on the back and on no account should he be turned on to the sound side. The opening should be made in the axilla between the fifth and eighth ribs. With the patient drawn to the side of the table so that his diseased side projected over the edge Mr. Morison performed the following operation. First the aspirator was introduced, at the sixth interspace by choice. to verify the diagnosis and act as a guide. A vertical incision was made through the skin and soft parts from the intercostal space above to that below the one in which the opening was to be, passing on one side of the needle. A director was then passed along the needle into the pleura and so soon as pus showed in the groove of the director the needle was withdrawn. A closed pair of sinus forceps was next pushed along the groove on the director into the pleura and withdrawn open transversely to the axis of the intercostal space, making a large opening through which a drainage-tube as large as the space would allow was guided along the director into the pleura. It was neither necessary nor advantageous to have the tube longer than two inches; it was best of indiarubber; it should not be perforated where it passed through the chest wall and should always have a safety-pin fixed in its outer end before being introduced. Resection of a rib was sometimes necessarymore often in adults than in children, but quite rarely, he thought, in either, and only in those whose intercostal spaces were exceptionally narrow. Irrigation or other means of cleansing the pleura were not necessary even in feetid empyemata. Many empyemata became chronic because of a superadded infection of the pleura. If the pre-cautions now universally recognised as essential to wound treatment were perfectly carried out from beginning to end chronic empyema would be a rare event. The operation might be satisfactorily accomplished, but much depended upon every dressing, and these could scarcely be too frequently changed during the first 24 hours. It was at this stage that a secondary infection was apt to supervene. The essentials were that every one concerned in the case should have the "antiseptic conscience" and the means for carrying its promptings into effect. These were not obtainable except in a hospital. Even in tuberculous cases a good result might follow proper care. At the end of the fourth day the discharge from an empyema properly drained should be chiefly serous. At the beginning of the third week the tube should be taken out of the pleura, and during this week a director should be passed into the pleura daily to ensure that the outer opening did not close before the one in the pleura. At the end of the fourth week the wound should have healed. If it had not done so, and if there was still a free discharge of pus from the pleura, the case has passed out of the satisfactory stage into the uncertain and serious one of chronic empyema, and the sooner portions of one or many ribs were excised the better. It was well to remember that even after every rib had been excised it was still possible to have a persisting sinus.

Dr. J. S. McCracken dealt with medical points in connexion with empyemata in children and gave statistics from

the Newcastle-on-Tyne Children's Hospital.

Mr. T. G. Ouston spoke upon "Some Surgical Points in Connexion with Empyemata in Children." He said that he did not approve of local anæsthesia for opening empyemata in children owing to the certainty of the child struggling during the operation. Chloroform had given him every satisfaction, but it was not advisable to obtain full surgical ansesthesia; he was convinced that a minimum of ansesthetic was a very important factor. During its induction the patient should lie on the affected side, as a child's chest wall was so compressible that the purulent collection left only one lung available for respiration. The thorax was opened in the eighth interspace, or at any rate well below the angle of the scapula. It was the rule at the Newcastle-on-Tyne Children's Hospital always to resect a portion of rib, as the intercostal spaces in children were too narrow for adequate drainage. The subperiosteal method was always employed. In large and old-standing cases he thought that the periosteum should be removed as well owing to the rapid regeneration of bone. The pleura should be incised with a knife and not punctured with sinus forceps Where the lung was collapsed and its pleura much thickened the prognosis was not good. He had not tried decortication of the lung, but would do so in a suitable case, with an

interval of weeks after the preliminary opening. In cases of non-expansion or only partial expansion of the lung a Wolff's bottle was used for older children and a penny trumpet for younger ones. At the Newcastle-on-Tyne Children's Hospital there had been 100 cases of empyema in seven recent years; of these 67 recovered, 5 were relieved or remained in statu quo, and 18 died.

Mr. JOHN CLAY mentioned the two dangers, early and late, of chloroform, and urged the use of ether as an anæsthetic. He said that the secondary danger, acetone poisoning, was

formerly called septicæmia.

Sir THOMAS OLIVER said that his experience of fœtid empyemata was that they had done quite well. Many years ago his then house physician, Dr. C. M Goyder, elaborated a system of washing out the pleural cavity, but he found mere drainage far more successful. He thought that an atypical pneumonia was often due to the bacillus coli communis—a possibility which was not sufficiently recognised.

Dr. R. S. PEART remarked that no mention had been made of the dull line in the chest, the level of which altered with

the position of the patient.

Mr. A. PARKIN said that he had seen two cases of empyema

associated with malignant disease.

Dr. A. Angus MARTIN mentioned Mr. Rutherford Morison's method of previously making children intoxicated with alcohol so as to minimise the amount of chloroform used for anæsthesia.

Dr. BEATTIE said that he did not think there was any change of level of fluid, as the pleural cavity was like a closed bottle; if, however, the fluids present were of a different specific gravity (e.g., air and serum) the level would then alter with charges of posture.

Mr. G. G. TURNER said that Beck of Chicago had found that by injecting sinuses in various parts of the body with a paste made of 33 parts of bismuth and 67 parts of vaseline even very chronic sinuses could be readily got to heal, and by extending this process to the chest cases of very chronic empyema had been successfully treated. It was essential to use bismuth which was free from arsenic, as some few cases of untoward results had already been recorded.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

Exhibition of Specimens. - History of the Teaching of Midnifery.

A MEETING of this section was held on Nov. 5th, Dr. H. JELLETT, the President of the section, being in the chair.

Dr. E. HASTINGS TWEEDY exhibited a specimen obtained from an ordinary Wertheim's operation in a woman about 24 years of age. There was very considerable ulcerative cancer spreading into the broad ligament. The operation went well until he began to remove the cervical part of the nterus. The cancer then broke away, but he was able to shut off the intestines and the woman did not become infected. An interesting feature in the case was that the ureter was not diseased, although the cancer spread above and below it. He pushed the bladder far down into the vagina, got his finger between the vagina and bladder, and was able to dig the ureter completely out of the cancer. That was three weeks ago. The patient had gone on very well until a week ago, when her temperature went up and a feetid discharge arose. Though she could now hold a certain amount of urine in the bladder, still a quantity passed away, and he considered that he was now dealing with a ureteral fistula .- Sir CHARLES BALL (President of the Academy) said that he had once transplanted the ureter into the bladder, and as far as he knew no leakage occurred and no obvious kidney tumour developed.

Dr. R. D. PUREFOY exhibited a specimen of Pyosalpinx, which had reached a very considerable size in a short time, and had arisen under circumstances which made its origin difficult to account for. The patient had been married several years and was childless. She came under his care for a trifling catarrh of the uterus and recovered, as he believed. She was afterwards attacked with severe he believed. abdominal pains and tenderness, and it was then quite easy on palpation to find a tumour having its origin from some of

the pelvic organs. He waited for six weeks before operating. On opening the abdomen a rounded tumour came into view completely concealing the uterus, to which it was extensively adherent. In separating it, to his great distress the sac ruptured and a quantity of pus escaped, but the patient nevertheless made an uninterrupted recovery. There was no ground for thinking the condition to be due to gonorrheal infection, neither was there any evidence of tuberculous disease, but he considered that the case was one of tuberculous salpingitis as the patient's family history was unfavourable.—Dr. Tweedy said that when a tube burst and pus flowed into the pelvis it was largely a matter of chance if the patient would recover. If the pus was septic he knew of no way to avoid the giving of sepsis. If there was any doubt as to the nature of the pus it would, he thought, be safer to cut away the uterus and the tube at the other side; this would have provided a large hole for free drainage, that hole and the vagina being packed with a large quantity of iodoform gauze.—Mr. A. J. HORNE said that in a similar case he had recently adopted the practice recommended by Dr. Tweedy. The patient did very well up to the fifth day, when she complained of pain in the region of the heart, and rapidly sank in a few hours. - The PRESIDENT of the section said that in his opinion it was hardly possible to say positively that the case was tuberculous. He suggested that it originated as an extra uterine pregnancy, and that a hæmatoma formed in it and suppurated.

The PRESIDENT of the section read an address on the Past and Present History of the Teaching of Midwifery. -Sir CHARLES BALL said the questions raised were of extreme importance. As a member of the General Medical Council he had a good deal to say on the whole question, and the chief difficulty experienced by the Council was that of proper hospital teaching. In Dublin they were singularly fortunate in that respect, but some of the provincial towns and even London-were not so fortunately situated, and the principal opposition to the recommendations had come from the licensing bodies, who did not see their way to get such education for their students. Some persons thought that the recommendations should have gone further than they did; but some of them, it could not be doubted, would lead to better education. Those of the Council who were not gynæcologists and obstetricians were very strong on the point that students should be clinical clerks and surgical dressers before taking up practical midwifery, so that they might obtain a reasonable amount of teaching in the practice of antiseptics. The General Medical Council could only make suggestions; but their experience was that while some of the recommendations were unpopular at first they were usually carried out. It had never been necessary for the Council to exercise its power to report the non-adoption of recommendations to the Privy Council, an action which might lead to the degrees of the particular body not being registered. He believed that the recommendations would in time be carried out and strengthened, but they had to move slowly. Dr. F. W. KIDD said that he agreed with Dr. Jellett that a period of six months was one which allowed the student to obtain the necessary knowledge with greater ease than if it was reduced to three months. He thought an alternative might be made with regard to the period spent as an intern in attending a lying-in hospital. A man living inside the walls of a maternity institution saw everything that was going on; he lived in an obstetric atmosphere. If attending as an extern student two nights in the week, whether he saw a case or not, it was difficult for him to devote his attention to lectures next morning. He thought that too little attention was paid to the taking of ample notes of cases either in the house or extern, and it should be the duty of assistant masters or clinical clerks to see that notes were taken and signed by the officer of the institution before credit was allowed for the case. When the question of the clinical examination had first come under his observation he had hesitated as to the feasibility of its being made practical or practicable; but experience had shown him that the difficulties which he had conjured up were to a great extent imaginary. A practical test was quite feasible as regards palpation and the general conditions in the puerperium, and questions could be asked to supplement the history that the student gave. -Dr. Tweedy said that in his opinion it was a hardship on the student to cut down the course of instruction to three months. But there was one safeguard in the

rules that had lately come into force-namely, the rule that a student had to attend 32 times within three months. That rule made it impossible for a maternity hospital to give a three months' course on a one month's residence. -Dr. M. J. GIBSON expressed the view that the period instead of being reduced should be raised to 12 months. But if a man lived in a hospital for one or two months, he would learn far more than from attending twice a week for half a year, and should be spared further attendance.—Dr. Jellett, in reply, said that for the qualified man one month inside a hospital was better than three months outside, but he doubted whether the average student could in the time allowed assimilate what he saw, as he could if the instruction was spread over a longer interval. He was therefore more inclined to agree that the time should be extended to a year. Everyone recognised the practical examination as a great step forward, and the marking should in an entirely new departure be lenient at first.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held in the University on Nov. 11th, Dr. George Wilkinson, the President, being in the chair. - Dr. A. E. Barnes, Dr. Arthur J. Hall, and Dr. H. Leader showed specimens from cases of Hæmorrhage into the Suprarenals. All were bilateral. Dr. Barnes's case showed during life symptoms of intestinal and gastric disturbance. In the stomach there was absence of free hydrochloric acid, but a small amount of lactic acid was present. Connective tissue and undigested muscle fibre were seen in the fæces, as well as a slight excess of fats and soaps. urine contained an excess of glycuronic acid; it also showed a very marked indican reaction, urobilin, and Cammidge's pancreatic reaction. Post mortem there were found atrophy of the gastric mucosa, catarrhal changes in the pancreas, and nodules of lymphomatous tissue in the liver, where the capillaries also contained many lymphocytes. Dr. Hall's case showed during life symptoms of enteric fever, but there was no serum reaction. Dr. Leader's case was a child six days old. Streptococci were found in the kidneys.—Dr. Barnes also showed two large Dissecting Aneurysms of the Thoracic Aorta, which during life had caused acute abdominal symptoms. - The President showed a child with separation of the lateral cartilages of the nose and nasal spines; there was also a slight notch in the centre of the upper lip and between the two halves of the premaxilla. - Dr. Hall and Mr. A. Garrick Wilson showed a man who had had a large hard mass in the abdomen which could be easily palpated and for which a laparotomy was performed. It was thought to be carcinoma of the stomach wall, and as a gastrectomy was impossible, owing to firm adhesions and the presence of numerous enlarged glands in the gastro-hepatic omentum, a posterior gastro-enterostomy was performed. In the course of a few weeks the tumour (which turned out to be inflammatory in nature) entirely disappeared, and the patient's weight increased from 7½ stones to 10 stones 9 pounds.—Dr. A. E. Naish and Mr. Wilson showed a case of cervical rib in a girl. The symptoms were pain in the right shoulder after a long swim and weakness in the right hand and arm. The diagnosis was confirmed by an X ray photograph which also showed a very small cervical rib on the left side. The rib was removed by operation and with the assistance of massage and the constant current the muscles of the hand and arm gradually regained their normal strength.—Other cases and specimens were shown by Mr. W. S. Kerr and Mr. Graham S. Simpson.— Professor Ralph P. Williams read a paper on Open-air Recovery Schools. He reviewed the history of the movement which was first established in Charlottenburg, near Berlin, in 1904, in consequence of an investigation carried out by Dr. Neufert and Dr. Bendix, who showed that of all the children attending elementary schools 7 per cent. were dull and backward, and in half of these their mental condition was due to physical causes such as anæmia, the early stage of pulmonary tuberculosis, bad nutrition, &c. This school, established in the forest, was so successful that the original period of three summer months was extended in the following year to a period from April 1st to Christmas. The Charlottenburg authorities were also about to open a "Forest School" for High School children next year. The parents will pay 80 per cent. and the State will pay 20 per cent. of the ex-penses. Mülhausen in Elsass, Gladbach, Elberfeld, London, ¥ 4

Halifax, Norwich, Bradford, and Sheffield have now established open-air recovery schools. Professor Williams then described the medical and educational arrangements in the Sheffield school. He said that with regard to the selection of children, 50 children suffering from the following physical defects were provided for: Pulmonary tuberculosis, 3; tuberculous glands, 2; anæmia and bad nutrition, 20; oral sepsis, 13; convalescence from acute disease, 2; convalescence after operations, 2; and doubtful cases of pulmonary tuberculosis, 8. The teeth of all the children were examined by Mr. Frank Harrison and the worst cases were operated on. All lessons were taken in the open air except in severe weather, when an old and well-ventilated school building was available. Three good meals were provided and were taken in an open shed facing south. One warm shower bath was provided for each child once a week. The educational work was limited to three and three-quarter hours daily. Each child was provided with a numbered rain cloak, a chair, a blanket, a brush and comb, a tooth-brush, a towel, and a bath towel. Two hours were allowed for rest after the midday meal (90 per cent. of the children slept all the time). The children were weighed every fortnight and the 29 girls and 21 boys increased on an average 2.6 kilogrammes (5; pounds) during the period the school was open—i.e., from June 21st to Oct. 29th, compared with an average of 1.1 kilogramme increase put on by children of the same age attending ordinary elementary schools. The parents contributed towards the expense of feeding the children sums varying from 2s. 6d. to 6d. a week. He hoped that schools of this type would be erected in country districts surrounding all cities, for the recovery and education of ill-nourished children who otherwise would become a burden on their relatives or on the State.

HUNTERIAN SOCIETY.—A meeting of this society was held on Nov. 10th, Mr. T. H. Openshaw, the President, being in the chair. —In the theatre of the London Institution Dr. Alfred C. Jordan gave a lecture on Roentgen Ray Diagnosis for the Physician. The lecture was illustrated by over 80 lantern slides of cases examined by Dr. Jordan. Time being limited, he was obliged to confine himself to diseases of the chest and alimentary canal. Commencing with the heart, the predominant shape of the cardiac shadow in the several varieties of valvular disease was illustrated and explained. Mitral stenosis showed the greatest constancy of form, while that of aortic stenosis was also fairly well defined. In Stokes-Adams disease it was usually easy to count the beats of the auricles and ventricles separately. Pericardial effusion was next dealt with, and the chief points in its diagnosis from a dilated heart were explained. Coming to the aortic arch, it was shown that while there was no difficulty in diagnosing a large saccular aneurysm from an anterior view, in less extreme cases it was always necessary to examine the right anterior oblique view as well, the latter giving a view in the actual plane of the aortic arch. The appearance of the aortic arch in the oblique view, when normal, generally dilated, fusiform, and saccular, was explained by means of diagrams, and a number of illustrative slides were shown. Aneurysm of the innominate artery and descending thoracic aorta was also illustrated. Coming to the lungs, the lecturer dealt first with phthisis, of which disease he had examined close upon a thousand cases during the last three years. He showed that every case with definite physical signs could be detected with certainty by an X ray examination, and the exact extent and distribution of the disease ascertained. Many cases with no physical signs could be similarly detected. The various points of importance in the diagnosis were explained, and the appearance of apical and fibroid phthisis, cavities, bronchitis, emphysema, bronchiectasis, fibrosis, and pneumonia were shown. Fluid effusions in the pleara were next considered, the form when small, moderate, and large being illustrated. The appearance produced by fluid and air in the pleura was shown and contrasted with that of simple effusion. Abscess and hydatid cysts of the lung were shown, and finally the effect produced by new growth in the chest. In examining the gastrointestinal tract from 2 to 4 ounces of carbonate of bismuth might be given without hesitation, in emulsion with sugar of milk and water, or mixed with cornflour or bread and milk. In Germany several patients in whom the subnitrate was used had died owing to liberation of nitrous acid by bacterial action in the bowel. The appearance of strictures of the esophagus was shown, and the lecturer explained how the

bismuth emulsion remained lodged in the dilated portion above the stricture, and a thin stream trickled through and entered the stomach. Esophageal pouches were also shown; in these cases the bismuth emulsion was seen (during the fluorescent screen examination) to pass through the œsophagus in a full stream and to enter the stomach, but a portion remained lodged in the pouch at the upper end. Referring to the stomach, it was shown that the shape of the normal stomach as revealed by a bismuth meal, was not constant, but depended upon the other abdominal viscera which pressed closely upon it, and the amount and weight of the gastric contents. The appearance of the normal antrum pylori in the presence of peristaltic action was explained by means of a diagram, and tracings and photographs were shown illustrating pyloric carcinoma, hour-glass constriction due to new growth, and other conditions. The course of the bismuth meal through the intestines was then followed, and instances of obstruction in the ileum and sigmoid, and dropping of the hepatic flexure and transverse colon were shown upon the screen. The splenic flexure never dropped, being held up by the costo-colic ligament. If a patient with a dropped transverse colon were asked to contract the abdominal muscles the transverse colon was seen to rise to its normal level in some cases. In these cases exercises, massage, &c., might be of benefit by strengthening the abdominal muscles and increasing their tone. rise of the colon (and stomach, which was usually dropped also) was produced by the patient "drawing in the stomach" manual pressure with the flat hand upon the abdomen below the umbilicus often caused the stomach and colon to rise to their normal levels; in such cases a well-fitting belt might be of benefit. Lastly, a case of congenital dilatation of the colon in a baby was shown. The greatly dilated colon was full of gas and showed as a clear, wide band against the rest of the abdomen, which was darker.

PATHOLOGICAL SOCIETY OF MANCHESTER. meeting of this society was held on Nov. 10th, Dr. W. E. Fothergill, the President, being in the chair.—Dr. George R. Murray and Professor J. Lorrain Smith gave an account of a case of Acute Disseminated Cerebro-spinal Myelitis (Encephalo-myelitis). The patient, who was a woman, aged 18 years, complained of failure of vision in the right eye, which became blind in four days. Vision then failed in the left eye, so that she was blind in a week. Then followed loss of power of the left side of the face and of the right arm and leg. On the eleventh day she became deaf. On admission to the Manchester Royal Infirmary she was blind and deaf; her pupils were dilated; there was only slight reaction to light on the right side, the fundus was normal; paresis of the left side of the face and of the right arm and leg was present; the knee-jerks were exaggerated, especially on the right side; anale clonus and Babinski reflex were present on both sides, but more marked on the right; there was apparently no anæsthesia. By lumbar puncture fluid was obtained in excess, but it was normal in character. The temperature was generally subnormal. The patient subsequently lost control of the sphincters and died from respiratory failure a month after the onset of the symptoms. Sections of the spinal cord and brain, stained by Weigert's myelin method, showed irregular areas of myelitis. In the cord in the cervical region the anterior and lateral columns and in the lumbar region the lateral and posterior columns were chiefly affected. The fibres had to a large extent disappeared, and in the more recently affected areas large numbers of compound granular corpuscies were found scattered through the tissue and crowding the spaces of the perivascular sheath. The vessels were engorged but the walls were not thickened and there were no definite signs of thrombosis. An examination for microbes by Gram's method gave negative results. In the optic chiasma and in both auditory nerves recent myelitis was found, and in both cases the fibres had completely disappeared. There was an increase in the neuroglia cells in these areas. Sections from the white matter of the occipital lobe were also shown to demonstrate a myelitic focus. changes in the brain were not so advanced as those in the cord and in the optic chiasma. In the brain the areas affected were visible to the naked eye as small rounded patches of congestion without definite softening.—Professor G. Elliot Smith, in a communication entitled "Disease in Ancient Egypt," gave an account of some of the pathological conditions which he had met with in examining the bodies of

ancient Egyptians. Reference was made to the extreme rarity of tuberculous disease, only 5 cases having been found among more than 10,000 skeletons examined; 4 were cases of spinal caries and 1 of hip disease; the earliest was dated about 3500 B.C. No evidence whatsoever of syphilis has yet been found. Osteo-arthritis was extremely common, but only one case of true gout had been observed and that was a Christian immigrant into Egypt. Dental caries was exceedingly rare among the prehistoric Egyptians, but was quite common among the aristocratic classes in historic times. Cases of mastoid disease (12 in number) were seen, in all of which the pus found a natural outlet in Macewan's triangle. A variety of other conditions, including osteo-sarcoma (3000 B.C.), calculi of the bladder, of the kidney, and of the gall-bladder, talipes, and prolapse of the uterus and rectum, were referred to. - Dr. E. N. Cunliffe described the clinical history and pathological appearances met with in a case of Anzemia with Enlargement of the Spleen occurring in a girl, aged 13 years, and presenting the features, not of splenic anæmia of adults, as is customary at this age, but of splenic anæmia of infancy. A marked feature of the blood picture was the enormous number of nucleated red cells, chiefly of the normoblast type, with a certain proportion of megaloblasts. There were no signs of infantilism such as has been recorded by Cowan in two cases of a similar nature.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of this society was held on Nov. 11th, Mr. T. H. Bickerton being in the chair. - The following specimens were shown: Mr. W. Thelwall Thomas and Dr. W. W. Mackarell: (1) Epithelial Odontome; (2) Exophthalmic Goitre; and (3) Three Epitheliomata from One Lip. Dr. E. Stevenson and Dr. R. E. Harcourt: (1) Melanotic Sarcoma of the Eye (two cases); and (2) Pseudo-glioma of the Eye.—Mr. Charles G. Lee and Dr. Harcourt: (1) Melanotic Sarcoma; and (2) Glioma of the Retina.—Dr. Gordon Gullan: Hour-glass Contraction of the Stomach.—Mr. R. E. Kelly and Dr. Mackarell: Skull and Brain from a case of Pneumococcal Meningitis. - Dr. Ernest E. Glynn: Phagocytosis of Pneumococcus in Cerebro-spinal Fluid.—Mr. Thomas Guthrie: (1) Naso-pharyngeal Fibroma; and (2) Tracheal Tuberculosis. Dr. Nathan Raw: (1) Malignant Streptococcal Endocarditis; (2) Primary Carcinoma of Adrenals; (3) Congenital Cystic Kidneys from a man, aged 44 years; and (4) Tuberculous Appendix.—Dr. J. Lloyd Roberts: Thoracic Aneurysm with Rupture into the Superior Vena Cava.—The specimens were discussed by Dr. T. R. Bradshaw, Dr. N. P. Marsh, Dr. J. Murray Bligh, Dr. J. Hay, Dr. Glynn, Dr. J. H. Abram, and Dr. Harcourt.—Dr. R. J. M. Buchanan read a short paper on Observations on Cytological Methods. He held that as in the body as a whole somatic or systemic death took place the same term is applicable to the death of the cell as a whole, and that systemic cell death takes place prior to disintegration. Recognising the occurrence of death of the individual in instantaneous rigor or cadaveric spasm, he held that cells could die in instantaneous rigor, that this condition is produced and preserved permanently by the most approved methods of instantaneously fixing tissues during life, and that by this means cells could be fixed during any phase of their existence and the appearances coincident with their latest activities permanently recorded. He drew distinctions between cells which were allowed to die slowly prior to fixation. He pointed out the possible fallacies which might arise by the examination of cells in vitro being regarded as equivalent to examination in vivo, and pointed out the danger of the tendency to regard these terms as synonymous in experimental methods. The paper was illustrated by microscopical specimens showing cells fixed and preserved in instantaneous rigor.—The paper was discussed by Dr. G. C. E. Simpson, Dr. Harcourt, Dr. Glynn, and Dr. Abram, and Dr. Buchanan replied.

EDINBURGH OBSTETRICAL SOCIETY.—A meeting of this society was held on Nov. 10th, Professor William Stephenson (Aberdeen), the President, being in the chair.—The President read his valedictory address and gave an account of the lives of some of the honorary and other Fellows who had passed away during his occupancy of the chair, including Dr. C. J. Cullingworth, Dr. C. E. Underhill, and Dr. P. A. Young.—Dr. H. M. Church read a paper on Rheumatoid Arthritis, claiming a puerperal cause for most cases. He gave a clinical record of two cases which he had

studied for 12 years. In one the disease came on after a confinement at the full time, in the other after a miscarriage at the second month. In both the system had been weakened by influenza and shock, which predisposed to a microbic invasion from the genital tract. He pointed out the relation that exists between rheumatoid arthritis and other chronic spinal arthropathies, and conducted his inquiries on the lines recently initiated by the Cambridge Committee appointed for the study of special diseases. Gout, osteomalacia, and rheumatoid arthritis were compared. In regard to treatment, iron taken internally and cataphoresis with iodide of potassium did good. In rheumatoid arthritis a generous diet with butcher's meat was essential and whatever treatment enriched the corpuscular elements of the blood. The retention of phosphorus in the system and therefrom the production of greater hardening of the bones after removal of the ovaries, as shown from experiments upon animals, opened up far-reaching questions. As regards post-mortem appearances, he referred to a case in which 18 months after the onset of rheumatoid arthritis, following a miscarriage, there was found sclerosis of the posterior columns of the cord in the dorsal and of the columns of Goll in the cervical region. The paper was preceded by the exhibition of a metal penholder eaten through by the sweat from the finger of one of Dr. Church's rheumatoid cases, and he thought that the presence of a hypothetic acid, which the American physicians, Dr. Herder and Dr. Baldwin, believe to be pathogenic of the disease (found in the urine in every acute case) might be a factor in the erosion of the metal.—The following officebearers were elected for the ensuing session:-President: Dr. F. W. N. Haultain. Vice-Presidents (Senior): Dr. A. H. Freeland Barbour and (Junior) Dr. J. Lamond Lackie.

Treasurer: Dr. W. Craig. Secretaries: Dr. Angus
Macdonald and Dr. B. P. Watson. Librarian: Dr.
Lamond Lackie. Editor of Transactions: Dr. W. Macrae Taylor. Members of Council: Dr. J. W. Ballantyne, Dr. W. H. Miller, Dr. A. M. Easterbrook, Dr. W. E. Frost, Professor W. Stephenson (Aberdeen), Dr. G. F. Barbour Simpson, Dr. Frederick Porter, and Dr. F. D. Simpson.

Brighton and Sussex Medico-Chirurgical Society.-A meeting of this society was held on Nov. 4th, when Sir Malcolm Morris delivered an address entitled "Certain Important Methods of Treatment about which there is considerable Doubt." He selected the following three points for discussion—vaccines in the treatment of skin diseases, the use and abuse of X rays, and the practical use of radium. As a type of skin disease for which vaccines might be used he mentioned simple local infections of the skin by streptococci or staphylococci, such as sycosis, impetigo contagiosa, acne, boils, and carbuncles. Acne depended on many factors—the anatomical, the coarse rough skin with large sebaceous glands; the physiological, the disease starting at puberty, when many changes take place in the body; the pathological, the altered skin, with reflex disturbance of digestion. Now, he asked, are all other factors except the vaccine to be omitted? No, most certainly all knowledge, past and present, is not to be thrown away. If pustulation is present in a limited area no vaccine should be used. It is only in those cases in which ordinary commonsense treatment fails or is impossible on account of the extent or depth of the lesion, that vaccine from the pus of the patient's own lesions is undoubtedly of value; and the same applied to the various other coccal infections to which he had referred. With regard to X ray treatment of skin diseases there was at the present moment a wave of reaction following on the ' But the proper level of its value would soon be "boom." found. In chronic ringworm of the scalp this treatment meant a cure with absolute mathematical certainty within three months. There was not the slightest shadow of risk with a skilled operator. No single case of injury to the brain has been brought forward and the risk of permanent baldness was so small that it could be ignored. The success of the treatment resulted in an enormous saving in money and time. There were medical officers scattered about who had set their face against it, but they were absolutely wrong in denying the public this enormous advantage. Sir Malcolm Morris also recommended the X rays for old-standing thickened patches of psoriasis, eczema, lichen planus hypertrophicus, pruritus ani, excessive hyperidrosis, chronic sycosis, and breaking-down rodent ulcer or epithelioma. As regards

radium, one broad general rule must be remembered, he said, the action of radium was totally different on skin and on mucous membrane. There was no danger with radium on the outside surface. It produced three effects—a superficial action, a deep action, and a selective action. It was to be used for (a) superficial inflammatory conditions of the skin which defied all known treatment; (b) for port wine nævi; and (o) inoperable epithelioma. Its action on mucous membrane was very different; he did not advise it for advanced cancer of the mouth or tongue, but he would use it if the cancer was quite small and there was no general infection.

CLINICAL SOCIETY OF BATH.—A meeting of this society was held on Nov. 5th, Dr. J. Wigmore being in the chair. - Dr. Rupert Waterhouse showed a case of Rheumatoid Arthritis in a child, aged three years, in whom great benefit had resulted from the administration of large doses (up to three drachms daily) of the syrup of iodide of iron.-Mr. Forbes Fraser showed: (1) a girl, aged 11 years, in the early stage of Macrocheilia and Macroglossia; and (2) microscopical sections from a Sebaceous Adenoma manifesting early malignant degeneration.—Mr. T. McPherson showed a boy, aged 10 years, with a Tumour of the Chest Wall of doubtful nature.—Dr. J. Leckie showed a boy who had four months previously been run over by a bicycle and rendered unconscious for some hours. Recovery took place, but he had returned to hospital with headache and double optic neuritis. -Dr. James Lindsay showed a woman, aged 36 years, with Chronic Disease of the Joints which had started in the great toe-joint at the age of 14 years; the teeth were much ground down and there was persistent albuminuria with granular casts. -Other cases and specimens were shown by Dr. Preston King, Mr. H. G. Terry, and Mr. F. Lace. - Dr. G. H.-H. Almond read a paper on Polycythæmia, which he divided into relative and absolute, subdividing the latter into (1) erythrocytosis, and (2) erythremia. He said that polycythemia resulted from deficient aeration due to chronic lung disease and congenital heart disease. Notes were read describing the case of a youth, aged 19 years, whose blood count showed red cells varying from 9,400,000 to 11,900,000 per cubic millimetre; the amount of hæmoglobin was 145 per cent. and the spleen was enlarged. There was marked clubbing of the fingers, and other symptoms and signs of venous stasis had been present There was increased dulness to the right since birth. of the sternum, and Dr. Almond thought the case was probably one of erythrocytosis due to congenital heart disease.—Dr. J. M. H. Munro read a paper on Various Points in Vaccine Therapy, suggesting from cases observed that pustular acne of the face in young women, without blackheads, the back and chest being clear, might be connected with staphylococcal infection of the blood from accompanying cervical endometritis. He reported a case of so-called carbuncle of the nose due to micrococcus catarrhalis successfully treated by two inoculations of auto-vaccine, and drew attention to the value of tuberculin in certain cases of malignant endocarditis and in persistent chronic nasal catarrh, one case being greatly improved after seven years' previous treatment, including removal of the turbinated bones and draining the frontal and sphenoidal sinuses and maxillary antra ineffectually.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.meeting of this society was held on Nov. 17th.—Dr. C. H. Cattle showed a case of Aphasia with Monoplegic Chorioid Movement.—Dr. A. Fulton, the President, then delivered a presidential address on Medical Ethics. He pointed out that the modern tendency of the Government to create numerous State and municipal medical appointments was becoming dangerous to the profession as a whole, as in many cases the remuneration was quite inadequate and these appointments unduly encroached on the work of the general practitioner. To guard against these dangers we should be united as a whole and first heal our own differences. He then described those "petty jealousies" arising between general practitioners themselves, between general practi-tioners and members of a hospital staff, and finally between general practitioners and the numerous types of consultants which have lately arisen; at the same time he pointed out the proper etiquette to be observed in each case, believing that if only the members of the profession would get to know each other better these differences would soon disappear. An interesting discussion followed.

Reviews and Notices of Books.

Text-book of Embryology. By FREDERICK R. BAILEY, A.M., M.D., Adjunct Professor of Histology and Embryology; and ADAM M. MILLER, A.M., Instructor in Histology and Embryology, College of Physicians and Surgeons (Medical Department of Columbia University). With 515 figures. London: J. and A. Churchill. 1909. Pp. 672. Price 21s. net.

It is a fact that many valuable modern text-books are the work, not of mature senior men who could utilise a life-time of first-hand observation for the enterprise, but of comparatively young men in the first flush of their professional life. The explanation in a subject like embryology is not far to seek. The subject has broadened out so rapidly, and its literature has become so immense in recent years, that it is practically impossible for any individual to possess a first-hand knowledge of all its departments. Enthusiasm, industry, and the assured, unhesitating judgment of youth are needed to systematise in a dogmatic form some of the many-sided and ill-understood facts of modern embryology. young authors of the work under review, taking their courage in their hands, have produced what may truthfully be described as the best text-book of embryology in the English language. It is not stamped with the mark of individual authority like the well-known work of Professor Minot of Harvard, but, on the other hand, it is a most judicious and well-balanced representation of the facts and opinions relating to the development of the body. The authors have shown great judgment in their selection of authorities and of illustrations, and have carried their account up to the most recent researches.

Owing to the predominating influence of Professor Minot of Harvard, and more especially of Professor Mall of Johns Hopkins University, embryology has flourished in the Universities and medical schools of the United States. The methods used in the laboratories and the courses given in the lecture room are copied from Germany. In the preparation of this work the authors have followed closely the German tradition. The first chapter deals with the cell; then follow sections dealing with the genital cells, their maturation, fertilisation, and the production of the embryo. The succeeding chapters treat of the origin and growth of the separate organs and parts. It is a mechanical embryology that is here unfolded, one in which buds grow out, septa spring up, lamina fold over and unite, with seldom a question as to the functional meaning or significance of the phenomena so minutely described. As is the German method, embryology here consists of a detailed catalogue of bare facts unrelieved by the light that can be obtained from the study of comparative anatomy and physiclogy, and scarcely yet affected by the brighter light which experiment is destined to shed on the phenomena of development. The long chapter dealing with the nervous system, where the authors have mainly relied on the researches of His, Elliot Smith, and Streeter, is an exception to this statement, and in that chapter they have greatly added to the value of their description by interpreting facts of development in the light of the facts of cerebral evolution.

Several new features distinguish this text-book. One is a list of "practical suggestions" at the end of each chapter, suggestions as to the manner in which the facts of each chapter may be verified by the student. A list of the most recent papers is given in each section. The differentiation of the various tissues is also dealt with more fully than is usual. On the other hand, although the various malformations of the body are mentioned with the normal development of each system of organs, it is clear that neither of the authors

has first-hand knowledge of these lesions. An appendix giving a clear and reliable account of the technique employed by embryologists is a most valuable feature.

When we examine the size and compass of this work—and it contains only the essentials of the subject—the opinion is forced upon us that embryology, at present a foster-child of medicine, will soon find itself in the position of other sciences that have grown up as foster-children of medicine—botany, zoology, and chemistry—too big to find room enough for development. To work through the "practical suggestions" of this work would take a medical student at least 12 months of constant labour.

The Medieval Hospitals of England. By ROTHA MARY CLAY.

London: Methuen and Co. Pp. 357. Price 7s. 6d. net.

This volume is one of the excellent series known as the Antiquary's Books, published by Messrs. Methuen, and it is worthy in every way of its predecessors. We are quite in accordance with the remark of the Bishop of Bristol, who has written the preface to the book, when he says, "As a book of reference for readers and writers, this treatise on the medieval hospitals of England ought to hold a distinguished place."

The word "hospital" has come to mean in these later days a place practically entirely devoted to the care and treatment of the sick in body. But in early and mediæval times a hospital was, in accordance with its name, a guest house for wayfarers, pilgrims, the poor, the sick, and the infirm. In Oxford were two hospitals which had been founded for the care of the sick as well as for poor and infirm persons. One was the Hospital of St. Bartholomew, founded by Henry I., and the other that of St. John Baptist, founded possibly by King John, but more likely by Henry III. in 1233. The foundation charter is dated 1231. St. Bartholomew's was for "leprous folk," but St. John's was founded that therein "infirm people and strangers might receive remedy of their health and necessity." But the statutes of the hospital lay down very clearly that certain classes of sick folk were not to be admitted. The officer to whom was given the care of the infirmary was the sacrist. He was obviously a priest, for the statutes say that he shall hear the confession of patients before their admission. But he is forbidden to admit the following: "Si fuerint adulti: non admittant (sio) leprosos, paraliticos, ydropicos, furiosos, morbo caduco laborantes, fistulas aut morbos incurabiles patientes nec mulieres lacrimas (sio, but possibly a mistake for 'lascivas') praegnantes nec juvenculas." These rules, it will be seen, excluded a large number of diseases, for the lepers probably included many chronic skin diseases, and possibly syphilis. The paralytics would include a variety of spinal diseases and the hydropics many cases of morbus cordis, of nephritis, of hepatic disease, and very likely solid or cystic abdominal tumours. Cases of epilepsy, fistula, and chronic incurable disorders were also ruled out. The statutes go on to say that such cases were rather to receive an adequate portion of outdoor relief, until such time as they were well. The first patient of whom there is any definite record as admitted to the hospital of St. Bartholomew in London was a carpenter named Alfunyne or Adwyne of Dunwich. He suffered from a general contraction of his limbs, and having heard of various cures wrought at the church and hospital, he came up by sea and was put "in the hospitall of pore men." Here he gradually recovered, power returning first to his hands so that he was able to make "smale workys such as dystaffes" until he became so well that later on he was able to do heavy work, such as hewing wood and squaring timber, together with carpentry work for the church. It will be seen that there is here no definite mention of any surgical or medical treatment.

Miss Clay treats of the various hospitals according to the purpose for which they were founded, as far as possible, for naturally the work of many hospitals overlapped. Thus her first three chapters deal with hospitals for the wayfarer and the sick, for the feeble and destitute, and for the insane. Lazar houses and lepers are dealt with in the next two chapters, and the remaining chapters discuss founders and benefactors, hospital inmates, buildings, management and constitution, their relations to Church and State, and their decline. Finally comes a chapter about the dissolution of religious houses and its effect upon hospitals. The decline of hospitals was due to various causes. Incompetent and dishonest wardens played their part in mediæval times just as they did after the Dissolution or in hospitals founded in post-Reformation times, while as regards leper hospitals, even as early as 1321 a report got about that the lepers had in England, even as their brethren in transmarine parts, "poisoned the fountains of sweet gliding streams" so that "they were utterly hated and their hospitals were for the most part brought to great decay."

Certain hospitals which had fallen from their first estate were merged in other institutions. Thus the Hospital of St. John Baptist above referred to had in the time of William of Waynflete (circa 1456) fallen so low that "it consisted only of a master and four brethren." Its property was ill-managed, its revenues were not spent in relief of the poor, and its rules and statutes were not observed. 1 Its lands and property were therefore annexed to Waynflete's new foundation of Magdalen College, the master and brethren receiving due compensation. Between 1481-5 the hospitals of Romney, Aynho, and Brackley were also annexed to Magdalen College. At the Dissolution, although the Commons proposed that those who entered into the possession of the lands of religious houses should provide for the poor as of old, it only too often happened that as Roderyk Mors remarked in his Complaint, "Your pretense of putting down abbeys was to amend that was amisse in them. It is amended even as the devell amended his dame's legge (as it is in the prouerbe) whan he shulde have set it ryght. he bracke it quyte in peces." The second portion of Miss Clay's book gives an account of hospital patron saints and contains two most valuable appendices, the one being a translation of the office for the exclusion of a leper and the other a tabulated list of hospitals.

We have read the book with extreme interest and can only add our congratulations to those of the Bishop of Bristol upon a careful and excellent piece of work. The value of the book is greatly increased by the illustrations of hospital buildings, seals, and the like.

Probleme der Tuberkulosefrage. Von Dr. JULIUS BARTEL, Privat-dozent und Assistent am pathologisch-anatomischen Universitätsinstitut in Wien. Leipzig und Wien: Franz Deuticke. 1909. Pp. 147. Price M.3.50.

THIS small but important volume is an account of the bearings and significance of the researches on the problem of tuberculosis, which has been carried out during the last few years in Weichselbaum's Institute in Vienna, where Dr. Bartel is principal assistant. The papers on the subject reach a high standard of excellence and deal with certain aspects of tuberculosis which have been too much neglected by the extremists of the contagionist school. The main problems set by Weichselbaum are the relationships of the tuberculosis virus to the organs and tissues of the body, the early changes following the entry of the virus, and the anatomical basis for the doctrine of disposition with reference to the localisation and extent of the tuberculous lesions.

¹ Wilson: History of Magdalen College.

This comprehensive programme has been dealt with in nearly fifty researches, in nearly all of which Dr. Bartel's name appears as one of the authors, mostly in association with Neumann, Hartel, Spieler, and Stein. Almost all these researches have appeared in the Wiener Medizinische Woohenschrift. The general drift and the results of the work have been given by Weichselbaum in his admirable report, "Ueber die Infektionswege der Menschliche Tuberkulose" at the Sixth International Tuberculosis Conference held in Vienna in September, 1907; also by Dr. Bartel in his paper "Leitsätze zur Frage der Tuberkuloseentstehung" the same Congress, and "Zur Frage der Infektionswege der Tuberkulose" at the International Tuberculosis Congress at Washington in 1908. The present book is an expansion of these reports brought fully up to date. Small cheap books of this kind are features of German publishing as compared with English, and they are all the more welcome as they to a certain extent conserve time which is spent in reading through long articles in which even an expert is apt to lose his bearings in the mass of details. Were works like this more frequent there would be much less re-discovery of well-ascertained facts and medical literature would be the less bulky. Even to the specialist a work like this is of importance as it gives the clue to the development of a special line of work by a group of workers, when the particular place in which the full details are can be consulted.

Dr. Bartel's work has aroused much discussion, one point in particular requiring some comment-viz., the doctrine of a pretuberculous or lymphoid stage in the disease. As is well known, the most diverse interpretations are placed upon the lesions of tuberculosis both as to origin and development. There are those who hold that the infection is mainly aerogenic and others who hold it is mainly enterogenic. Having passed an epithelial membrane which is apparently intact, the virus can locate itself in the regional lymphatic glands and give rise to manifest tuberculosis. The Vienna school, however, assert that the virus may locate itself in the regional glands and remain latent for a long period, while no manifest histologically recognisable tuberculosis can be demonstrated. Higher up in the lymph system tuberculous lesions may, however, be apparent and easily determined. If this be so, no accurate deductions can be drawn from ordinary necropsy material as to the path of entry in a given case of tuberculosis, and the extraordinary differences of opinion of even the most expert morbid anatomists support this statement. Apart from evident tuberculosis, there is or may be, according to Dr. Bartel, a pretuberculous or lymphoid stage in which both the histological evidences of tubercle and even the bacillus cannot be seen. Nevertheless inoculation of such lymphoid material develops tuberculosis in animals. This lymphoid stage, which is characterised at most by lymphoid hyperplasia and swelling of the glands, may remain quiescent-latent-for as long as 104 days in experiments. There must be in this hypothesis something in the lymphoid tissue which prevents the bacillus from manifesting its full pathogenic activity. Indeed, considerable evidence is gradually being accumulated on the importance of a histo-immunity as opposed to a humoral-

A large part of Dr. Bartel's work is taken up with the foundations of the disposition to tuberculosis, which is apparently to be sought in the varying resistance of the lymphatic tissues throughout the body. The practical importance of all this work is great, as it may be the means of turning the therapeutics of tuberculosis into new channels which will give a greater chance of success than has been obtained in the past, and for this reason we can recommend the study of Dr. Bartel's small but highly suggestive book.

LIBRARY TABLE.

The Health Resorts of Europe. By THOMAS LINN, M.D. London: Reynold's-Ball's Guides. 1909. Pp. 285. Price 2s. 6d. net.—The fact that this little book has reached its seventeenth edition is a proof that many persons find it useful. It is clearly written, and for its size contains a mass of information. The countries dealt with are Austria-Hungary, Bosnia, Belgium, France, Germany, Great Britain and Ireland, Holland, Italy, Portugal, Spain, and Switzerland. No mention is made of the fairly well-known thermal springs at Piatigorsk in southern Russia some 90 miles N.N.W. of Vladikavkas. Dr. Linn sounds an excellent note of warning in his introductory hints when he impresses upon would-be visitors to a health resort to consult their medical man before going, and not to "take counsel of some kind friend who may have been benefited by taking such and such waters." In a future edition we think that some fuller account might be given of the Bath waters. Except that their temperature is 120° F. and that they contain radium nothing whatever is said about them. But taking it all round Dr. Linn's work is well done.

The Children's Story of Westminster Abbey. By G. E. TROUTBECK. London: Mills and Boon, Limited. Pp. 253. Price 5s. net.—This unpretending little book will make a very good Christmas present for a child or even for an adult. In the words of the preface, its object is "to point out to British children how they may follow the great outlines of their country's history in Westminster Abbey." On p. 4, in speaking of the estates of the ancient Abbey, Mr. Troutbeck mentions Covent Garden and Hyde Park. He might have said that, roughly speaking, the whole of the present S.W. postal district belonged to the Abbey. We doubt if 1 per cent. of the visitors to the Abbey know that there was one Bishop of Westminster. Mr. Troutbeck mentions him at p. 18, but does not give his name. He was appointed by Henry VIII., after that masterful monarch had dissolved the monastery. His name was Thomas Thirlby, and he held the see from 1540 to 1550, when he was translated to Norwich, though Mr. Troutbeck says that he resigned. Among scientific men buried or commemorated in the Abbey Mr. Troutbeck mentions Newton, Darwin, Stephenson, Adams, Joule, Stokes, and others, but he omits John Hunter, whose remains were translated from St. Martin's-in-the-Fields owing to the pious care of Frank Buckland in 1859.

JOURNALS AND MAGAZINES.

The Quarterly Journal of Medicine. Edited by WILLIAM OSLER, J. ROSE BRADFORD, A. E. GARROD, R. HUTCHISON, H. D. ROLLESTON, and W. HALE WHITE. Vol. III., No. 9. October, 1909. Oxford: At the Clarendon Press. Subscription price, 25s. per annum; single numbers, 8s. 6d. each. The contents of this number are: 1. A paper on Leukansemia, by Charles H. Melland, in which a case is recorded and the suggestion is made that if the name of leukanæmia is to be retained it should be more widely applied so as to include all those atypical cases in which there is a leukæmialike condition without any, or with very slight, increase in the number of leucocytes. An interesting discussion of the hæmatological relations of this condition is given, together with a useful bibliography. 2. A Contribution to the Study of Rheumatism, with Notes on the After-history of 25 Cases of Scarlatinal Rheumatism, by F. J. Poynton. Some of the problems in connexion with this disease are discussed and special reference is made to the relation between rheumatism and the arthritis occurring in scarlet fever. Dr. Poynton believes that scarlatinal rheumatism is in many cases true rheumatism. He finds that heart disease is a common event in childhood after scarlatinal rheumatism. 3. On Lymphocytosis of the Cerebro-spinal Fluid in Relation to Tabes, by Judson S. Bury and Albert Ramsbottom. They conclude that lymphocytosis of the cerebro-spinal fluid is not, as has been asserted, a constant phenomenon in tabes and general paralysis, and that although syphilis may play an important part in the production of these diseases it is not an essential factor. 4. On Polycystic Disease of the Kidneys, by Carey Coombs. A case is recorded of polycystic disease in an unpaired kidney, and an analysis of 44 cases is given which shows that in half of them the symptoms of the last phase were those of uramia. 5. An Investigation into the Histological Condition of the Suprarenal Glands in Conditions Associated with High Blood Pressure, by Austin Philpot. He finds that the medulla of the gland is the region involved, no changes being found in the cortex. The medulla was found to be enlarged in nearly every case, and there was a definite increase in the chromaffin substance. In exhausting diseases, on the contrary, the glands were small, the medulla was very narrow, and only traces of the chromaffin substance were present. 6. On the Diuresis of Chill, by Alexander G. Gibson. The diuresis is found to be far too large to be accounted for entirely by diminution of skin loss; it attains its height during exposure, when the cold is severe and prolonged, but is delayed if the cold is not intense or if the exposure is short. 7. Toxic Arthritis, by J. Campbell McClure. This paper contains a study of two types of arthritis-viz., that which occurs after the injection of antitoxic serums and that after scarlet fever. Dr. McClure suggests that the hypothesis put forward by J. R. Currie to account for serum disease—that it is due to the action of some antigen combining with its antibody to produce a poison, and that in those suffering there is an abnormally quick response, so that the amount of poison produced is beyond the immediate eliminative capacity of the individual-may be applied to these two forms of arthritis-8. Some Observations on the Administration of T.R. Tuberculin in Pulmonary Tuberculosis, by David Lawson and H. S. Gettings. They conclude that their observations support the claim made by Latham and his co-workers that tuber. culin administered by the mouth in cases of tuberculosis is absorbed and modifies the blood content, but they do not think that their observations warrant the conclusion that the temperature is a safe and trustworthy guide as to the behaviour of tuberculin in the body. 9. Some further remarks on Leukæmic and Chloromatous Affections by C. H. Treadgold. Four recently recorded cases of chloroma are analysed and are regarded as supporting the views that the bone marrow is primarily affected in chloroma, and that the condition is closely allied to leukæmia. An interesting discussion of the etiology and pathology of the leukæmias is given, and a plea is urged for simplification of nomenclature. 10. The Estimation and Quantitative Significance of Hydrochloric Acid in the Gastric Contents: a Critical Review, by W. H. Willcox. In this important paper the literature of the subject and the various methods of investigation are carefully analysed. Dr. Willcox lays great stress upon the value of determining the "active" hydrochloric acid of the gastric juice-which includes the acid combined with proteins and organic bases as well as the free hydrochloric acid. 11. The Minutes of the Proceedings of the Annual General Meeting of the Association of Physicians of Great Britain and Ireland, held at Dublin.

Journal of Anatomy and Physiology. Conducted by Sir WILLIAM TURNER, K.C.B., ALEXANDER MACALISTER (Cambridge), ARTHUR THOMSON (Oxford), ARTHUR KEITH (London), and ARTHUR ROBINSON (Edinburgh). Vol. XLIV. Third Series. Vol. V., Part I. October, 1909. London: Charles Griffin. Annual subscription, £1 1s. post free.—This number

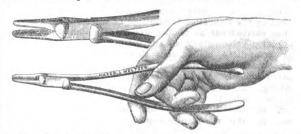
opens with an appreciation of the talent exhibited by the late Professor D. J. Cunningham, and a warm tribute of praise for the valuable assistance afforded by him to the Journal of Anatomy. The scientific contents of this number consist of ten articles, which being usually expressed with clearness and brevity scarcely admit of being abstracted. Their titles are: 1. The Nature and Causes of the Descent of the Testes, by D. Berry Hart, M.D. 2. The Physiological Descent of the Ovaries, by D. Berry Hart, M.D., in each of which memoirs some corrections of the ordinarily accepted description are introduced. 3. The Anatomy of the Palatine Tonsils, by G. Seccombe Hart, F.R.C.S., and H. G. Butterfield, B.A. 4. Obliteration of the Left Common, External, and Internal Iliac Arteries, by A. M. Paterson, M.D. 5. A Cyclopæan Fœtus with Hernia Encephali, by F. W. Watkyn-Thomas, B.A. 6. Abnormal Phalanges in a Human Hand: a case of Brachydactyly, by Walter Kidd, M.D. 7. Congenital Deficiency of a Portion of the Thoracic Skeleton, by T. H. C. Benians and H. Emlyn Jones. 8. A Case of Os Parietale Bipartitum in an Australian Aboriginal Skull, by Richard J. A. Berry, M.B., F.R.S. Edin. 9. Further Observations on the Ossification of the Human Lower Jaw, by Alexander Low, M.A., M.B. 10. Nineteenth Report on Recent Teratological Literature (1908), by William Wright, M.B., D.Sc. In addition, there are some Anatomical Notes and a Report of the Proceedings of the Anatomical Society of Great Britain and Ireland.

Hew Inbentions.

A SIMPLE FORM OF NEEDLE-HOLDER.

THE variety of needle-holders already illustrated in surgical instrument catalogues almost leads one to think that each surgeon needs a special form to suit his individual requirements. Believing, as I do, that anything which favours greater simplicity and uniformity in our operative methods is an advantage induces me to bring under the notice of your readers a description of a simple form of needle-holder which has for several years given me perfect satisfaction and is free from many of the objections unavoidably present in more complicated instruments. Many surgeons avoid the use of any holder where possible, and this has been my invariable custom. For superficial wounds a needle, if straight and of sufficient length, can be used more rapidly and efficiently without any holder, and I usually employ an ordinary straight sewing-needle and thimble for intestinal work, which in most cases can be done outside the abdominal wound. There are, however, many situations in which, owing to inaccessibility or the variety of needle employed, the use of a holder becomes imperative, and it is most satisfactory to have ready to hand an instrument that can be used in a facile and effective manner.

The requirements of a good needle-holder are many: (1) It should be simple in construction; and (2) consequently



easily cleaned; (3) it should be able to grasp an ordinary needle of any form in almost any position without permitting it to rotate and without danger of fracturing it (fracture of a fully curved needle is easily produced by pressing it tigbtly in a holder possessing jaws with grasping surfaces so formed that their approximation tends to straighten the needle); (4) the instrument should be one that can be readily manipulated; and (5) noiseless in action, as

the clicking sound which accompanies the locking and unlocking of many needle-holders is highly irritating to the feelings of a patient who is not under the influence of a general anæsthetic. My needle-holder fulfils the above conditions. Its form and the method of holding it are well shown in the accompanying illustrations. In general appearance it resembles Martin's needle-holder. are, however, much narrower and more pointed. The surface of the lower blade has a broad and shallow grove, while the surface of the upper blade is flat and leaded. This form of construction makes it impossible for the operator to fracture a curved needle even when severe pressure is used in holding it. If the instrument is held in the manner shown in the illustration the ease with which a needle can be released and again seized will be a pleasure to the operator.

The instrument is manufactured by Messrs. Mayer and

Meltzer of London.

C. YELVERTON PEARSON, M.D. R.U.I., F.R.C S. Eng., Professor of Surgery, University College, Cork.

FIRST AID DRESSING "ASEPTO."

The particular merit claimed for this invention, which is to be obtained from Mr. John Voet, 2, Coleman-street, London, E.C., is the facility with which it enables a person, without any assistance or delay, and under most unfavourable circumstances, with dirty and unsterilised hands, to apply an aseptic dressing to his own wounds or to those of others. The dressings consist of compressed pads folded up in an ingenious manner in small and compact packets. Each packet contains one such square aseptic pad attached to two long bandages and so folded that by undoing the bandages the pad can be placed wherever needed and easily tied without any necessity for the person who applies it to touch the inside of the pad with his hands. This method of folding secures the inside of the pad against all contamination and renders it free from any infection whilst the wound is being dressed.

The double packets, which are wrapped in canvas and paper, contain two dressings, to provide against wounds such as bullet or knife wounds, which require the application of a dressing at the points of entry and exit. Yet each packet remains separate, and this makes it possible to use one dress-

ing at a time without opening the other.

The dressing is made so that a wounded person who has only one hand available can easily unfasten it—e.g., with his teeth—tear off the paper wrapping and place the aseptic pad upon the wound. We have examined these dressings in several sizes and can endorse the inventor's claims that they can be applied almost instantaneously with no risk of contamination of the dressing surface. The length of the bandages allows of their ends to be used as a sling if desired. We consider the "asepto" dressing to be a valuable equipment for the soldier in the field. We understand that these dressings, though invented in Holland, are now made in England.

THE AFTER-HISTORY OF LONDON SCHOOL CHILDREN.

The London County Council considered on Nov. 23rd a report by the Education Committee of an important inquiry it has carried out as to the extent to which the scholars at London's elementary schools drift into unskilled labour. The committee claims that this is the first attempt to collect statistics relating to the occupation of children on leaving school. At any rate, its figures are sufficiently striking. Returns made by the head teachers of several hundred schools showed that in 1907-08 33·2 per cent. of the boys who left the elementary schools went to skilled employment, 61 per cent. joined the ranks of unskilled labour, and 5·8 per cent. continued their education at secondary schools. (This last figure takes no account of boys who passed on to secondary schools before reaching the highest standard.) The destination of the girls leaving school was: skilled employment, 58·1 per cent.; unskilled, 34·1 per cent.; higher education, 7·8 per cent. The latter figure, by the way, appears to indicate a tendency no longer to restrict the benefits of an extended education to the boys of the family, as used to be

the case. With regard to the larger proportion of girls who are returned as having obtained skilled employment, the committee mentions that there was considerable divergence of opinion amongst those making the returns as to what was to be considered "skilled" labour in the case of girls. Those who took up domestic service, for instance, were classified as skilled or unskilled according as they went to good positions or were merely employed as "day girls." Another consideration which detracts from the conclusiveness of the statistics is that in many cases frequent changes of employment have been noticed to take place during the first year after leaving school, the children subsequently settling down into some regular, and even skilled, calling. However, after all allowances have been made, the returns show, as the committee points out, that little more than a third of the children on leaving the elementary schools enter a form of occupation which by any stretch of imagination can be called "skilled." The remainder drift into unskilled trades, where they speedily lose the greater part of the mental and moral training instilled at school at such an infinity of time, trouble, This in spite of the fact that London with and expense. over half a million employees in factories and workshops is perhaps the greatest industrial community in the world, and the London child, if efficient, has the best possible opportunity of entering a skilled trade and taking precedence over the new-comers from the country and abroad who eventually constitute one-third of London's population.

A considerable factor in bringing about the state of affairs revealed by the committee's investigations is the unfortunate lack of interest shown by parents of the poorer class in the future of their children. It is a common practice for the children, with only the limited experience of 14 years to guide them, to select their own occupations, and to find for themselves their first situations. They are too young to choose wisely, and they shift from place to place until they discover something that suits their taste and ability. The committee suggested that to render education of more value to the scholars and to equip them to take better positions when they leave school, the age of attendance should be extended to 15 years, and that until the age of 18 is reached attendance at half-time classes should be required. The classes should be attended during working hours, for the experience of many years has shown that evening continuation schools cannot adequately meet the need. The long hours of work and the great distances travelled to and from the place of employment often render attendance impossible, and even where this is possible the boy or girl, after the day's physical exertion, is not always in a fit state to profit by the instruction given. The difficulty of inducing employers to release their employees for attendance at classes is so great that the committee has no hope of the practice becoming general unless Parliament makes it compulsory. The committee would apply a "half-time" system also to the youth of 18, who, after four years of unskilled labour, has lost the intelligence and aptitude of the boy and is on the way to become a clumsy and unintelligent man, fitted for nothing but unskilled labour and likely to become sooner or later one of the unemployed. In the case of girls it is suggested that instruction in domestic subjects should form part of the curriculum at the "half-time school.

In another part of the report (which deals exhaustively with the subject and is to be placed on sale) an account is given of the trade schools which already exist on a small scale in London, and also of the work of the Apprenticeship and Skilled Employment Association, 36-7, Denison House, Vauxhall Bridge-road, which has been largely instrumental in securing the establishment of local apprenticeship committees in 16 districts of London.

The Finance Committee, dealing with the financial aspects of the proposals, estimated the annual cost at approximately £100,000, and expressed the view that unless additional Exchequer grants are made the present is not the time to put forward such drastic and far-reaching proposals.

UNIVERSITY OF LIVERPOOL: ANNUAL DINNER OF LIVERPOOL MEDICAL STUDENTS.—The Liverpool medical students will hold their annual dinner at the Adelphi Hotel, Liverpool, on Saturday, Dec. 11th, at 7.30 P.M. Dr. J. Hill Abram will occupy the chair and Mr. R. Craig Dun the vice-chair.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 27, 1909.

Schools and Infectious Diseases.

An exceedingly useful official memorandum has been issued conjointly by Dr. A. NEWSHOLME, the chief medical officer of the Local Government Board, and Dr. G. NEWMAN, the chief medical officer of the Board of Education-a memorandum which points out, among other things, the way to avoid friction between the district medical officer of health and the school medical officer "when they are not the same officer." The Board of Education might perhaps have been expected to say "when the two offices are not held by the same person," but we have no desire to be hyper. critical, and the words of our old friend the bookseller leave no doubt as to the meaning which they are intended to convey. They are introductory to a careful analysis of the conditions under which the closure of a school, or the temporary exclusion of some of the pupils, may be rendered necessary by the existence of contagious disease, and to recommendations concerning joint action between the sanitary and the educational authorities of the locality concerned. It is pointed out that if the sanitary authority of the district in which the school is situate, or any two members thereof, acting on the advice of the medical officer of health, require either the closure of the school or any department thereof, or the exclusion of certain children for a specified time, with a view to preventing the spread of disease or any danger to health likely to arise from the condition of the school, such requirement must at once be complied with, and the compliance will not involve any forfeiture of the grant; while the school medical officer possesses an equal power of saving the grant in the case of any closure on account of disease by managers acting under his advice or with his approval, although the medical officer of health should not have interwened. There are thus two independent powers, each of which may cause the closure (partial or complete) of a school without loss to the managers; and the memorandum is the expression of the desire of the two central authorities concerned, the Local Government Board and the Board of Education, that the relations between the local sanitary authority and the local education authority should in all respects be intimate and cordial, in order that the administrative procedures of the two bodies may be reciprocally beneficial. It is only, we are informed and can well believe, by such mutual cooperation that the best interests of each district can be secured to the fullest extent.

The memorandum then enters into details with regard to all the principal elements of the questions which the several medical officers "when they are not the same officer" will be called upon to consider and to deal with by united by the representatives of the community. That it is hard

action, and it describes in some detail the chief conditions. and the most important illnesses, by which either the closure of a school or the exclusion of certain children can be required or justified. On all the points thus dealt with its directions are so precise, and so manifestly in harmony with the requirements of the public safety, as to leave very little room for differences of opinion as to the course which should be pursued; and as the duty of the medical officer of health is primarily to secure the safety of the public, while that of the school medical officer is primarily to secure the welfare of the scholars, it is evident that the former will usually be the person who is called upon to take the initiative in the case of any outbreak of disease calling for active interference. The success of his efforts to combat such an outbreak will, at the same time, as far as the action of schools is concerned, be largely dependent upon the goodwill and the cordial assistance of teachers and school authorities; and it is manifest that their attitude in relation to the matter is likely to be much influenced by that of their own medical officer, and by the extent of his approval of the course taken or recommended by his colleague. It is therefore a judicious procedure, on the part of the central authorities, to describe as accurately as possible the conditions which are likely to arise and the action which they will severally require, and in this way to render it difficult for the officials concerned to adopt any other line of action than that which the memorandum prescribes. The course to be generally pursued in respect of each one of the diseases ordinarily epidemic or ordinarily incident largely upon children of school age is explicitly laid down; and except, it may be, with regard to the facts of occurring illness, scarcely any opportunity is left for the display of want of harmony between the officers respectively concerned. It seems hard to dispute that the ideal conditions for efficiency would be those in which these two officers were "the same officer," and in which the several non-medical local authorities were completely shielded against the embarrassment which any conflict of opinion between their respective advisers could hardly fail to produce; but this of course is exactly the point upon which there is a difference of opinion in the medical profession. The memorandum before us evidently takes the view that where possible the two officers should be "the same officer."

We fear, indeed, as a matter of fact, that there is sometimes a considerable tendency on the part of local authorities to seek to neutralise the efforts of their medical advisers by the promotion of something like rivalry between them. The average member of a rural or an urban district council may still regard scientific knowledge with a curious mingling of feeling. He knows it means expenditure against which, as far as he does not understand the reasons, he will continue to strive; but he has apprehensions that, after all, "there may be something in it," and that his opposition to its dictates may produce disaster. He cannot understand the anxiety of medical men to prevent disease; and, as many men can only realise the motives by which they are themselves actuated, he sometimes regards this anxiety as arising from self-interest and therefore to be resisted by the representatives of the community. That it is hard

to explain where the self-interest comes in is a difficulty which in no way shakes conviction of its exist-That the two medical officers should be "the same officer" would often appear to a popular representative of this sort as a condition fraught with peril, if not to the State, yet certainly to the ratepayers, and in his determination to avoid so ill-omened a conjunction he is not unlikely to be strongly in favour of conferring the two appointments upon gentlemen who are suspected of a certain degree of rivalry or of antagonism. There can be no doubt of the absolute necessity for unanimity of action among those of the medical profession who are serving the State in public capacities, or of the importance of the profession protecting itself, by the maintenance of cordial relations between its official members, from the designs of those who would weaken its corporate action by the aid of differences between individuals. That such differences must here and there exist is perhaps unavoidable, but there are regions of activity into which they should never be permitted to intrude. The closure of a school in consequence of an epidemic is an event which has often excited a good deal of strong feeling in the locality concerned; and it is therefore one as to which the medical chiefs of the sanitary and of the education departments are fully justified in calling upon their subordinate officials for unanimity, and in pointing out the lines of action by which this unanimity may most effectually be secured.

The Healer as Prophet.

It is said that a medical autocrat who exercised a professional tyranny over the polite world some hundred years ago once told a young lady whom he had pronounced to be "in a consumption" that she had but two years to live. Being of a contrary nature, however, and having good powers of resistance, on the day when she should have been snug in her coffin the prophet of evil met her out walking and in a positively robust state of health, and as she had not consulted him for some time she hastened to accost him. The physician promptly affected not to see her, and thereafter he passed her always without a sign of recognition, since from his professional point of view she had expired with the period of his prognosis. Absurd as the story is, it serves to emphasise a habit of "cook-sureness" in settling some of the most difficult and delicate questions conceivable that seems to have been not uncommon amongst our professional grandfathers, especially those in the consultant ranks. Possibly some of our readers are acquainted with people who at some time of their lives have been "given so many years to live." Certainly many of those doomed ones are now doing a useful share of the world's work, and in such cases nobody but the stultified prophet has been the worse for his hasty utterance. Most physicians engaged in insurance work have heard of such dicta, but usually in reference to family history, and we are glad to think that medical men are now far more chary in hazarding a measure of their patients' days. Not only has the medical profession realised the appalling responsibility of a hopeless

prognosis, for in no matter is experience more fallacious and judgment more difficult, but it has also come to learn that the counsel of the physician should be one of encouragement rather than of despair, and that, however desperate be a patient's condition, and however importunate he be to know the worst, nothing but harm can result by presenting a full tale of terror to an imagination which in many cases is only too expectant of evil tidings.

In a few special instances, it is true, circumstances may point to the expediency of appraising a patient's expectation of life at his own request, but the power of suggestion over certain physical processes cannot be denied, and in the great majority of cases the formal declaration by one in whom a sick man has confidence as a wise and expert adviser that whatever be done to relieve his urgent distress his days can be numbered with a fatal certainty may have a disastrous effect. There is evidence from the annals of witchcraft that a healthy person believing himself to be persecuted by an occult and evil influence can sicken and even die under a purely psychic oppression; indeed, in our own day the practice of the rites of Obeah in our West Indian colonies has been made a penal offence, because there is no doubtwhatever that the gravest physical consequences have happened to ignorant negroes who believe that they have " had Obi put on them" by a witch-doctor at the instigation of an enemy. This, of course, is an extreme case, but we quote it as showing the ill that can accrue from the force of an authoritative suggestion, and we believe that a medical death-sentence may shorten a sick and anxious man's remaining life. Certainly the physician who pronounces it takes a heavy responsibility upon himself. Even if a man may not arrive at recovery it is surely better that he should continue to journey hopefully towards his end. The question then arises, "Is a medical man ever justified in sitting asjudge and recorder of his patient's days?" We think the justification can be present but rarely. In almost every instance where it is necessary that such warning should be given it can be given to the friends of the sick person, and the medical attendant may very properly discuss with them the advisability of telling the patient of his serious condition. As we have said, an occasional case must arise in which a man whohas been found to be suffering from a mortal malady demands to know the whole truth and gives such reasons for it that the request cannot be refused, painful though it be to reply, but we appeal to common experience that such cases are rare in the extreme. To warn a man that he must be carefulin his exercise or his diet because he has an affection of his heart or kidneys that demands his earnest cooperation in its treatment differs widely from telling him that obedience gives him his only chance of life. If he proceeds to disregard the warning systematically it may become necessary to utter the graver words, but even in such a case the wise practitioner will not attempt to prophesy the length of remaining life. Or it may be the surgeon's duty to tell a woman that she has a growth that will be ultimately fatal if it is not removed, but it is neither expedient nor useful for him toguess how long her pathological condition will allow her

The Schorstein Lecture on "Syphilis and Aneurysm."

THE choice of the Regius Professor of Medicine in the University of Oxford to deliver the Schorstein lecture at the London Hospital was felicitous, and would certainly have been grateful to him in whose memory the lecture was instituted, for the late Dr. Schorstein's devotion to his old university was well known. After a sympathetic reference to his career and its tragic and untimely close, Professor OSLER gave his lecture on the subject of "Syphilis and Aneurysm." The time is ripe for a careful and critical investigation of the part played by syphilis in the production of arterial disease and especially in the genesis of aneurysm, for the discovery by SCHAUDINN of the spirochæte of syphilis, which Professor OSLER acclaims as one of three achievements of the first rank already effected in the twentieth century, and also the recent developments in regard to serological investigations of syphilis by WASSER-MANN have rendered it possible to attack the problem fundamentally. Professor OSLER, in an historical summary, first showed clearly how the acute and almost prophetic insight of some of the great master-minds of the past arrived at the truth, or an approximation to it, in connecting aneurysm with syphilis. Thus Ambroise Paré mentions the association but hints that the mercurial treatment is the cause, while FERNELIUS, MORGAGNI, and LANCISI also definitely described aneurysm as a sequel of syphilis. In spite of these early observations, the connexion between syphilis and aneurysm appears to have been lost sight of until the latter part of the last century, when the general attention directed to the manifestations of visceral syphilis, in which British investigators played no inconsiderable part, once again brought up the question of the relation of syphilis to disease of the blood-vessels. In this connexion Professor OSLER paid a well-deserved tribute to the medical officers of the British army, who, he maintained, first forced the recognition of the part played by syphilis in aneurysm. He referred in some detail to a paper published in 1875 by Colonel Francis H. Welch, then assistant professor of pathology at Netley, which he described as the most important communication on the subject in English. Colonel Welch proved in it the frequency of the association and further recognised macroscopically the form of aortitis now regarded as pathognomonic of syphilis. Previously to this, in 1863, Sir Samuel Wilks recognised the importance of syphilis in arterial disease, and described the characteristic syphilitic arteritis of the cerebral vessels, while Sir CLIFFORD ALLBUTT in 1868 studied the histological changes in these vessels. Professor OSLER also referred to the work on the same subjects by French and German workers and by the Dublin school, including that of TAFNELL. During the past 30 years the numerous researches upon the lesions of the aorta and their relation to syphilis have established the existence of a form of acrtitis found in association with syphilis, which forms the basis of a large proportion of the cases of aneurysm. This form has been described by most recent workers as a mesaortitis. Thus in a paper by Dr. C. U. AITCHISON, published in the second volume of the Archives of the Pathological Institute of the London

Hospital, atheroma is differentiated as a degenerative process characterised by proliferation and subsequent necrosis in the intima and by degeneration in the media, while mesaortitis is described as inflammatory and characterised by round cell infiltration of the adventitia and media with destruction of the muscular and elastic elements. Morbid anatomy and histology could carry investigation but little, if any, further, and it is only in virtue of the new methods rendered possible by the discovery of the spirochete of syphilis and by the serum reactions that the relationship has been proved conclusively. Already numerous observers, including SCHMORL, REUTER, BENDA, and KLOTZ, have described spirochætes in the lesions of the aorta, and Dr. J. H. WRIGHT of Massachusetts has found them in five cases of aortitis, one being associated with aneurysm. The Wassermann reaction has also now been extensively applied in cases of aortic disease and aneurysm, and a positive reaction obtained in no inconsiderable proportion.

It is of interest to notice the special features of the syphilitic aortitis or mesaortitis which forms the basis for the development of aneurysm. Professor OSLER revealed these with characteristic succinctness. Macroscopically the process may be very localised, involving only an inch of the aorta, usually the first part of the arch, and implicating the valves, but it may occur about the origin of the great vessels or in the descending aorta just above the diaphragm. The typical appearance has been described as cicatricial or fibrous aortitis and is characterised by scarring or puckering with narrow linear furrows or little pits with radiating stellate lines. There is also translucency in places due to localised atrophy, giving a bluish tint to some of the depressions. The yellow raised nodules and calcified flakes found in atheroma may be entirely absent, although these lesions may be combined with those of the syphilitic mesaortitis. Microscopically there is necrosis with fragmentation of the elastic fibres of the media, while a cell infiltration separates the elastic and muscular fibres, and extends between the lamellæ in lines, sometimes forming large foci of roundcelled infiltration containing giant cells and areas of necrosis. Miliary gummata may also be found, and the adventitia shows areas of cell infiltration, especially about the vasa vasorum, while many of the smaller vessels show obliterative endarteritis. The changes in the intima are atrophic in places, at others they are those of compensatory thickening. The presence of spirochætes may also be demonstrated. Professor OSLER then discussed the processes by which an aneurysm may develop on the basis of a mesaortitis, whether due to syphilis or to any other infective agency. He described three modes of origin—first, by acute necrosis and erosion; secondly, by splitting of the intima over the weak spot, either spontaneously or as the result of strain or effort; and thirdly, by weakening of the aortic wall, followed by a gradual dilatation. Some interesting statistical considerations relating to aneurysm were given and discussed. Professor OSLER pointed out that about 1 in 459 deaths are returned in England and Wales as due to aneurysm, and that apparently the incidence of aneurysm varies greatly in different countries. He also quoted some interesting figures in regard to the percentage

of cases of aneurysm from which a history of syphilis can be obtained. In 31 cases of aortic aneurysm seen in private in 3 no mention was made of syphilis, while in 10 it was denied, and in 18-i.e., 58 per cent.—there was a positive history. Among 248 cases at the Johns Hopkins Hospital there were 204 cases of aneurysm of the thoracic aorta. Of the total cases there was a well-marked syphilitic history in 40.9 per cent., while the percentage in the thoracic cases was 40.6. In regard to the clinical features of the aneurysms consequent upon syphilitic disease of the arteries, sudden death from perforation of an unsuspected aneurysm is, of course, by no These are, said Professor OSLER, means infrequent. the aneurysms of the third and fourth decades of life, and they often present a triad of features-viz., angina pectoris, aortic insufficiency, and aneurysm, angina pectoris being often the first symptom. The beneficial effects of iodide of potassium, which are noteworthy in the syphilitic form of aneurysm, he held to be especially useful in the varieties presenting this triad of features.

In an eloquent peroration Professor OSLER asked what could be done to restrain the ravages of syphilis, which at a low estimate he maintained to be responsible for 6000 or 7000 deaths annually in this country, without taking into account the unestimated but very large number of stillbirths undoubtedly due to it. He urged in cogent language, first, the wholesome education of youth in matters sexual; secondly, the adoption of measures such as a special police force of men and women to clear the streets and places of public amusement of the open importunities and opportunities for vice; thirdly, that venereal diseases should be put in the same category as other acute infections dangerous to the public health, and each case known should be registered and supervised, though he admitted that such a course might seem visionary and impossible now; lastly, he advocated the increase of facilities for early and prolonged treatment, expressing the hope that the new methods of investigation may lead to forms of treatment which will cut short the disease at its very onset. The occasion of a lecture such as the Schorstein memorial affords an excellent opportunity for some critical observer to call a momentary halt, and as it were report progress on some special point of general interest. Professor OSLER fulfilled this function in a manner wholly admirable, and his lecture was at once an interesting résumé of the present state of our knowledge and an incentive to further efforts in prophylaxis and treatment along the lines which he so eloquently suggested.

THE PREVENTION OF TUBERCULOSIS.—The Tottenham urban district council, on the application of Dr. J. F. Butler-Hogan, its medical officer of health, has granted the free use of the council chamber on Wednesday, Dec. 15th, for the purpose of a lecture on the Prevention of Consumption by Dr. R. W. Philip of the Royal Victoria Consumption Hospital, Edinburgh. As the seating accommodation is limited, early application should be made to the medical officer of health, Town Hall, Tottenham, by medical officers and others wishing to be present on the occasion.

Annotations.

"Ne quid nimis."

THE STANDARDISATION OF DISINFECTANTS.

WE conclude this week the report of our Commissioners upon the standardisation of disinfectants, and from the summary and conclusions which appear in another column our readers will see that a very interesting position has been reached by their work. A method of chemical analysis has been devised which is believed to render a very fair statement of the composition of the disinfectant preparations of the tar or phenolic class which are commonly sold to the public. A bacteriological method has been carefully worked out which gives a truer estimate of the germicidal power of the disinfectant than has hitherto been the case. The chemical and bacteriological results were obtained quite independently and in different laboratories, and when they were brought together certain relationships between them began to appear. Bacteriological figures assigned an order of merit for the various disinfectant preparations examined, and these figures were found to coincide closely with figures founded on chemical considerations. The two sets of figures showed a remarkable parallel. It seems probable that a satisfactory chemical account of a given disinfectant will afford an accurate indication of its germicidal power, but, of course, chemical analysis cannot do more than suggest how far the germicidal agent present is effective under the conditions in which it has to act. As a matter of fact, bacteriological tests, as at present performed, yield figures which convey no real idea of the germicidal power of the agent when it is applied for the purposes of practical disinfection. The figures give merely a comparison, bounded by narrow conditions, between the germicidal power of carbolic acid and that of the disinfectant under consideration, whilst little or nothing is known as to what this germicidal power of carbolic acid amounts to when applied to disinfection under the common conditions of practice. It is conceivable that a consideration of this fact offers some explanation of the remarkable analogy between bacteriological and chemical factors. The bacteriological and chemical activities of an agent appear to be identical powers, and thus under what may be called the ideal conditions of experiment the bacteriological numbers prove to be chemical numbers, and just as the chemical activity of a substance is depreciated by foreign matters so is its germicidal activity reduced. The value for bleaching purposes, to give an analogy, of a solution of chlorine in distilled water may be such that it will effectually bleach a yard of calico, but if the same quantity of chlorine is dissolved in, say, muddy river water, or water polluted with organic matters, its bleaching power may be so reduced as to leave the yard of calico only partly bleached, if bleached at all. The conditions are similar in the practice of disinfection. The question of practical disinfection, in short, is not so easy of solution as is the question of germicidal activity. The work of our Commissioners further indicates lines along which future research must go. Taking into consideration the weakening influence of the environment of every-day disinfecting conditions, they have never been able to find, even under the ideal conditions of bacteriological experiment, such high coefficient figures as have been given to certain disinfectants by other observers, and they are forced to the opinion that many disinfectants have had claimed for them a value, when compared with carbolic acid, which is by no means justified.

SPINAL ANÆSTHESIA BY STOVAINE AND STRYCHNINE.

DURING the visit to London of M. Jonnesco, Dean of the Faculty of Medicine in the University of Bukharest, members of the profession have had an opportunity of observing the latest development of spinal anæsthesia in the hands of its originator. On Friday last, Nov. 19th, M. Jonnesco delivered a lecture before the Surgical and Anæsthetics Sections of the Royal Society of Medicine, in which he dealt with many features of his subject, and we give here a brief account of certain cases at the "Dreadnought," where, through the courtesy of the staff of the hospital, M. Jonnesco was enabled to demonstrate his method. The patients upon whom the method was shown were three in number, and we must say at once that the results did not bear out all the claims made by M. Jonnesco in his published statements. At the same time it is to be remembered that, speaking no English, the operator was unable to gain the confidence on the patient's part of which he is wont to avail himself. To be able to talk to the conscious patient, to reassure him, and to distract his attention are aids to success which M. Jonnesco usually employs, and which were, of course, denied him in the case of patients whose language is unknown to him. Moreover, he had not himself prepared the ingredients which he used for injection, although these were prepared, we understand, exactly in accordance with his directions. Again, he was showing something new to a large and keenly interested gathering of medical men, and it may be that the comparative want of success was due in part to his natural eagerness to show quickly those effects which perhaps would have been obvious if more time had been allowed for their development. The first case was that of a young man requiring operation for a breaking-down glandular mass on the left side of the neck. The patient was a good subject, not nervous or frightened, of healthy colour, and of fair intelligence. Sitting up, he was injected between the first and second dorsal vertebræ with 1 cubic centimetre of solution which contained 3 centigrammes of stovaine and & milligramme of strychnine. After the injection he was kept sitting for about a minute and was then told to lie down, his head resting on a pillow. After about a minute in this position his head was lowered below the level of his shoulders for about half a minute and then placed again on the pillow. There were now some retching and moistening of the lips with the tongue. He was told to turn his head to the right, and all the surgical preparations having been previously made and a piece of lint lightly placed over the patient's eyes, M. Jonnesco at once made the incision. There was no evidence of pain, and it was obvious that the patient was unaware that he had been cut. Vessels were picked up and tied, the same quiet condition persisting. When, however, a little dragging of tissues was necessary to expose glands or to secure bleeding vessels there was almost continuous moaning on the patient's part. In answer to questions, however, he admitted that what he felt was not very bad. The skin suturing caused him no sensation at all. This case, then, demonstrated the truth of M. Jonnesco's assertion that it is possible with perfect safety to inject his solution high up in the spinal canal, and to place the patient in such a position that presumably the solution reaches the brain. There was no evidence of any respiratory paresis, nor of any effect at all upon the medulla, unless the short attack of retching be regarded as such. The colour was well preserved, and the way in which cut arteries spurted showed that there was no depression of circulatory vigour. The skin anæsthesia in this case descended to the level of the middle of the thighs. The corneæ were insensitive to touch, and the arms were paralysed. After-effects were limited to severe headache of some hours' duration. From

the point of view of the surgeon, then, this case, in which the operation lasted about 15 minutes, was during the time of operation almost perfectly successful. The only drawback was that mosning to which reference has been made. On the next case, a laparotomy for gastric carcinoma, the same judgment cannot be passed. Here there was not only groaning but straining expiration which interfered with the surgeon's manipulations to an undesirable extent. In fact, it appeared to us that had a gastroenterostomy been attempted it could not have been carried through with the degree of anæsthesia provided. To what extent the straining was due to sensation of pain on the patient's part we cannot say. It became more obvious when the parietal peritoneum was incised, but it was aroused to some extent by the skin cut too. As there was found a mass of carcinoma in the cardiac portion of the stomach the abdomen was closed. The injection in this case had been made between the twelfth dorsal and first lumbar vertebral spines. In the third case the high injection was made in order to procure anæsthesia for a mastoid operation. After two injections, although the skin was perfectly analgesic there was so much agitation on the part of the patient, a boy, when periosteum was dealt with that chloroform was resorted to and the operation performed under its influence. M. Jonnesco lays great stress upon the importance of not sterilising the stovaine itself. The chemists who prepared the stovaine for this occasion declare that it was not sterilised. Its behaviour. however, suggested to some that in reality there had perhaps been a mistake in this respect and that to this the want of complete success in the demonstration may have been due.

SUMMER MORTALITY IN IRISH TOWNS.

THE Registrar-General's quarterly summary of his weekly returns during the three months ending with September last shows that the annual rate of mortality during this period in the 22 town districts of Ireland, with an estimated population of 1,142,398, was equal to 15.8 per 1000, and exceeded by 4.0 per 1000, or no less than 34 per cent., the mean annual rate during the same period in the 76 largest English towns. This great excess of mortality in the Irish towns is the more remarkable in view of the fact that 16 of the 22 town districts consist of small towns with populations under 14,000, whereas the smallest of the 76 English towns has an estimated population exceeding 50.000. The annual death-rate during last quarter in the six largest Irish towns was equal to 13.1 in Limerick, 14.6 in Belfast, 15:1 in Londonderry, 17:1 in Dublin, 18:5 in Waterford, and 19.0 in Cork; it should be noted that only in Dublin, Belfast, and Cork does the population of these Irish towns exceed 50,000. Even in the 16 small town districts, including two with populations under 8000, the mean annual death-rate last quarter was equal to 14.7 per 1000, which exceeded by 2.9 per 1000 the mean rate in the 76 largest English towns. Infant mortality in the aggregate of the 22 Irish town districts during last quarter, measured by the deaths under one year to births registered, was equal to 139 per 1000, whereas in the 76 large English towns it did not exceed 119 per 1000; it was equal to 143 in Dublin, 152 in Belfast, 136 in Cork, 147 in Londonderry, 117 in Limerick, and 232 in Waterford. In the 16 smaller town districts, however, the mean rate of infant mortality last quarter did not exceed 98 per 1000. The annual rate of mortality from the principal epidemic diseases in the 22. Irish towns last quarter was equal to 2.0 per 1000, while in the 76 English towns it did not exceed 1.6 per 1000; this rate from the principal epidemic diseases in the six largest Irish towns was equal to 1.9 in Limerick, 2.0 in Dublin 2.2 in Belfast and in Londonderry, 3.1 in Cork, and 5.4 in.

Waterford. The mean rate from those epidemic diseases in the 16 smallest town districts did not exceed 0.8 per 1000; of the 585 deaths during last quarter in the 22 Irish towns 390 resulted from diarrhea, 112 from whooping-cough, 28 from diphtheria, and 25 from enteric fever; 358 of the 390 fatal cases of diarrhea, all but one of the 112 from whooping-cough, 24 of the 28 from diphtheria, and 23 of the 25 from enteric fever occurred in the six largest Irish towns. These statistics relating to last quarter make it impossible to doubt that the samitary condition of the largest Irish towns compares very unfavourably with that of the largest English towns having far larger populations. The marked excess of infant mortality last quarter in the six largest Irish towns is the more noteworthy because the general rate of infant mortality in Ireland is, as a rule, distinctly lower than that recorded either in England or in Scotland.

DELAYED POISONING AFTER CHLOROFORM INHALATION.

IN the Johns Hopkins Hospital Bulletin for September Dr. G. H. Whipple and Dr. J. A. Sperry have published an important paper on so-called delayed poisoning by chloroform based on an extensive experimental investigation in animals and on one remarkable case in man. They have arivanced our knowledge a stage. Recent researches have proved that chloroform narcosis in animals for any considerable length of time may in some cases cause central necrosis of the hepatic lobules, and this condition if extreme is fatal. When recovery occurs repair of this necrosis, which may have involved one-half or more of every lobule in the liver, is very rapid, and the organ is restored to normal by absorption of the necrotic cells and multiplication of the remaining cells in two or three weeks. By administering chloroform to dogs for some hours Dr. Whipple and Dr. Sperry induced pathological changes similar to that occasionally observed in man after chloroform inhalation. The animals recovered from the anæsthetic and appeared well, but after a time they began to vomit and sometimes diarrhea occurred. Drowsiness followed and terminated in death after one to four days. mortem examination showed central hyaline necrosis of the hepatic lobules, which was sometimes so extreme as to involve all the hepatic cells except a row or two about the portal spaces. There was fatty degeneration of the cells, which was most intense in the boundary zone between the central necrosis and the intact cells about the portal spaces. There was also fatty degeneration of the kidneys and heart. In some cases small submucous hemorrhages and shallow ulcers, from which there was sometimes much hæmorrhage, were found in the stomach and duodenum. Why the hepatic necrosis produced by chloroform should be central is not easy to say. It is well known that in human and animal pathology central necrosis is common and peripheral necrosis is rare. By prolonged chloroform inhalation the necrosis may be made to extend until every hepatic cell is killed except a row or two about the portal spaces. The explanation of the distribution of the necrosis seems to be that lack of arterial blood or accumulation of waste products in the blood (which flows from the periphery to the centre of the lobule) renders the central cells more susceptible to the poison. Dr. Whipple and Dr. Sperry report the following remarkable case in which they believe fatal delayed chloroform poisoning followed a minor operation. A well-nourished negress, aged 19 years, was admitted to hospital with tuber. culous cervical glands in the neck and right axilla. In the axilla was a lump which discharged pus. Under chloroform abscesses in the chest wall and axilla were incised and

drained. The duration of the anæsthesia was 35 minutes. The patient stood the operation well and rapidly recovered from the anæsthetic. But vomiting began in the night and continued on the following day, when there were muscular tremors in the arms and legs, delirium, and slight jaundice of the sclerotics. Convulsions and coma followed, and death occurred at 6.40 P.M. The urine contained a trace of albumin and a few hyaline casts but no acetone. The necropsy showed extreme central necrosis of the hepatic lobules and fatty degeneration of the kidneys and heart. It is stated that ether anæsthesia causes similar visceral changes, but this is denied by Lengeman and others who have found that even prolonged anæsthesia causes no damage to the viscera. It has long been recognised that chloroform, like many other poisons, will, under certain circumstances, produce certain pathological changes in the organs concerned in the metabolism of the body. It has been shown pretty conclusively that chloroform is only one of many factors which are concerned in producing these changes. In many of the cases which have been published such extremely small quantities of the anæsthetic have entered the circulation that no doubt can be entertained upon this point. The original workers in this field-Thiene, Fischer, and Strassburg—demonstrated that concentrated doses of chloroform, when given for a long time or repeated within short intervals, cause the curious lesions to which Dr. Whipple and Dr. Sperry refer, but it is all-important to recognise that chloroform in appropriate percentages does not necessarily cause them. It may do so if other contributory circumstances exist, but the fact remains that of the thousands upon thousands of persons who have inhaled chloroform the large proportion have done so without developing acidosis and degenerative changes in the liver. Research in this direction appears to prove the danger of chloroform in concentration and to emphasise that its safety lies, not only in avoiding the classic dangers of respiratory failure and undue fall in blood pressure, but also in restricting the quantity employed to the bare needs of anæsthesia. Deep and prolonged narcosis carries with it the danger of chloroform toxemia, the destruction of the protoplasm of certain organs of the body, and our present knowledge, due largely to the work of Professor Moore and Dr. Roaf, explains how this destruction may be brought about. We know also that deep narcosis is seldom, if ever, needed in surgery, and certainly need never be greatly prolonged. It would be matter of regret if such work as that of Dr. Whipple and Dr. Sperry were read to mean that chloroform as such possessed intrinsic and uncontrollable toxic properties; to us it seems rather to add one more argument in favour of using chloroform in a scientific manner and by definite doses.

SCIENTIFIC CHILD-STUDY.

WE have received a letter signed by Professor J. J. Findlay, President of the Child-Study Society, and Sir Edward Brabrook, its chairman, saying that the council of the society in its effort to place its work on a scientific basis has approached Professor Karl Pearson, F.R.S., who with his laboratory at University College, London, is in a position to render exceptional service. Professor Pearson has drafted a schedule for studying the factors influencing the social life of the child, which he desires to have filled in by heads of families or by teachers intimate with families. number in the family need not be large, but particulars of father, mother, and at least two children are required. It is considered more important that the schedule should be filled up for families of the upper, middle, or professional classes. The schedules are being distributed through the branch

secretaries of the society in London and in other large centres, and we suggest that our readers might assist this work by applying for a copy of the schedule and taking the trouble to fill in the particulars, for either their own families or those of friends who would give their intelligent and sympathetic cooperation in the inquiry. The schedule is ingeniously contrived to elicit a large amount of information concerning the parents' qualities and aptitudes, as well as touching the characteristics of the children, regarding whom the inquiries concern their health, upbringing, education, tendencies, and modes of living, work, and play, sufficient to afford a fair summary of their psychological development. The correlation of a large number of these charts will entail an enormous amount of work, and it is to be hoped that only those will apply for them who are prepared to fill them up with painstaking accuracy. The proper preparation of one schedule would probably take two or three hours' careful consideration. The council states that parents who would prefer that the actual names of their family should be withheld can fill up a copy of the schedule on that understanding, supplying their name solely to the secretary, who issues the copy with a key number. Copies can be obtained from the Secretary of the Child-Study Society, 90, Buckingham Palace-road, London, S.W.

THE DOCTOR OF DICKENS'S DAY.

Mr. G. W. E. Russell contributed a whimsical article to a recent issue of the Manchester Guardian, in which he contrasted the family physician of 50 years ago with his successor of to-day, claiming as his justification that he was in his own person a monument of medical practice, having "not only seen, but felt," the rise and fall of several systems of surgery. Broadly speaking, he said, the doctors of the "fifties" and "sixties" were as Dickens drew them, the doctor who was called to the bedside of Little Nell, and came with "a great bunch of seals dangling below a waistcoat of ribbed black satin," being a most carefully finished portrait. Such, exactly, were the family physicians of Mr. Russell's youth. They always dressed in shiny black-trousers, neckcloth, and all; as a class they were bald, and though they shaved their lips and chins they wore carefully-trimmed whiskers. They said "Hah!" and "Hum!" in tones of omniscience which would have converted a Christian Scientist; and, when feeling a pulse, they produced the largest and most audibly-ticking gold watches known to the horologist's art. They had what were called "the courtly manners of the old school"; were diffuse in style, and abounded in periphrasis. Thus they spoke of "the gastric organ" where their successors talk of the stomach, and referred to brandy, in which they placed whole-hearted faith, as "the domestic stimulant." The brandy treatment, remarks Mr. Russell, whatever havoc it wrought on a patient's nerves, digestion, and circulation, conferred on him the advantage that when he grew to man's estate and passed from "that poor creature, small beer" to the loaded port and fiery sherry of a "wine" at the university it was impossible to make him drunk. He had, in fact, become quietly immunised. By no violent transition, but gradually and imperceptibly the medical profession has transformed its members into the type of to-day. It was not till the "seventies" were well advanced that the change became apparent. "The present doctor," says this critic of manners, "is as polite and gentlemanlike a young fellow as one could wish to meet," but his behaviour is not "courtly." He does not bow when he enters the room, but "shakes hands and says it's an Al day and I had better get out in the motor." He has abandoned the majestic "we" which formerly the faculty shared with kings and editors. "We

shall be all the better when we have had our luncheon and a glass of sherry," said Sir Tumley Snuffim. His successor says: "Do you feel as if you could manage a chop? It would do you pounds of good"; or "I know the peroxide dressing is rather beastly, but I'd stick it another day or two if I were you." Medical conversation, too, is an art that has greatly changed. "Tom Guy" (not an individual but a type) does not "lubricate" an interview, as his predecessor did, but goes straight to business-inquires, examines, pronounces, prescribes-and then, if any time is left for light discourse, discusses the British thoroughbred, or the rival merits of the two games of football, or delivers an emphatic verdict upon the latest play. Far otherwise did Dr. Parker Peps regale Mrs. Dombey, or Sir Tumley Snuffim soothe the shattered nerves of Mrs. Wititterly, and some may think that though we have discarded, and rightly, their charlatanism, we should be none the worse for some of their impressive demeanour, which assuredly had a suggestive influence.

ABDOMINAL CRISES IN DIABETES.

In the Intercolonial Medical Journal of Australasia for September Mr. R. M. Downes and Dr. R. A. O'Brien have reported two cases of diabetes in which an abdominal crisis occurred suggesting to three or four observers the necessity for operation. In the first case a well-nourished boy, aged 14 years, was admitted to the Melbourne Hospital in the early morning as a case of acute intestinal obstruction. His father stated that at 6.30 A.M. on the previous day he vomited and that he seemed unwell during the rest of the day. Towards the evening he complained of pain extending across the lower abdomen. This pain had increased up to the time of admission. For 36 hours neither fæces nor flatus had been passed, though the boy attempted to go to stool several times. Vomiting occurred three or four times during the day. About two hours before admission he became very restless with a vacant expression. He became duller, so that on admission he was only semiconscious and unable to answer questions rationally. He had suffered from diabetes mellitus for 18 months. His abdomen was prepared for laparotomy, an enema was given with only a small result, and he was put on the table. He was very restless and uncontrollable. The temperature was 99° F. and the pulse was 160. The abdominal muscles were board-like all over; this was thought possibly to be volitional. Abdominal respiratory movement was absent; there was moderate distension and apparently some tenderness. Both flanks were dull. On the right cheek was a large furuncle. The tongue was dry, brown, and coated, and the face was flushed. Mr. G. A. Syme was about to operate when it was found that the urine contained a large quantity of sugar and gave the ferric chloride reaction for aceto-acetic acid. He therefore did not proceed. Sodium bicarbonate was given by rectal and intravenous injection and by the mouth. The bowels acted slightly. At first the patient improved but later the coma increased and he died on the following morning. At the necropsy the gastro-intestinal tract was found normal. The pancreaswas atrophic and firm. In the second case a girl, aged 8 years, was admitted to the Children's Hospital, Melbourne, on Dec. 1st, 1908. She was suffering from glycosuria which disappeared under strict diet. On the 14th she was well and the urine contained no sugar, diacetic acid, or acetone. On the 15th she vomited. several times and complained of paroxysms of abdominal pain. The urine contained diacetic acid and a trace of acetone. A high enema was given and was followed by a motion. In the evening she complained of pain over the right kidney which extended towards the labia. At 5 A.M.

on the 16th there were paroxysmal abdominal pain, constant vomiting, a pulse of 140, and a temperature of 99.4° F. The abdomen was generally tender and was dull to deep and light percussion below a convex line passing from the anterior superior spines of the ilium through the umbilicus; it was resonant in the flanks. The upper abdomen was slightly distended and the liver dulness was much diminished. There was no rigidity or lessened respiratory movement. The leucocytes in the blood numbered 50,000 per cubic millimetre. Acute intestinal obstruction causing auto-intoxication and acetonuria was diagnosed. She was seen by Dr. Maclaren and Dr. Cole, who concurred in the diagnosis and the necessity for operation. At 10 A.M. the pulse was 172, the temperature was 99.60, there was incessant vomiting, and the abdominal signs were unchanged. But at 10.15 the abnormal abdominal dulness had disappeared and the child was semi-comatose. An abdominal crisis of unexplained origin in a diabetic subject was diagnosed. Bicarbonate of sodium was given by intravenous injection and by the mouth, and after 18 hours the urine became alkaline. Next morning she was bright and played with toys. The diacetic acid and acetone disappeared from the urine in ten days, but sugar returned on relaxing the diet. Similar cases do not appear to have been reported previously, but Grube has described in diabetes attacks resembling the gastric crises of tabes. The nature of the cases now recorded is obscure, but they show the necessity of examining the urine not only for sugar but also for diacetic acid and acetone in all acute abdominal cases. In the second case sugar was absent, though acetonuria was present.

LARYNGEAL TUBERCULOSIS.

WE have received a communication from Dr. Beverley Robinson drawing attention to the valuable information which may be derived from an examination of the larynx in cases of doubtful diagnosis of disease of the chest. He states that he has been able to make a positive diagnosis in this way, not merely of the intra-laryngeal condition, but also of that of the lungs. He further says: "I am confident that no physical exploration of the chest, no tests by means of tuberculins, or with the X rays, or by any other known method will afford in previously doubtful cases as much desirable and accurate knowledge to affirm positively a diagnosis as what is revealed to the experienced eye by means of the laryngeal mirror." Dr. Robinson is evidently an enthusiast on this method of examination. Whilst fully recognising his personal dexterity and knowledge of laryngeal conditions, we would point out that but comparatively few practitioners are able to obtain the experience necessary to enable them with unerring accuracy to make a diagnosis such as Dr. Robinson suggests. He forwards to us an article entitled "Clinical Notes on Laryngeal Tuberculosis," written by himself, which appeared in the American Journal of the Medical Sciences for August, 1908, in which this subject is dealt with in more detail. Attention is here drawn to the fact that the voice may be almost, if not entirely, normal at times, and yet there may be inactivity or slight paresis of one or both vocal cords: or there may be marked localised anæmia; or there may be slight congestion of one or both vocal cords in a limited area; or the arytenoids may be slightly infiltrated, and likewise the interarytenoid commissure. Robinson insists that these appearances are suspicious; indeed, he says, with a certain history they are more characteristic even than a little prolongation or harshness of the expiratory murmur at the apex of the lung or an indefinite dulness, "which is often nothing more than the result of the percussion note elicited by a finger from a relaxed or possibly corpulent chest wall." Dr. Robinson's remarks are certainly is applied to the affected testicle with the patient standing

interesting and worthy of close attention, and doubtless examination of the larvnx is not practised as much as it should be in suspicious cases of diseases of the chest.

THE MUSEUM OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE Council of the Royal College of Surgeons of England has added a special room to the museum for the display of various exhibits of historical interest. These were formerly scattered in different parts of the museum but have now been brought together by the museum committee and form a unique collection of interesting exhibits; many of them have not hitherto been on view. They include the body of the wife of one Van Butchell, which was embalmed by Dr. Cruikshank and William Hunter in 1775; the mummied body of a boy who died from plague in 1665, which was found in the crypt of St. Botolph's Old Church; the skin of the heads of three Macas Indians from Ecuador curiously preserved so as to contract to the size of a doll's head and at the same time to retain the features of a living individual; a collection of boots, shoes, and gloves worn by the Irish giant O'Brien; pieces of human skin which had formerly been found nailed to the doors of Worcester Cathedral and the churches of Hadstock and Copford in Essex; a chain and belt formerly used for the purpose of securing lunatics; a cast of the head of Deeming the murderer, who was hanged at Old Newgate in May, 1892; and an electrical machine used by Surgeon Birch about 1775, with a manuscript copy by his sister describing the cures said to have been effected by him with the machine. This makes an extraordinary ethnological cabinet.

BIER'S METHOD IN ACUTE GONORRHŒAL EPIDIDYMITIS.

In the Boston Medical and Surgical Journal of Oct. 28th Dr. J. D. Barney has called attention to the value of Bier's method in acute gonorrhœal epididymitis. In some recent books strapping the diseased testicle with a piece of rubber bandage secured by a strip of plaster is recommended. A piece of thin rubber bandage about 8 inches long and 4 inches wide is used. To the middle of one end is stuck a piece of adhesive plaster 4 inches long and ½ inch wide. The bandage is drawn round the testicle to the proper degree of tightness and is secured with plaster, which must be placed above the greatest diameter of the testicle, otherwise the apparatus will slip off. It is said that if the directions are followed the bandage lies smoothly over the testicle, free from wrinkles, like the cover of a tennis ball. But Dr. Barney finds that it is impossible to attain this end with a single strip of plaster. The loose and elastic scrotal skin allows no such nicety of application, and the apparatus becomes rolled into a narrow strip at the base of the scrotum or slides downwards and falls off. By using two strips of adhesive plaster instead of one Dr. Barney has succeeded in making the plaster lie smoothly and tightly over the whole testicle. The piece of rubber described in the books he finds too short and much too narrow. The dimensions should be about 9 or 10 inches long and 6 inches wide, being altered to suit the size of the testicle. Neither strip of plaster should be long enough to meet completely round the testicle. This would produce a firm unvielding band which when the scrotum swells might be harmful. An interval should be left between the ends of each strap so that the swelling may proceed with only the vielding rubber to check it. The degree of tightness with which the bandage is applied is largely a matter of experience and of experiment in the individual case. If properly applied the bandage should cause no pain. The bandage

and is secured at the upper end with one strip of plaster. When the scrotum is released after the application a few wrinkles are bound to occur. These are obliterated by pulling downwards the free lower edges of the bandage. These edges are next approximated and overlapped more or less, so as to produce a snug fit, and are fastened by the second piece of plaster, which must be applied below the equator of the testicle; otherwise the whole apparatus will slide upwards. The whole testicle is thus enveloped in a smooth, tight, rubber bag, and a suspensory bandage is applied. As the apparatus causes profuse sweating the scrotal skin should be watched carefully for maceration or excoriation. is prevented by a liberal coat of dusting powder applied daily before the bandage is readjusted. In the first 24 or 48 hours there is usually marked cedema of the scrotum with moderate cyanosis. The epididymis may show more induration and more enlargement, but it usually may be palpated with little or no discomfort—a great change from the previous extreme sensitiveness. The bandage may be applied even to the most tender testicle, but patience and gentleness are necessary. In the majority of the cases treated immediate and permanent relief was given. Patients scarcely able to walk because of the painful and tender testicle could walk easily and without pain and in most cases could resume work. The apparatus should be worn constantly, but readjusted daily until all acute symptoms have subsided and the induration and cedema have disappeared. This period may vary from a day to a week, after which the suspensory bandage alone should be worn until recovery is complete. Dr. Barney concludes that for the ambulatory treatment of epididymitis Bier's treatment is the most valuable method, but, as under all methods, there are occasional failures.

LEADLESS GLAZED CHINA AND EARTHENWARE.

THE beautiful specimens of leadless glazed ware which were exhibited this week at the Caxton Hall, Westminster, must have done much to remove from the minds of the visitors the impression that lead was an indispensable æsthetic constituent of pottery. In addition to numerous specimens of table and toilet ware, both of the inexpensive and finest kinds, examples of ornamental pottery and porcelain, artistic tiles, cooking utensils, fireclay, and other sanitary ware were shown. Determined to be practical, the organising committee arranged an exhibition illustrating the durability of the leadless ware, and submitted for inspection pieces of ware guaranteed to have been in constant use during a fair period of trial. The exhibition afforded us particular gratification, inasmuch as we got practical proof that lead could be abolished in the pottery trade for most practical purposes ten years ago, the report of our Commissioner appearing in THE LANCET of Jan. 7th, 1899. In spite of the adverse criticism which that report received we have now before us ample evidence that the cause of leadless glazes has considerably advanced, to the welfare, of course. of the operatives concerned in the pottery industry. Leadless glazed ware is now a practical success in most, if not all, directions.

MULTIPLE DIVERTICULA OF THE SIGMOID.

It is quite remarkable how a pathological condition at one time regarded as excessively rare is found to be of no unusual occurrence when once attention has been directed to it. Very few cases of multiple diverticula of the sigmoid loop of the colon had been observed in this country until the appearance of a remarkable paper by Dr. W. H. Maxwell Telling which we published some time ago. 1 Dr. Telling was

1 THE LANCET, March 21st, 1908, p. 843.

able to collect 80 cases and from the attention which this condition has received from pathologists on the continent in recent years one must infer that it is frequently observed abroad. The condition, although occurring most frequently in the sigmoid colon, may be found in the descending colon and also may extend to the small bowel. A multitude of small hernise of the mucous membrane, varying in size from a pea to a walnut, become extruded on the surface of the bowel—often within the appendices epiploice or the attachment of the mesentery. The cause of the condition is most obscure. The subjects of it are usually over 50 years of age and are often very fat. Dr. Telling found that the condition gave rise to no symptoms in a large proportion of cases. In other cases perisigmoiditis occurs.

THE Lord Lieutenant of Ireland has appointed Sir William John Thompson, M.D., to be Registrar-General of Ireland in place of Sir Robert E. Matheson, LL.D., whose term of office expires on Dec. 1st.

PLAGUE is still increasing in Mauritius. A telegram from the Governor to the Secretary of State for the Colonies has reported 56 cases with 27 deaths during the week ending Nov. 19th.

Looking Back.

FROM

THE LANCET, SATURDAY, Nov. 26th, 1881.

SPEEDY PASSAGE OF A PIN.

A young lady, while changing her dress, put some pins into her mouth, one of which she swallowed. The pin stuck in the exophagus, but could not be seen or felt. She was greatly terrified and complained of acute pain behind the trachea, and said "the pin was making its way through." I forced it into the stomach with a probang, and she became at once relieved. Previous to my arrival at the house, her sister had given her a dose of castor oil, which affected the bowels freely the following morning, and the pin passed through the intestinal canal in fourteen hours from the time of the accident!

There is necessarily great alarm excited by the occurrence of such accidents, accompanied by great anxiety on the part of the patient and friends with respect to the constant administration of purgatives; but in my opinion, it is better to watch the case closely and combat any untoward symptom that may arise, and leave the rest to nature. (A case contributed by Richard Corbett, M.D., Inneshannon, County Cork, dated Nov. 3rd, 1831.)

Philo-Medicus complains of the great hardship and injustice towards the apprentices of apothecaries and chemists and druggists from the practice, now so generally pursued, of keeping the shops open until 11 and half-past 11 o'clock at night; and he recommends that there should be a general arrangement between the masters to close the dispensaries and shops at an earlier hour, in order that assistants and apprentices might have sufficient time for study and rational recreation. If such an arrangement nere entered into, the spirit of competition would quickly dissolve the bonds of such a union.

ROYAL METEOROLOGICAL SOCIETY.—At last week's meeting of the Royal Meteorological Society the President announced that the council had awarded the Symons gold medal to Mr. William Napier Shaw, D.Sc., F.R.S., in recognition of the valuable work which he has done in connexion with meteorological science. The medal will be presented at the annual general meeting of the society on Jan. 20th, 1910.

THE STANDARDISATION \mathbf{OF} DISINFECTANTS.

WITH SPECIAL REFERENCE TO THE DISINFECTANT PREPARATIONS COMMONLY SOLD TO THE PUBLIC.

A CHEMICAL AND BACTERIOLOGICAL INQUIRY.

SECTION III.

GENERAL SUMMARY AND CONCLUSIONS.

PART I .- Chemistry.

WE have now recorded the chemical composition of a number of tar disinfectants as determined by what we have called THE LANCET Acetone-Baryta method (L.A.B.). And we have also presented the results of bacteriological examination conducted under conditions of laboratory practice 2 (Table XXIV.3). Before we discuss the question as to how far we are able to apply these results as a basis of calculation to practical conditions of disinfection, we may first refer to an interesting relation which appears to exist between the carbolic coefficients found by bacteriological experiment and certain chemical factors. In Table I., published in the first section of the report which deals with the chemical analysis of disinfectants, col. 1 contains the percentage weight of phenoloid body found, while col. 2 gives the carbolic equivalent of this weight according to bromine value, reckoning that 94 parts by weight of carbolic acid correspond to 480 parts by weight of bromine in accordance with the equation, $C_0H_0OH + 6$ Br = $C_0H_2Br_3OH + 3$ HBr. In Table XXV. the weight of phenols (col. 1) and their bromine value (col. 2) in terms of absolute carbolic acid are reproduced. In the same table the mean carbolic coefficients determined by bacteriological experiment in which the bacillus coli was the organism chosen are given in col. 5.

TABLE XXV.

						
	1	2	3	4	5	
Disinfectant.	Phenois or phenoloids (P).	Carbolic acid equiva- lent by bromine (B).	Br. equivalent deducted from actual weight of phenol (P-B).	P-B 3	Carbolic coefficient (bacillus coil), mean.	
Cofectant	66.27	38-30	27:97	9:30	9.8	
McDougall's M.O.H. Fluid	47.13	22.71	24-42	8.1	7.9	
Kerol	40.56	17-23	23.33	7.7	7.7	
Okol	48.50	27.44	21.06	7.0	8∙9	
Crude Carbolic	82.65	61.65	21.00	7.0	4.5	
Bactox	39.70	19.30	20-40	6.8	9.5	
Cyllin (bulk sample)	40.41	20.16	20.25	6.7	8.8	
Cyllin (Medical)	32.08	12.79	19 29	6.4	6.4	
Calvert's No. 5 Carbolic	93.26	74-09	19.17	6.3	2.5	
Izal	41.35	25.48	15-87	5.2	7.4	
Lysol	50.96	40.45	10.51	3.5	1.7	
Lawes'	28.20	18.08	10.12	3.3	1.6	
Pearson's	20.70	12.73	7.97	2.6	2.2	
Jeyes' (Chemists')	17.80	11.50	6.30	2.1	1.7	
Krysyl	14.16	9.87	4.29	1.4	1.3	
Zotal	10.00	6.70	3.30	1.1	1.5	
Jeyes' No. 2 (Grocers')	5.13	1.87	3.26	1.0	0.75	

It soon appeared that as the difference between the figures in col. 1 and col. 2 widened so the carbolic coefficient found

by bacteriological experiments was higher. that if the phenol body present in the disinfectant should be carbolic acid itself, the bromine value (col. 2) would be identical with the weight of phenol found (col. 1). As will be seen such was never the case, and so the conclusion is reached that none of the disinfectants examined contained carbolic acid.

If next the percentage bromine value in terms of carbolic

acid is deducted from the percentage weight of phenoloid bodies found, a series of figures is obtained which produce, with few exceptions, the order of germicidal values as determined by bacteriological experiment. The chemical figures, at all events, agree with the bacteriological figures as to differentiating the feeble from the strong germicidal preparations. When further these results are divided by a common denominator—e.g., 3—a quotient is obtained which coincides in the majority of cases with the carbolic coefficient found when the bacillus coli was selected as the organism in bacteriological experiment. Possibly with another denominator a formula might be obtained giving the carbolic coefficient for any organism. In the present examples the formula $\frac{P-B}{3}$ gives the carbolic acid coefficient for bacillus coli, in which P is the actual percentage weight of phenol bodies found and B the percentage of carbolic acid found, calculated upon the amount of bromine absorbed. On the face of these results the bromine value of a phenolic body under the conditions of experiment would appear to be an index of its germicidal power, and the carbolic coefficient, whether it is found by chemical or bacteriological processes, comes to the same figure. are, however, apparent exceptions to this formula if we consider the examples of crude carbolic acid—"Calvert's No. 5 Carbolic Acid," "Lysol," and "Lawes' Fluid" given in the table (XXV.). But it is certainly remarkable that these preparations, which form the exceptions, do not produce emulsions with water in the way that the rest do, and the solutions do not exhibit the Brownian movement. It is also remarkable that in these exceptions the formula P-B gives an indicated value approximately double that 3

found by bacteriological experiment. In these cases it would appear, therefore, that chemistry assigns, assuming there is value in the calculation at all, a greater activity to these disinfectants than bacteriological experiments will allow. It is possible that chemistry is here indicating a germicidal attainment which is not realised in bacteriological experiments because of the particular physical condition of the fluids (solution). It is well known, at any rate, that the activity of many chemical agents is increased by combining them with certain constituents so that with water the whole forms an emulsion. Advantage of this is taken, for example, in certain industrial bleaching processes in which the article is treated with a mixture of stearine (previously made into an emulsion or saponified) and hydrogen peroxide, sulphurous acid, or other bleaching agent. The bleaching bath is made to contain from 5 to 15 per cent. of the stearine emulsion, together with sufficient of the bleaching agent to effect the removal of colour, and the temperature is kept at about 86° to 104° F. The rapidity of the process apparently depends upon the stearine acting as a carrier and bringing the particles of the reagent into close contact with the colouring matter of the fibres. If our deductions are right there would appear to be some analogy here between bleaching and disinfection, and it will be observed that the bleaching agents, hydrogen peroxide and sulphurous acid. are germicides. The emulsion brings into play the full activity of the bleaching agent, and the same may be true of the germicidal agents (when they are tested under favourable conditions) contained in disinfectants which form emulsions when mixed with water.

There is a suggestion that the bacteriological activity of a chemical agent is better realised in emulsions than in solutions. Hence "Lysol," which is a 50 per cent. clear solution of cresylic acid in soap, or an aqueous solution of carbolic acid, both show a relatively weak germicidal action because in solution the full activity of the agent is not appropriated, and chemical analysis indicates potentialities which fail, how-ever, to exert their full effect on the organisms, because there is not that continual bombardment which is kept up by the Brownian movements of an emulsion. Lord Lister long

THE LANCET, Nov. 13th, 1909, p. 1454.
 THE LANCET, Nov. 20th, 1909, p. 1516.
 In this table Sanitas Fluid was inadvertently classed among tar

ago pointed out, it is interesting to remember, that a solution of carbolic acid in oil had little or no antiseptic power, and his observations were confirmed by Koch. It would thus appear to be an advantage when it is the fact that a disinfectant of the tar class shows, upon dilution with water, a constant state of movement which is not the case when phenol bodies are dissolved in a clear fluid. The emulsions give the full active value of the phenol bodies present; the solution may not, except possibly when it is heated, by which its molecular movement is accelerated. Chemistry may possibly indicate, therefore, what the maximum bacteriological value under ideal conditions can be —a value, however, which is only realised when the phenol bodies travel rapidly through the fluid, as in the case of an emulsion. A low bromine figure under the conditions of experiment indicates, for reasons not yet made clear, high bactericidal potentiality which may be exerted fully when the phenol particles are conveyed rapidly to the organism by myriads of oily travellers. Chemistry suggests the germicidal potentials of a disinfectant, and it is for bacteriology to tell us how far these potentials are realised under varying conditions.

The chemical results suggest the desirability of submitting the various phenolic bodies employed in commercial disinfectants to careful extended chemical examination with the view of unfolding their individual chemical characteristics. So far we have only attempted a differentiation of them by one method which was directed to determining their bromine substitution value. This value certainly appears to have some relation to germicidal value, but a further differentiation is needed which would no doubt give more light upon this point. The fact that varying bromine values are obtained for phenol bodies isolated from different disinfectants proves that we are dealing with different chemical entities each possessing its own germicidal value just as do corrosive sublimate, bleaching powder, peroxide of hydrogen, chinosol, or other definite chemical agents. The fact that certain disinfectant preparations on the market consist of a well-defined chemical substance excluded them from the terms of reference of the present

It would be of interest to know what it is that bromine displaces in phenoloids, whether it is the hydrogen of the hydro-carbon group or of the hydroxyl group, whether possibly the presence or absence of hydroxyl determines possibly the presence or absence of hydroxyl determines germicidal power, or whether and how far the bromine may have oxidised CH₃ groups in such bodies as the cresols. Apparently it is that phenol body which admits least of its hydrogen being displaced by bromine, which is the most powerful germ destroyer. A knowledge of the constitution rather than the composition of the substance would probably supply the explanation of this circumstance, and fresh inquiry will be usefully turned in

this direction.

Another very important question to be decided is the adaptability of the various disinfectant preparations to environment. In practice it is obvious that in a large number of cases the disinfectant has not only disease organisms to deal with but organic complexes also, which are calculated to discount the germicidal power more par-ticularly of the emulsified preparations. We have already referred to some experiments; and we have made a few experiments on the subject ourselves, which showed that organic particles have the power of adsorbing the particles of the emulsion, in consequence of which germicidal value of this class of disinfectant (emulsion) is considerably reduced. Apparently this reduction of germicidal power holds good, not so much for phenol solutions as for emulsions, so that in the presence of indeterminate organic matter (soluble or insoluble) the energetic germicidal action due to an emulsion is sacrificed to a large extent. Organic matter presents an obstruction, so to speak, to the rapid passage to and fro of the agent through the fluid. This fact depreciates the value of the emulsion preparations, and since in most cases they are employed to disinfect, not naked organisms in distilled water, but organisms present in an excess of indeterminate organic matter, it may ultimately be proved by bacteriological experiment that under the conditions of practice emulsions offer no advantages over clear solutions. It must be borne in mind that so far the results of our bacteriological experiments relate only to the testing of the modification we have made use of have we under any

emulsions under conditions presenting no interfering agencies.

If bacteriological analysis, made under conditions approaching those met with in practice, should ultimately prove that the germicidal power of an emulsion is reduced to that of carbolic acid itself, the chemical analysis of the disinfectant will obviously assume further importance. After all, the emulsions have only received the award for high efficiency because they were tested under the non-depreciatory conditions of bacteriological experiment instead of under the depreciatory conditions of practical disinfection. We have also to consider the question of the incompatibility of certain emulsions with salt water, hard water, and so forth. We have made some experiments in these directions, the results of which we hope to report at some future date. Salt and chalk are obviously de-emulsifying agents, and when these are met with in practice they would lead to germicidal deterioration, the value of the disinfectant then simply depending upon the kind and amount of disinfectant substance present, the emulsion having been destroyed.

Some of the disinfectant preparations we found withstood mixing with salt and hard waters better than others. for instance, which are emulsified without the use of soap or resins are compatible with salt or hard water. On the other hand, extreme dilution with hard or salt water of those disinfectants emulsified with soap resulted in the separation of the phenol bodies and neutral oils on stand-To the former the depreciating effect of organic matter still applies; with the latter both organic matter and hard or salt water tend to break up the emulsion, in which case the chances of the germicide coming into intimate contact with the organism are reduced. Here, again, an emulsion would give an exaggerated value in theory but an ordinary value only in practice. The fact that bacteriology under ideal conditions overstates the case from a practical point of view is one of the reasons why chemical analysis has fallen into disrepute. It is held that the emulsions showed increased germicidal efficiency which had no relationship to the amount of germicide present. That appeared to be so when the tests were made under laboratory conditions, but practical considerations indicate that probably in most, if not in all, cases the activity of the emulsion is greatly reduced, as during its service it naturally encounters filth of all kinds. We hope as time and opportunity serve to investigate further these and other important features of the question and to bring the results before our readers at some future date.

PART II. - Bacteriology.

The bacteriological test as applied in our series of experiments has brought out an order of merit for the tar dis-infectants the broad features of which may be accepted unconditionally, though we do not claim for this order absolute accuracy and finality. This order coincides in most cases very closely with that founded on their chemical com-position. When any marked deviation from the parallelism of chemical composition and germicidal power can be demonstrated some difference in physical properties—fineness of emulsion, say -- is usually a marked feature.

In regard to this parallelism it must be borne in mind that the bactericidal and chemical results were arrived at quite independently and in different laboratories, and only when the two sets of figures had been obtained were they brought alongside one another and compared. How remarkable is the coincidence may be seen on reference to Table XXVI. chemical analysis as now carried out affords definite evidence of the presence of a certain proportion of active germicidal substance, certain phenolic compounds, in the tar disinfectants-i.e., it affords evidence that the potent agents are actually present in the disinfectant and in certain proportions; but it cannot do more than suggest how far the germicide present is effective—i.e., how far it is able to do its work under the conditions in which it has to act.

The bacteriological results are so consistent throughout that we have little hesitation in putting them forward as affording an accurate indication of the germicidal power of the disinfectants we have tested. We are fully satisfied on this point, although in our investigation we have not found such high coefficient figures as have been given by other observers. Neither with the Rideal-Walker method nor with than 13. attention to the fact that in our tables the figures obtained check one another most closely, so that the intermediate figures, though not called upon to provide any direct information, are of considerable value in

conditions obtained carbolic acid coefficient figure higher by taking a correspondence between the killing power of In this connexion we wish to draw special carbolic acid and that of the germicide, being tested at any point in a 15 minutes' period where the two happen to coincide in killing the test germ.

Singly, some of the modifications of the Rideal-Walker test appear to be almost trivial, but combined they make building up the general picture of results. We have already possible a much more thorough examination and accurate explained that we have calculated the carbolic acid coefficient determination of the germicidal power of any disinfectant to

TABLE XXVI.—Showing the Comparative Cost of 100 Units of Germicidal Efficiency of Certain Commercial Tar Disinfectants, rechaned from the Carbolio Acid Coefficiency and the Price per Ounce, in Pence.

		Advertised price. in pence, of bottle.	Cost, in pence, per ounce.	Price ratio to carbolic acid taken, at 1s. 4d. per	Germicidal ratio to carbolic	of efficiency	
Disinfectant.						$= \frac{\text{price ratio to carbolic acid}}{\text{germicidal ratio to carbolic acid}} \times 100.$	
SANITAS-BACTOX	11	12	1.09	1.09	9·5	$\frac{1 \cdot 09}{9 \cdot 5} \times 100 = 11 \cdot 5$	
McDougall's M.O.H. FLUID	4	4	1.00	1.00	7.9	$\frac{1.00}{7.9} \times 100 = 12.6$	
COOK'S COFECTANT	8	10 <u>‡</u>	1.31	1.31	9.8	$\frac{1.31}{9.8} \times 100 = 13.4$	
Sanitas-Okol	10	12	1.2	1.2	8.9	$\frac{1\cdot20}{8\cdot9}\times100=13\cdot5$	
CRUDE CARBOLIC ACID	10	6	0.60	0.60	4.2	$\frac{0.60}{4.2} \times 100 = 14.3$	
CYLLIN	9	12	1.33	1.33	8.8	$\frac{1\cdot33}{8\cdot8} \times 100 = 15\cdot0$	
IZAL	4	6	1.50	1.50	7.4	$\frac{1.50}{7.4} \times 100 = 20.3$	
Kerol	7	12	1.71	1.71	7.7	$\frac{1\cdot 71}{7\cdot 7} \times 100 = 22\cdot 2$	
ZOTAL	32	12	0 37	0.37	1.5	$\frac{0.37}{1.5} \times 100 = 24.7$	
KRYSYL	20	101	0.52	0.52	1.3	$\frac{0.52}{1.3} \times 100 = 40.0$	
CYLLIN (Medical)	4	12	3.00	3.00	6.4	$\frac{3}{6} \frac{00}{4} \times 100 = 46.9$	
CALVERT'S No. 5 CARBOLIC ACID	8	12	1.50	1.50	2.5	$\frac{1.50}{2.5} \times 100 = 60.0$	
LAWES' FLUID	6	6	1.00	1.00	1.6	$\frac{1\cdot00}{1\cdot6} \times 100 = 62\cdot5$	
PEARSON'S ANTISEPTIC	8	12	1.50	1.50	2.2	$\frac{1\cdot 5}{2\cdot 2} \times 100 = 68\cdot 2$	
JEYES' (Chemists')	10	12	1.20	1.20	1.7	$\frac{1\cdot 2}{1\cdot 7} \times 100 = 70\cdot 6$	
Lyson	8	12	1.50	1.50	1.7	$\frac{1.5}{1.7} \times 100 = 88.2$	
CARBOLIC ACID (Pure)	16	16	1.00	1.00	1.00	$\frac{1.00}{1.00} \times 100 = 100.0$	
JEYES' No. 2 (Grocers')	10	12	1.20	1.20	0.75	$\frac{1 \cdot 20}{0 \cdot 75} \times 100 = 160 \cdot 0$	

from the data obtained from the two extreme points of our curves, but even a casual examination of the tables will enable anyone accustomed to the examination of such curves to see the importance of the intermediate points as controls. The mean we have used seems to us to be a much more satisfactory figure by which to represent the relative germicidal activity of a disinfectant than the arbitrary figure obtained results.

be tested. For example, without the sterilising apparatus we describe it would be impossible to make the number of dilutions we use unless a very large amount of skilled assistance were constantly available. Without this apparatus, too, it would have been equally difficult to use the larger amount of seeding material which gave us our more regular The platinum spoons used in place of the

needles or öse were the outcome of a large number of experiments made with the object of satisfying ourselves that the quantities taken up in these spoons, although always at least three times as great as those taken up by the ordinary loops, never bear too great a proportion to the 10 cubic centimetres of the McConkey's medium into which the bacilli, after being treated with the disinfectant, are introduced.

How regular these results are will be seen in examining the curves where very few growths appear out of the order in which they might be expected. Were these curves, occurring in the course of a biological experiment, absolutely perfect, not only should we look upon them with suspicion but we should feel that others had a right to do the same. As it is, the intercurrent accidental result acts rather as a control or check on the rest of the figures inserted in the table, this being especially evident where the bacillus coli communis is used, an organism we have employed in preference to all others because (1) the carbolic acid coefficients obtained when this non-pathogenic organism is used as a test correspond very closely with those obtained when the pathogenic bacillus typhosus is employed for the same purpose; and (2) it gives with McConkey's bile-salts glucose broth a definite reaction easily recognised with the naked eye, and no microscopic examination is necessary to determine that we have a growth of the specific organism that was introduced, whilst any accidental contamination with other organisms occurring in the secondary tubes is readily detected, also without any microscopic examination.

At present disinfectants are valued and bought according to their carbolic acid coefficients by Government departments, municipalities, and public and private bodies, and so long as this is the case—i.e., until a better and more reliable standard is obtained—the factor on which price will be based is this carbolic acid coefficient. According to our results, the price per 100 units of germicidal power would work out as in Table XXVI.

It must be distinctly understood, however, that these comparisons as regards the germicidal activity of the various disinfectants can be accepted as reliable only under the conditions of experiment adopted by us, these necessarily being of the simplest and most limited character. Such comparisons must, however, be made and deductions drawn therefrom before any further advances can be made, as germicidal activity must necessarily be taken as the basis of disinfection whatever other factors may ultimately have to be introduced.

As a matter of fact, when we come to deal with the actual process of disinfection it would appear that the physical conditions are on no account to be neglected. So far as we have been able to gain any evidence from the small number of experiments, chemical, bacteriological, and microscopical, on these various disinfectants, it appears that those in solution, as stated above, are most affected by temperature and least by other physical conditions, and that unless they are precipitated from their solutions or locked up by chemical combination with other substances they are the most stable and equable germicides at present at our disposal. Our experience is that with any rise of temperature disinfectants in solution become more potent as germicides. The same holds good of tar emulsion disinfectants, but from the fact that the carbolic acid coefficient falls with a rise of temperature it must be accepted that the rise is not so marked as in the case of the solution. This raises questions of great importance in connexion with the problem of practical disinfection, which, however, must be left for future and fuller consideration and investigation.

In a few preliminary experiments carried out on known bacteria (B.C.C.) introduced into fabrics the disinfectant results have not been of the same order as in the simpler germicidal experiments, the organisms protected by the threads, &c., of fabrics withstanding the action of the emulsified disinfectant much more and for a longer time than that of the disinfectant in solution. We mention these facts merely to indicate that the question of practical disinfection is by no means so simple and activity. This, of course, has been insisted upon by those who have worked at this question, and it may be that ultimately the disinfectants when tested under more practical conditions may have to be arranged in an order very different from that given in our tables, but we believe that, so far as the emulsions, at any rate, are concerned, those which

contain the highest quantity of phenoloids brought into the finest state of division, and having least tendency to combine and remain combined with albumins or with lime or other substances in solution in the materials to be disinfected, will be found to be the most efficient.

It is unfortunate that in all bactericidal tests as at present performed the figures obtained convey no real idea of the disinfecting work under natural conditions of which the substance is capable; these figures give merely a comparison, bounded by narrow conditions, between the germicidal power of phenol and that of the disinfectant under consideration, whilst we know practically nothing of what this germicidal power of phenol really is when applied to disinfection under these natural conditions. To deal with practical problems it seems clear that this latter question must be first decided, and this will mean extensive investigations on the modifying factors involved in practical disinfection. When we are able to say that the temperature at which disinfection is to be carried out will modify the necessary strength of the dilution by multiplying or dividing by a given figure for each degree above or below that taken as the standard; when we are able to refer to similar figures to modify our coefficient, representing each type of organism to be destroyed, the type of surrounding conditions in which it is found, the type of material to be disinfected and its surface, soft, hard, irregular, or spongy, that soak up fluids or repel them and the like; when we are able to modify the figures according to the physical and chemical nature—emulsion or solution of the diluted disinfectant, to allow for the influence of the diluting fluid—hard or sea water or water containing organic matter; when such points as these are cleared up and tables of figures obtained to which reference may be made and the coefficient figure modified in accordance with the required conditions, then and then only will it be possible to use such narrow standard tests as those we at present utilise as a definite foundation on which to base the solution of the problems of practical disinfection.

The two sets of data that will be required are:—Firstly, a figure representing the dilution of the disinfectant which will sterilise a standard amount of a culture containing a standard number per cubic centimetre of a standard organism in a standard time. Secondly, reference tables giving a series of figures which can be used to multiply or divide the figure representing the strength of the dilution found above, so that it may be brought into line with the conditions under which it will have to perform its work. With such a series of factors and their influence before them the makers of disinfectants would be able to state definitely in their printed instructions what strength should be used for each purpose and to suggest what modifications would be necessary under any given set of conditions.

We believe that it is along these lines that future research should be pursued, and that until these details are forth-coming it is, and will be, impossible to determine what dilutions may be used, safely and economically, to attain effective disinfection under the varying and varied conditions met with in practice.

CONCLUSIONS (CHEMICAL).

A.—The evidence as regards a physico-chemical standard suggests, in the case of, at any rate, most of the tar disinfectants used for general purposes—that (1) the disinfectant should contain a reasonable amount of active bodies, e.g., phenols or phenoloids, and (2) that the dilutions with water should exhibit Brownian movement, in other words, should form a satisfactory emulsion.

B.—There is no objection to disinfectants of varying qualities being sold to the public, but it is desirable that price should be commensurate with quality, which, as will be seen from Table I., is not always the case. There can be no praise awarded to a phenolic or tar disinfectant which, when tested bacteriologically under what may be termed ideal conditions, shows an indicated germicidal value less than that of carbolic acid itself. In chemical terms $\frac{P-B}{3}$ should be over

unity, and that condition should be associated with the fact that the disinfectant produces a satisfactory emulsion with water. A consideration of the results of analysis of a number of disinfectants commonly supplied to the public and of the prices charged for them shows that

manufacturers can supply, presumably at a reasonable profit to themselves, 100 units of phenolic body at a retail price varying from sixpence to a shilling having a carbolic coefficient varying from 5 to 9.

As we have shown, the value $\frac{P-B}{3}$ can be rapidly determined by chemical analysis, the estimation of soaps, resins, and neutral oils being of little consequence. Ocrtainly the method quickly brings to light the ineffective article, and distinguishes further the feeble from the strong.

C.—We put this formula forward as a possible useful guide to the differentiation of tar disinfectants, but further work is needed on the subject before we can make quite certain of the validity of the proposal. There is here, at any rate, a set of experimental results which distinctly suggests that chemical and germicidal action under the most favourable conditions are analogous, and the bromine-combining value of a phenoloid appears to give a clue as to the power of that body to kill organisms.

CONCLUSIONS (BACTERIOLOGICAL).

A.—The Rideal-Walker method of testing disinfectants certainly gives accurate information under well-defined and strictly limited conditions, but results that can be set down in definite black-and-white figures are exceedingly difficult to obtain.

B.—The modifications of this method utilised in our work, while rendering the test less liable to aberrant results, ensure a clearer and more expanded picture of the germicidal power of a disinfectant than has hitherto been obtained.

C.—There can be no doubt that the coefficients as given in Table XXIV. indicate that the various disinfectants sold to the public have very different germicidal values; this doubtless is associated with the proportion of the germicidal chemical agent present and the physical conditions under which it exists.

D.—It is obvious that measured by such a standard certain of the disinfectants now on the market must have a relatively small, and in some cases very small, germicidal value.

E.—Never in our investigations having found such high carbolic acid coefficient figures as have been given by other observers to certain disinfectants, we are of opinion that many have had claimed for them an exaggerated value, when compared with carbolic acid, which is by no means justified.

F.—Results obtained in such bacteriological experiments as those we have carried out, although giving a germicidal value to a disinfectant acting under the most favourable conditions, afford little indication of their germicidal value when used in practical disinfection.

G.—It is evident, then, that much remains to be done in the solution of such problems, amongst others, as arise in connexion with (1) the presence of foreign substances in the material to be disinfected; (2) the temperature at which the disinfecting process is carried on; (3) the fluid with which the disinfectant is diluted—hard water, soft water, sea water, &c.; (4) the type of micro-organism that has to be destroyed in the process of disinfection; (5) the nature of the substance and the character of the surface of the material to be disinfected; and (6) the duration of the disinfecting process.

H.—Only when the influence of such factors as the above have been determined will it be possible to modify any standard coefficient figure, and thus obtain data for the preparation of effective and economical dilutions to be used in meeting the various problems of disinfection.

SIDLAW SANATORIUM.—A meeting of the donors and subscribers to the Sidlaw Sanatorium was held in the Burgh Court Room, Dundee, on Nov. 17th. The town clerk intimated the resignation of eight directors. Professor D. MacEwan proposed that the retiring directors should be asked to postpone their resignations until the matter had been gone into, and that a committee consisting of the directors and subscribers should be appointed to report fully on the whole matter. Notwithstanding the present position of affairs and that the deficit was equal to £40 a month, provided that some attempt was made to get additional subscribers, he thought that it would be possible to continue the institution. He suggested that a conference might be held with the directors of the Royal Infirmary re the question of receiving tuberculous surgical cases of children into the sanatorium. It was ultimately agreed to call a public meeting

SOME CONSIDERATIONS OF MEDICAL EDUCATION.

V.1

The Reform of the Curriculum.—Instruction without Examination.—Various Schemes for Arrangement of the Curriculum. —The Educational History of 1111 Qualified Men.

In May, 1905, an important debate again ensued in the course of the proceedings of the General Medical Council upon the question of the possibility of including certain subjects in the medical curriculum without requiring examinations on them, the debate arising out of the report of the Education Committee of the Council upon the subject. The Education Committee reported that it had endeavoured without much success to obtain the information which had been requested on the whole matter by the Council; that certainly there were subjects, such as vaccination, ophthalmology, mental diseases, and infectious diseases, which formed part of the compulsory curriculum, but in which no special examinations were held, although pupils knew that questions might be asked upon them; and that there was no country in Europe where the certificate of a professor or teacher is taken by a faculty of medicine in lieu of examination.

Dr. Mackay desired to remit to the Education Committee, later amended to a committee of the Council, to prepare and present a detailed report upon the system of examination in medicine followed in other countries, with the special object of determining the number of professional examinations demanded, the subjects included in these examinations, and the value, if any, attached to the records of class attendance and work. The Council, however, rejected the motion, and the ingenious method of rearranging the curriculum by omitting from the test of examination subjects in which the students might be considered to be hall-marked by their teachers was thus shut down upon. Undoubtedly such a scheme has many risks, but Dr. Mackay's proposal might have been found not to differ very much from methods in practice if any committee of the Council had had time and opportunities to make the wide investigation which he advocated. But such an investigation would have had to be very thorough before its results would have justified the Council in a dashing departure.

The late Dr. Lindsay Steven, one of the best and most practical authorities on medical education in the General Medical Council, and one whose death was much deplored by his colleagues, proposed a motion:—

That it be remitted to the Education Committee to consider and report to the next session of Council whether the adoption by the Council of one or other or both of the following resolutions would not help to secure the attainment of the object the Council had in view in instituting the five years curriculum, viz.: (1) That the preliminary scientific examination in physics, blology, and chemistry should be passed before the student begins the qualifying study of anatomy and physiology; (2) that before being admitted to the final examination the student should produce evidence that he has devoted the last year of his curriculum exclusively to practical and clinical work and study.

The Education Committee of the Council had these questions under consideration for some time and finally reported that the operation of the first resolution might have the effect of causing an undue amount of time to be devoted to the preliminary sciences, with two possible subsequent results. "Either the student," the report ran, "will be tempted to crowd the rest of his study into the remaining two or three years, as the case may be, of the five years' curriculum, a course to be seriously deprecated, or he will be compelled to take one or more additional years. The committee is of opinion that the main effect of the proposed change would

receiving tuberculous surgical cases of children into the sanatorium. It was ultimately agreed to call a public meeting on an early date.

1 Nos. I., II., III., and IV. were published in The Lancet of Oct. 23rd (p. 1232) and 30th (p. 1301), and Nov. 13th (p. 1459) and 20th (p. 1531), 1909, respectively.

be to seriously lengthen the curriculum and thus to render entrance to the profession more difficult and expensive than it now is." As things now are the curriculum is far more often one of six or even more years—and this even in the case of industrious students-than one of five. The committee noted that the proposal did not contemplate the transference of the subjects it deals with to the preliminary course of study, which would withdraw from the Council the direct supervision of the arrangements for teaching them, nor did it seek to enact any special provision, the natural sequence of such a transference, for determining the length of the curriculum subsequent to the completion of the examination in chemistry, physics, and biology.

With regard to the second resolution, the committee considered that distinct evidence of clinical and practical study in the fifth year should be produced by the student, showing that his time in that period of his curriculum had been mainly occupied in such work, but it would not suggest any regulation which should absolutely limit the work of each session of the period of professional study. reminded the Council that the present recommendation is to the effect that regulations should be so framed that attendance on systematic courses may be concluded at the end of the fourth year of study, and while agreeing with this, the Education Committee would not advise that any proposal should be sanctioned which would prevent a student from supplementing his clinical study by suitable systematic work. The committee held that this resolution also would tend to lengthen the medical curriculum.

The debate which followed on this report showed that the Council felt the danger of thus attempting to divide the medical curriculum into watertight compartments, and every teacher or examiner of experience must agree with this view. On the whole it is better that the student should finish with his preliminary scientific subjects before tackling the professional studies of anatomy or physiology. Similarly, on the whole it is better that the last year of the student's course should be occupied in clinical work, familiarity with which is after all the object of his education. But it would be wrong to make such an arrangement of the student's time compulsory upon him. There are students of different circumstances, students of different equipment, and students of different powers of learning, and some amount of elasticity must be permitted in the curriculum to meet such varying requirements.

But the debate on Dr. Lindsay Steven's double-barrelled motion led immediately to an interesting motion by Sir Henry Morris in the following terms :-

That it be referred to the Education Committee to consider and report to the Council (1) as to the desirability of transferring the preliminary science subjects—physics, biology, and chemistry—from the curriculum of medical studies to a stage preliminary to the commencement of the curriculum; (2) as to the advisability of requiring a five years' period of study even after removing from the curriculum these preliminary scientific subjects.

This motion was a bold recognition of the fact that the majority of medical students do not obtain their qualifications after five years only of study, but that, on the contrary, the curriculum is really one of six, or more than six, years. Sir Henry Morris advocated his motion in a strong speech based upon personal knowledge, in which he deplored the demands made upon the time of the medical student by purely scientific teachers. But the report of the Education Committee, upon a remit, was unfavourable to the first suggestion and postponed consideration of the second. It was clear, as the committee pointed out, that the proposal to transfer the study of physics, biology, and chemistry to a stage preliminary to the commencement of medical education proper (i.e., of the medical curriculum) involved important questions as to the standard at present reached in the secondary schools of the country; while the whom 542 qualified in England, 402 in Scotland, and 167 in

committee might have added that in such a country as Ireland where no facilities exist at secondary schools for the teaching of elementary science, the innovation would have borne very hardly. A special committee of the Council had drawn up in 1904 new syllabuses for the guidance of examining bodies in the subjects-of chemistry, physics, and biology, and considered that the effect of these syllabuses upon the educational course in its present shape ought to be given due trial.

We must make further reference to the subject of science teaching in secondary schools, for Sir Henry Morris here introduced a subject of the very greatest importance to many of the best educational institutions in the country, and it is certain that the attitude and opinion of the science masters in the public schools will have to be taken into consideration by the Council. For the time, however, his scheme for the readjustment of medical studies failed to find favour with his colleagues. But the reiteration of plans for the arrangement of the medical curriculum marked the sense of the Council that the present state of affairs was unsatisfactory, and at the next session Sir John Batty Tuke came forward with a plan for a new grouping of the medical curriculum. He asked the General Medical Council to make it a requirement in regard to professional education that all the subjects should be divided into two main groups, one comprehending physics, chemistry, elementary biology, anatomy, and physiology, and the other comprehending all the other subjects; and further, that no licensing body should recognise instruction in any subject comprehended in the second group until candidates have passed in the subjects comprehended in the first group. An interesting debate followed. Sir John Batty Tuke supported his suggestion that a block of this sort should be introduced into the student's curriculum by alluding to the more elaborate nature of the education of the medical student and the increasing stringency of his examinations. The late Sir T. McCall Anderson, though in sympathy with Sir John Batty Tuke as far as the proposal was designed to prevent neglect of the final subjects owing to the pressure of the intermediate subjects, thought that such a scheme left the door open to an extension of the time of the curriculum to which he was entirely opposed. He therefore moved as an amendment that a minimum of two years should be devoted to the subjects of the final examinations, and that no qualifying courses on these subjects should be recognised until all the previous examinations were passed. Sir Henry Morris again advocated taking the preliminary scientific subjects out of the curriculum, and it was decided to remit these various proposals.

But yet another plan was brought forward, Sir John Williams proposing a slightly different scheme in which the subjects for the medical curriculum were to be divided into three groups corresponding with the usual divisionsnamely, (1) the preliminary scientific subjects, (2) the intermediate subjects, and (3) the final subjects; but it was to be made compulsory that any instruction in any subject of the last two groups should not be recognised until the candidate had passed in the subjects of the previous group. This proposal again implied definitely dealing with medical education in watertight compartments and was duly remitted to the Education Committee. By this time the Education Committee had its hands very full, but at the summer meeting of the Council in 1907 an interim report was presented to the Council by the committee which deals incidentally with many of the suggestions which had been remitted to it.

The report contained the educational history of 1111 licentiates and graduates in medicine in the year 1906, of

It was found that of these 80 per cent. had commenced their study at an age falling within the period of five years from 17 to 21, 5 per cent. having entered when younger than 17 and 15 per cent. when older than 21. The age at which these students qualified was also capable of being divided into three groups, having a certain similarity that is to say, 80 per cent. of the 1111 students qualified within the seven years period between 23 and 29 years of age, while 5 per cent. qualified younger than 23, and 15 per cent. qualified older than 29. The Education Committee asked for permission to obtain further information with regard to the dates of the professional examination of these 1111 gentlemen, a proposal which was unanimously agreed to. In this way it would be possible to see at what points in the curriculum particular difficulty seemed to be experienced by the student, as well as to gauge how far time overspent in one direction was apt to lead to scamping in other parts of the curriculum. This interim report also contained the interesting fact that in 1906 the mean length of the curriculum of those who qualified was 6 years 11 months—namely, 7 years 4 months in England, 6 years 6 months in Scotland, and 6 years 5 months in Ireland. This interim report was a most valuable document. The number of students dealt with was large enough to make deductions from the figures fairly applicable to medical students as a whole, whether English, Scottish, or Irish: while the ascertainment of the average age of entering upon study and the average period devoted to study gave tangible ground upon which to build any schemes of reform.

A report of the Education Committee on the curriculum in medicine was submitted to the Council at the winter meeting of 1908, for which excellent piece of work (see THE LANCET, Dec. 5th, 1908, p. 1683 et seq.) the Council was mainly indebted to Principal Mackay. The report is of too recent date to need any summarising. It showed that a certain extent of overlapping inevitably took place in the student's career, and that the time in the curriculum which should be devoted to the final subjects was encroached upon; and it proposed the division of the course into two reasonable limiting periods. The consideration of the report, after an interesting debate, was postponed until the following session, that of May, 1909, and was then further postponed until the session now in being, where the whole matter is under discussion (see THE LANCET, Nov. 27th, p. 1641.

(To be continued.)

COMPLIMENTARY DINNER TO PROFESSOR ARTHUR ROBINSON.—The Medical Faculty and Senate of the University of Birmingham, together with a few private friends, entertained Professor Arthur Robinson, recently professor of anatomy in the University to dinner on Nov. 20th, in the University Club, Birmingham, on the occasion of his leaving the city to take up his new duties as pro-fessor of anatomy in the University of Edinburgh. The principal of the University, Sir Oliver Lodge, presided over the company, which numbered 45, among whom were Professor G. Barling, Professor J. H. Poynting, and Professor Hughes, deans of the Faculties of Medicine, Science, and Arts respectively, many of the professors, and some prominent public men. Sir Oliver Lodge proposed the toast of "Our Guest" in the happiest of terms. He spoke of his skill as a teacher, his renown as an anatomist, and his sterling qualities as a man. Professor Barling also spoke, and referred to the able assistance Professor Robinson had given him as sub-dean during the five years of his tenure of office in the University. He eulogised his services to the school as a teacher, investigator, and administrator. Professor Robinson made a feeling and appropriate reply, speaking particularly of the progress which the Birmingham Medical School had already made and of the promise it held out of still greater progress in the future. A most enjoyable evening was spent and a right hearty send off given to Professor Robinson.

THE REPORT OF THE INTERNATIONAL OPIUM COMMISSION.

THE International Opium Commission, which was called together on the initiation of the United States Government, met at Shanghai on Feb. 1st of this year. Thirteen Governments were represented, and their deliberations were opened by an address of welcome in Chinese from the Viceroy of Liankiang, who had been nominated for this purpose by Imperial Rescript, the address being afterwards repeated in English by a member of the Viceroy's staff. The report of the Commission is now issued in two parts. The first, extending to 118 pages of folio, contains the official minutes of the proceedings and the resolutions ultimately adopted, the latter being printed both in English and in French. The second part, with nearly 400 pages of folio, gives the complete reports and memoranda on the subject matter of the Commission as presented by the countries represented. These relate to the area and location of poppy cultivation, the manufacture and distribution of opium, the restrictions governing its importation and exportation in the countries affected; they relate also to the pharmacy and other laws regulating the sale of morphia and other derivatives and compounds of opium.

The following are the Governments which were represented: The United States of America (3 delegates), Austria-Hungary (1), China (4), France (3), Germany (2), Great Britain (5, including 1 representing Canada). Italy (1), Japan (3). the Netherlands (2), Persia (2), Portugal (2), Russia (1), and Siam (3). The British delegates were the Right Hon. Sir Cecil Clementi Smith, G.C.M.G., who has had considerable administrative experience in the Far East; Sir Alexander Hosie, H.B.M. Consul General; Mr. William Lyon Mackenzie, C.M.G.; Mr. James Bennett Brunyate. acting Financial Secretary to the Government of India; and Mr. Robert Laidlaw, M.P. The British delegates were assisted by two assessors—namely, Mr. Warren D. Barnes, Secretary for Chinese Affairs, Straits Settlements and Federated Malay States; and Mr. Cecil Clementi. Federated Malay States; and Mr. Cecil Clementi, Assistant Colonial Secretary, Hong-Kong. Of the total 32 delegates only four were medical men-viz., Dr. Hamilton Wright, one of the American representatives, who we believe was formerly engaged as director to the Medical Research Institute at Kuala Lumpur, Federated Malay States; Dr. Y. Tahara, director of the Imperial Hygienic Laboratory, Tokio; Dr. T. Takaki, director of the Medical School and Chief of the Sanitary Bureau of the Government of Formosa; and Dr. Hsü-Hua-Ching, President of the Army Medical College and Expectant Taotai of Chihli. The delegations which took the largest share in the proceedings of the Commission were the American, the Chinese, the British, and the Japanese; but the two nations chiefly concerned in the proceedings were the Chinese and the British. As the opium question, in our opinion, is very largely a medical one, it is to be regretted that Britain did not adopt the same course as America, Japan, and China, and appoint at least one medical expert among its representatives. At the opening meeting, at the close of the Viceroy's address, the chief French delegate made a direct application to him that the official language of the Commission should be French, but the Viceroy entirely ignored the request and left the meeting without giving an answer. Ultimately it was decided to

The Commission chose as its chairman the chief American delegate, the Right Rev. Charles H. Brent, D.D., Bishop of the Philippines, who, it may be mentioned, acquitted himself admirably in the difficult position which he was called upon to hold. It appears that for some considerable period negotiations had been in progress for the establishment of an International Commission on the Opium Question. At first it was proposed to restrict the nations invited to participate in the Commission to those which, through territorial possessions, commerce, &c., were actively interested in the opium question in the Far East. Later, however, the scope was considerably widened, and finally delegates were summoned from the 13 Powers already named. The Commission was intended to be one of inquiry, with a view to collect information and exchange views between the various Governments concerned, with the hope that this might lead later to

make English the official language of the proceedings.

¹ Report of the International Opium Commission, Two vols, London: P. S. King and Son. 1909. About 500 pages. Price 10s. net.

the holding of an International Conference on the Opium Question. The chairman of the Commission at the beginning of the deliberations expressed the hope that the resolutions passed would be unanimous; that the recommendations would be of a practical, broad, and wise character; and that before coming to any decision the whole question would be studied from all its aspects—moral, economical, commercial, and diplomatic. We learn with some regret that the views of this broad-minded cleric upon the attitude to be adopted in examining this difficult question have not given satisfaction to a section of the more irreconcilable anti-opium enthusiasts in his own country and elsewhere. Before proceeding to propose and pass resolutions the various delegations put forward a brief statement of the opium question as it related to their own country or its dependencies. From what the chief Chinese delegates said it appeared that the national conscience of China has been recently awakened, and that there was a general movement on foot to rid the country, if possible. of the degrading opium habit. He made an impassioned appeal to the other nations to give their help in suppressing the abuse of opium in his country. Owing to the imperfect manner in which statistics are compiled in China it was not possible for him to give precise figures as to the number of persons who were addicted to the abuse of opium in the Chinese Empire, but it was safe to say that more than 25 per cent. of the adult population used opium habitually in excess. It was also impossible to state the amount of opium grown in China or the amount imported from India or elsewhere into the Empire, as much of it was smuggled into the country. A change was coming over the subject by the substitution of morphia, taken by the mouth or injected hypodermically, for opium smoking. Enormous quantities of morphia were now being imported clandestinely into China, the comparative cheapness of this drug (1 dollar's worth going as far as 3 dollars' worth of opium), the facility with which it can be obtained, and the ease with which it can be administered, all making it clear to the coolie that economy and convenience were attained by its use in place of opium. Morphia of Japanese origin could be sold cheaply, and consequently it had a virtual monopoly in Manchuria, the Yangtse valley, and other populous parts of China. A peculiar and recent phase of the opium question, especially in China, is the fact that nowadays, perhaps in response to the growth of public opinion against the opium habit, a large number of so called anti-opium remedies, chiefly in the form of pills, are in the market, and are sold to the public in large quantities. Unfortunately, these remedies for the most part contain morphia or opium in one form or another, and this been proved by analysis, so that the result is the substitution of oplum eating for oplum smoking. Although the oplum smoking divans have in many places been closed this cannot be regarded as evidence of diminution in the amount of misuse of the drug, for the victim of the habit can now drug himself at home without resorting to a divan at all. Another remedy named "Peking tea" is merely black tea impregnated with morphia. Although to some perhaps these so-called antiopium remedies may be taken in good faith with a view of casting off the yoke of the opium habit, nevertheless it is well known throughout China that these remedies are only substitutes for the opium pipe. Unfortunately, the demand for them is so great that many drug stores, native and foreign, are doing a lucrative business in making and selling these specifics. While the laws of China appear to be unable to deal satisfactorily with these "medicines" containing morphia, the selling of that alkaloid for illegitimate purposes is punished, when detected, by the penalty of The chief Chinese delegate went so far as to decapitation. assert that in Shanghai, where the commission was sitting, British, French, Austrian, and Japanese druggists, as well as others, were selling anti-opium pills which on analysis had been shown to contain morphia or opium. One particular pill of this sort manufactured by a Japanese firm commands the largest sale in China, and is carried to all the corners of that empire owing to the enterprise of its proprietors.

The evils, moral and physical, produced by the opium habit are universally admitted, and the Chinese delegation spoke in strong terms as to this. He said that Western China especially had been ravaged by this accursed habit. "Visit," said he, "the dismal and wretched hovels which

were it not for this opium would be happy homes; see the emaciated, depraved multitude of victims to this vice observe the abject poverty, and notice for the cause of it all the wide fields once covered with the waving gold of ripening grain now given over to the culture of the poppy. concluded his speech with a fervent request to his fellow delegates for help from their Governments towards crushing the opium curse in China. He asserted that the Chinese nation had at last awakened to its evils, and the sentiments of the people had been stirred as they had never been stirred before during 2000 odd years of history. All classes were united in the determination to get rid of the curse. China looked for the fullest assistance and cooperation of all civilised powers in her attempt to "throttle the opium evil." He hoped in conclusion that such restrictions of the existing treaties as might be found to hamper her efforts in dealing with this question would not be used to this end. The British chief delegate then pointed out that the task of prohibition of opium in India was impracticable in the near future, and he added that the British delegation was unable to accept the view that opium should be confined simply and solely to medical uses. He objected to the Chinese delegate's suggestion that England should abrogate its treaties with China on the opium question, but he affirmed that the British Government would strictly adhere to its agreement so recently made as in 1908 to restrict for the next ten years the importation of opium from India by 5100 chests annually into China until a fixed minimum of 16,000 chests a year was reached, notwithstanding that this arrangement would entail a heavy loss of revenue to the Government of India. The Japanese view was that the best and most practical way of dealing with the opium habit was by gradual abolition, so that men and women addicted to the vice might break off the habit with least inconvenience to themselves.

Ultimately, after the proceedings had lasted over 14 sessions, from Feb. 1st to Feb. 26th, and as a result of considerable discussion, the Commission passed a series of resolutions, having for their object the suppression of the morphia habit and the gradual eradication of opium-smoking. Other recommendations related to the correcting of the abuse of opium and its derivatives in foreign concessions and settlements in China, that there should be a revision of the existing system of regulations in countries where opium is not prohibited for other than medical purposes, and that each delegation should advise its own Government to investigate scientifically for itself the matter of anti-opium remedies and the effect of opium and its products. Finally, international coöperation was advocated to prevent the smuggling of opium into countries where a prohibitory law prevails.

The report is of special interest in view of the statement made by Sir Edward Grey in the House of Commons on Nov. 4th to the effect that the British Government was considering a proposal made to it by the Government of the United States that an International Conference on the Opium Trade should be held shortly at the Hague.

MEETING OF METROPOLITAN PRACTI-TIONERS AND THE DIRECT REPRE-SENTATIVES ON THE GENERAL MEDICAL COUNCIL.

DR. J. FORD ANDERSON presided at a meeting of the members of the medical profession who reside in London and its neighbourhood which was held under the auspices of the Metropolitan Counties Branch of the British Medical Association at the St. James's Vestry Hall, Piccadilly, W., on the evening of Nov. 22nd.

Dr. H. W. Langley Browne, who spoke first, after briefly sketching the history of the General Medical Council, whose position, duties, and possibilities, he said, were not fully understood either inside or outside the profession, proceeded to refer to an inconvenience in the arrangement of the medical constituency for election purposes. Each representative, he thought, should represent a division of the country and not the whole. At the time of the last election for Direct Representatives, although the clearest regulations were sent out, 1503 of the returned papers were invalid because they were inaccurately filled up. Out of a total number of 24,659 only 11,000 odd

were returned in the proper time and 11,000 odd were not returned at all. This had a bad effect, because it fostered the idea that medical men were apathetic with regard to their interests. The speaker then referred to the committee which the Council had appointed to inquire into unqualified practice in this and other countries. Lord Crewe, the Foreign Office, and the Colonial Office had rendered great help in this inquiry, with the result that a large amount of information had been obtained and a digest had been made which could be obtained at the offices of the Council. This inquiry showed that in almost every country except our own unqualified practice was not allowed to exist or was greatly restricted. He did not think there would now be much difficulty in getting the unsatisfactory Clause 40 of the Medical Act altered. The Local Government Board had sent out circulars to medical officers of health asking for information with regard to unqualified practice in their districts, but he thought that the general practitioners had better means of knowing the condition of things in their respective areas than medical officers of health, and he believed that in some cases the inquiry forms had been returned without investigation having been made.

Dr. H. A. LATIMER said that the limitations of the Council were not rightly understood, and he gave several amusing instances of irrelevant questions which were put to him when standing before his election by some of his constituents. The Act of 1858 was faulty and failed to protect the medical profession as it should do. Referring to the unsatisfactory nature of Clause 40 he said he knew of cases where masseurs and bonesetters had given evidence in courts of law as to injuries. The colonies were far ahead of this country in regard to the protection of the public and the profession, and the new colonial enactments of Bermuda, Newfoundland, and British Central Africa went further than any legislation in this country. Of late our legislators were becoming more careful of the health of the country. A Midwives Act had been passed which had been rather detrimental to the medical profession, but which in the end he believed would be beneficial for all parties. That was a great step in the right direction, but if the health of the country was to be properly safeguarded no unqualified person whatever should be allowed to practise. Although the Council had not been able to do much with regard to individual quackery, it had done something towards preventing what he called corporate quackery, for the charters of opticians and medical herbalists had been successfully opposed. A part of the lay press were responsible for the sale of many quack remedies, and it was significant that some newspapers had refused to advertise the publication relating to proprietary remedies which had lately been issued by the British Medical Association. The Council as a body kept a very jealous eye upon medical education. The penal work of the Council, under the able guidance of its distinguished presidents, of whom Sir Donald MacAlister was not the least, had been so carefully done that attempts to upset it had almost invariably failed in the courts. He thought that the Direct Representatives had been successful in doing the work they were required to do, and an additional representative had been granted. With regard to the method of electing Direct Representatives, he was strongly in favour of creating con-

Dr. L. S. McManus, after paying a tribute to the able leadership of Dr. Langley Browne, said that the constitution of the Council was radically wrong, and was likely to remain so unless pressure were brought to bear from outside. The representatives of the corporations were not in touch with those whom they were supposed to represent. He briefly sketched the way in which penal cases were dealt with, remarking that, contrary to the general idea, the Council always leaned to the side of leniency. Referring to the method of electing representatives he said that England should be divided into three districts, north, middle, and south, and Wales should have the fourth representative. There should be legislation which would allow the Council to deal with quacks of all sorts. The watchword of the profession should be cooperation and organisation, things which it had lacked in the past. The medical profession ought to be represented in Parliament by medical men. If such had been the case would any Cabinet Minister have dared to put that objectionable clause in an Act requiring medical men to be fined if they failed to notify a birth within 36 hours?

Dr. MAJOR GREENWOOD asked for some expression of

opinion from the Direct Representatives on the Poor-law Commission report.

Dr. LANGLEY BROWNE said that his sympathies were to a large extent with the Minority Report, but that he was not prepared at the present moment to make a statement with regard to the matter.

A very brief discussion took place with regard to prescribing chemists, Dr. G. A. HERON remarking that he had interviewed many of the leading chemists who had told him that they were quite willing not to prescribe if medical men would undertake not to dispense.

The CHAIRMAN, reading a question that had been handed up to him, asked Dr. Latimer whether there was an early prospect of suppressing the sale of patent drugs.

Dr. LATIMER thought that at present it was impossible, but that much might be done by requiring their exact composition to be stated on the label. The public would then be careful not to pay 1s. $1 \pm d$. for a box of pills which cost $\frac{1}{4}d$.

The proceedings terminated with a vote of thanks on Sir Victor Horsley's proposal, to the three representatives for their attendance at the meeting.

ASYLUM REPORTS.

City of Cardiff Mental Hospital (Report for the Year 1908).—The total number of cases under treatment during the year was 764, this being also, as the hospital is a new one, the number of admissions. The discharges amounted to 49, and of these 28 were recovered. The deaths numbered 31, and necropsies were held in 30 cases. Upon Dr. Edwin Goodall has fallen the brunt of the work in the preparation of this hospital for the reception of mental patients, and the careful planning and organisation which have been devoted to it are characteristic of modern methods utilised and developed by a physician who has appreciated their enormous value. We cannot do better than quote from Dr. Goodall's report. "The institution is equipped much above the average in respect of scientific apparatus for clinical and pathological research. Such equipment is necessary in every hospital for mental diseases if the medical spirit, without which these institutions would rank merely as places of detention, is to be fostered, and young medical men of a desirable stamp are to be attracted. More than ever is it incumbent to have such in a mental hospital in touch with a town possessing medical laboratories and trained workers in all departments of medicine, which provides post-graduate instruction, and which aims at possessing a complete medical school." When we read of this or that asylum having a remarkably low rate of maintenance, we are not, therefore, to envy that institution forthwith, and to set it up as a model to be followed. Before congratulating the authorities we require to be satisfied upon a few points. What, in brief, are their ideals? Is the institution merely a home of rest, where the "patients" are clothed, fed, and amused, where the medical service wholly or mainly consists in a perfunctory round, and attention to the "primæ viæ"; where employees, to whom courtesy accords the designation of "nurse," patrol the wards in the proportion of 1 to 10 or 12 patients? How many of the patients drift into dementia because they have not, for reasons of want of confidence, been sent in early enough, and because they have received no treatment worthy the name, in order that expenses may be kept down? Dr. Goodall is of opinion that if people appreciated that an extra 4d. per head per week or so meant to their relatives a better chance, better medical attention, more refined and skilled nursing, constant effort to prevent dementia and promote more rapid recovery, a putting off of the evil day of extensions to buildings, they would consider the extra expenditure not only justifiable but desirable and in the long run a real economy. Nothing could be better than that these objects should be the aim of every authority in lunacy in the country.

Suffolk District Asylum (Report for the Year 1908).—At this asylum the total number of cases under treatment during the year was 1100. There were 230 admissions. The discharges numbered 166, and of these there were 42 recovered. The recovery rate, calculated upon the net admissions, was 22.4 per cent. The death-rate, calculated on the average

number resident, was 12 per cent. Dr. J. R. Whitwell, who issues the report, states that of the total number of deaths 20 per cent. were due to some form of tuberculous disease.

THE JOHN HERBERT WELLS FUND.

THE following is the third list of subscriptions promised to or received by this fund, which is in aid of the widow and children of the late Dr. John Herbert Wells who died recently from the effects of an accidental infection contracted whilst preparing a vaccine from the glanders bacillus, with which he succeeded in curing his patient. (THE LANCET, Oct. 23rd, p. 1253.) Further subscriptions will be gratefully received by the Earl of Dalhousie and Mr. Julian G. Lousada, the honorary secretaries and treasurers of the fund, at 16, Old Broad-street, E.C., or by ourselves at this office:—

	£	8.	d.	1	£	8.	d.
Sir Henry Harben	100	Ö	ö	Mr. and Mrs. Morton	~		٠.
Mrs. T. Wharrie	100	0	0	Evans	2	2	0
Mr. L. E. Ralli	100	0	0	Mr. A. R. Wilson	2	8	0
The Earl of Dalhousie		_	_	Mrs. W. G. Raphael Mr. Henry Lucas	۷	2	0
(second donation)	75	0	0	Mr. Henry Lucas	.3	2	0
Members of the Stock				The Misses I. and H.			_
Exchange (per Mr. Edmund A. Smith)	- 04	17	^ '	Farquhar	- 2	2	0
Edmund A. Smith)	64		0	Mr. Geoffrey Bate	2	2	0
Dr. A. D. Waller		10	0	Mrs. Howard Hayward	2	0	0
Dr. James F. Goodhart	10	10	0	Mr. Isidor Morse	- 4	0	0
Mr. W. H. Clayton Greene	10	10	0	O. W. L. H.		ő	ŏ
Mr. C. Montague Lush,	10			Mr. Louis Davidson		ő	ŏ
K.C.	10	10	0	Mrs. E. Farqubar	2	ŏ	ŏ
Mr. W. K. D'Arcy	10	10	ō.	Mr. J. Waley Cohen	ī	ĭ	ŏ
C. W. C	10	0	0	Mrs. Rhodes	ī	ī	Ú
Mrs. Martin	10	0	0	Miss Eleanor Bairdsmith	1	1	0
Mrs. Martin The Misses Bayly	10	0	0	X	1	1	0
Mrs. Bischoffsheim	10	0	0	Mr Claud Wookee	1	1	0
Dr. D. B. Lees Mr. E. L. de M. Mocatta	5	5	Õ	Dr. May Thorne	1	1	0
Mr. E. L. de M. Mocatta	5	5	0	Mrs. Hextall	j	1	0
Mrs. Annie Forster	5	5 5	0	Mr. P. R. Loewi	1	1	0
Mrs. Faithfull Mesars. G. Ellissen and	0	Э	0	Mr. G. L. Jacobs Mr. J. F. Hall	1	1	0
Co	5	5	0	Mr. J. F. Hall Mrs. Carden	i	1	ő
Mr. Arnold D. Blyth	5	5	ŏ	Dr. R. H. Urwick	i	1	ŏ
Mr. L. E. Raphael	5	5	ŏ	Dr. R. H. Urwick Mr. Henry Wren	i	ì	ŏ
Mr. R. Wayley Cohen	5	5	ŏ	Mr. Raleigh B. Phillpotts	ī	ī	ŏ
Mr. L. E. Raphael Mr. R. Wayley Cohen Mr. J. Moulton	5	5	Ō.	Mr. Henry Crouch	ĩ	i	ŏ
Honourable R. Oliver	5	5	0	Mr. H. R. C. Wild Mr. F. R. Mallet	1	ī	0
Mr. Meyer A. Spielmann	5	5	0	Mr. F. R. Mallet	1	1	0
Major-General H. P.	_	_	_	Mrs. Frede. Weatherall	1	1	0
Ewart	5	5	0	Mr. C. J. Barry Dr. F. A. Hyne Mr. J. H. Greener	1	1	0
Mr. W. B. Peat Mr. Wm. C. Smale	5	5	0	Dr. F. A. Hyne	1	1	0
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Mr. Otto Gutekunst Captain G. A. Webbe	5	ŏ	ŏ	Mr. M. D. Hill	í	i	ő
J. E. L. C	5	ŏ	ŏ	Lady Spielmann	i	î	ŏ
Mr. Claude G. Montefiore	5	Ō	0	Mrs. Annie T. Banning	ĩ	í	ŏ
Earl St. Germans	5	0	0	Dr. Bigger	1	1	0
Lady Swaything	5	0	0	Mr. T. Colver Fergusson	1	1	0
Messrs. Francis and	_	_		Mrs. W. Bailey	1	1	0
Praed	5	ŏ	ŏ	F. W	1	1	0
Mr. M. Handfield-Jones	5	0	0.		1	1	0
Mrs. Petherick	5	ő	Ö.	Mr. Lewis Schloss G. T. C	1	1	0
Anonymous	5	ŏ	ŏ	Dr. W. Haward	i	i	ŏ
Miss E. E. Scott	5	ŏ	ŏ	Mr. F. H. Goldschmidt	i	ī	ŏ
Anonymous	ž		ŏ	Mr. P. M. Hitchins	î	î	ŏ
Mr. L. S. Dudgeon	3333333	3333333	0	Dr. Harold Van Praagh	ī	ī	ō
Mr. Turner Henderson	3	3	0 -	Major Caleb Collins	1	0	0
Mrs. F. L. Crutchley	3	3	0,	Miss S. Maude	1	0	0
Mr. L. Floensheim	ó	3	0	Mr. W. Gillett	1	0	0
Mr. F. A. Hillard	3	3	0	G. H. B Mr. A. C. Pirie	1	Ŏ	0
Mr. F. A. Ilillard Mr. Walter E. Rubens Mr. E. S. Kadoorie	3	ő	0		1	0	0
Rev. and Mrs. W. D.	٠	٠	0	Mrs. K. Hetherington	î	ő	0
Scott	3	0	0	Mr. E. W. Matthews	i	ŏ	0
Dr. R. Hutchison	2	ž	ŏ	Miss E. L. Baker	î	ŏ	ő
Mr. and Mrs. Perrin	2	2	Ŏ	Capt. F. H. Tubb	ī	ŏ	ŏ
Mr. John H. Morgan	2 2 2	2	0	Reader of Spectator Mr. A. H. Brown Mr. W. Rochfort	ī	0	0
	2	2	0	Mr. A. H. Brown	1	0	0
Mr. H. B. Beddington	2	2	0	Mr. W. Rochfort	1	0	0
Miss C. L. L. Passy	2	2 2	Ŏ	Mr. Eyre Crowe	1	0	0
Mrs. Rebecca Henriques	2	2	0	Dr. Derbyshire	1	0	0
Mr. F. Morton Mr. F. J. Fidler	2 2 2 2	2	0	Mr. E. Dreyfus Mr. R. Hartindale	1	0	0
Mr. F. J. Fidler Mr. H. Gaselee	5	2 2	ŏ		1	ň	ő
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In addition to the above, many smaller amounts have also been promised or received.

UNIVERSITY COLLEGE, LONDON.—The new botanical laboratories at University College (University of London) will be opened on Friday, Dec. 17th, by Dr. D. H. Soott, F.R.S. The Vice-Chancellor (Professor M. J. M. Hill) will preside. Applications for tickets of admission should be made to the Secretary, University College, London, W.C.

THE

MEDICAL PROFESSION AND MUNICIPAL HONOURS.

THE following members of the medical profession have been elected or re-elected to the mayoral chair. Brief notes of their medical and municipal careers are given:—

Aldeburgh.—Mrs. Elizabeth Garrett Anderson, M.D. Paris, L.S.A., who last year was honoured by being the first lady mayor to be elected under the Act of 1907, which admitted women to town councils, has been re-elected Mayor of Aldeburgh. She obtained the diploma of L.S.A. in 1865, and graduated in the University of Paris in 1870. In 1866 she became senior physician to the New Hospital for Women, and subsequently consulting physician. She was also dean and lecturer on medicine at the London School of Medicine for Women and visiting physician to the East London Children's Hospital.

Lymington.—Mr. Edward F. Chinery, F.R.C.S. Edin., M.R.C.S. Eng., L.S.A., the Mayor of Lymington, received his professional education in Edinburgh and London. He became a Fellow of the Royal College of Surgeons of Edinburgh in 1880. He practised at Lymington for 38 years, retiring in 1906, and has since spent his well-earned leisure in visiting various parts of the world. He is an ex-chairman of the Southampton branch of the British Medical Association and has been a justice of the peace for Lymington for some years.

Montgomery.—Mr. Nicholas Watson Fairles-Humphreys, M.R.C.S. Eng., L.S.A., who has been re-elected Mayor of Montgomery, was born in 1837 and studied medicine at St. Bartholomew's Hospital. In 1885 he was elected alderman for the borough of Montgomery and has been 11 times mayor. He is a justice of the peace for the county of Montgomery, was high sheriff in 1882-83, and has been a county alderman since 1889. His grandfather, Nicholas Fairles, justice of the peace for the county of Durham, was the originator of the lifeboat movement and chairman of the first committee.

Newark.—Mr. F. H. Appleby, M.R.C.S. Eng., L.S.A., J.P., the Mayor of Newark, was a student of University College, London, and went to Newark 44 years ago as house surgeon to the hospital. He has since practised in partnership in that town, and is now the *doyen* of the profession in Newark and senior honorary surgeon of the hospital. He has done excellent work as lecturer and examiner to the St. John Ambulance Association, and in recognition of his services was appointed Honorary Associate of the Order of St. John of Jerusalem. The Volunteer movement has also commanded his active sympathy. He joined the 4th Notts as surgeon in 1884 and gradually rose to be senior medical officer of the North Midland Brigade, ranking as Brigade-Surgeon-Lieutenant-Colonel. On the formation of the Territorial Forces he was appointed a military member of the County Association and is Lieutenant-Colonel of the Royal Army Medical Corps, T.F., at the present time. He has also received the V.D. The new mayor has been a member of the town council for 19 years and has done good work on the sanitary committee, of which he is chairman, and also in connexion with the isolation hospital. Ten years ago he was unanimously called to the office of mayor, which he filled with success, as is shown by his re-election. Besides being chairman of the free library committee and the museum committee, Mr. Appleby is connected prominently with several educational undertakings in the borough over which he presides.

Oswestry.—Mr. R. de la Poer Beresford, M.D. Glasg., L.R.C.P., L.R.C.S. Edin., L.R.C.P. Lond., V.D., has been elected Mayor of Oswestry after having served his borough in the capacity of medical officer of health for 42 years, which makes him possibly the senior medical officer of health in England. He is the senior surgeon to the Oswestry Hospital and Dispensary and to the Ellesmere Cottage Hospital, and surgeon to the Cambrian Railway Company. He now holds the rank of Colonel, R.A.M.O., T.F., having received his first commission in the Volunteers in 1887.

St. Albans.—Mr. Eustace H. Lipscomb, M.B., B.C. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., the Mayor of St.

Albans, commenced his medical training at Caius College and Addenbrooke's Hospital, Cambridge. He subsequently entered Guy's Hospital and after holding a resident appointment at the East London Hospital for Women and Children at Shadwell he joined his father, the late Dr. J. T. N. Lipscomb, and Mr. H. Leslie Bates in partnership in 1888. He has been an honorary medical officer of the St. Albans and Mid Herts Hospital since 1890 and medical officer to H.M. Prison at St. Albans since 1893. On the death of his father in 1898 he was put on the commission of the peace for St. Albans. He is a governor of the St. Albans Grammar School and a trustee of several local charities. It is interesting to note that Dr. Lipscomb's grandfather, Mr. John T. Lipscomb, who died in 1869, was twice mayor of the town—namely, in 1819 and 1836—and that his father was mayor in 1870.

Wolverhampton.—Mr. John Grout, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., the Mayor of Wolverhampton, began his medical career as a pupil of Dr. Russell Talbot, who was at the time medical officer of health of Bow and Bromley. He afterwards entered as a student at Queen's College, Birmingham, and in due course became qualified as L.R.C.P.. L.R.C.S. Edin., after which he commenced practice in Wolverhampton. He joined the town council seven years ago and has always taken a keen interest in municipal affairs. He is a member of several committees and is also a member of the South Staffordshire Small-pox Board. He is one of the honorary surgeons to the Wolverhampton and District Hospital for Women.

MEDICINE AND THE LAW.

The Workmen's Compensation Act.

It is not perhaps surprising that the term "accident" within the meaning of the Workmen's Compensation Act should still be the subject of frequent discussion in the Court of Appeal. In a recent number of the Law Reports there appears a case in which the question was whether a man who died from aortic aneurysm was the victim of an accident. It appeared that while engaged in tightening a nut with a spanner and pressing down the spanner he suddenly fell dead. A post-mortem examination showed that he was suffering from a very large aneurysm of the aorta, that he died from rupture of the aorta, and that the rupture might have been brought about by very slight exertion. county court judge found that death was caused by a strain arising out of the ordinary work of the deceased operating upon a condition of body which was such as to render the strain fatal. It was held that this was an "accident' within the meaning of the Act. In giving judgment the Master of the Rolls said : " Every man brings some disability with him. Any exertion or any external action which might have been entirely innocuous to a man in good health might produce most serious results to a man bringing with him some disability. This man brought with him a disability of a serious nature, an aneurysm, which I quite agree might have caused his death at some time or other without an exertion, usual or unusual. But here we have this facta strain in the course of the ordinary discharge of his duties from which the man dies." Quoting Lord M'Laren, he continued: "If a workman in the reasonable performance of his duties sustained a physiological injury as the result of the work he is engaged in, this is an accidental injury in the sense of the statute." Another case, reported in the same number of the Law Reports, raised the question as to what constitutes "refusal" by a workman to undergo medical examination. The Act provides that a workman who is receiving weekly payments must, if so required by the employer, from time to time submit himself for examination by a duly qualified medical practitioner, provided and paid by the employer. If the workman refuses to submit himself to such examination or in any way obstructs the same, his right to such weekly payments shall be suspended until the examination has taken place. In the case under notice a medical man, instructed by the employers, asked a workman in receipt of weekly payments under the Workmen's Compensation Act to submit himself to examination. The man answered that he had no objection provided his own medical man was present. It was held that he had not "refused" within the meaning of the section. Cases of refusal to submit to operation, where it is advised for the

remedy of the condition, continue to occur, and each such case must bring its own peculiar difficulties. The settled law upon the question whether an injured workman is bound to submit to an operation is well illustrated by a recent case in the Court of Appeal. A seaman had his fingers burnt. One of them became septic. After about four days the ship's doctor lanced it. The next day the same doctor suggested an operation which would have involved two or three incisions being made in the finger. This the applicant refused, with the result that he finally lost the finger. The county court judge was of opinion that the man might have perfectly well undergone the operation, and that he might thus have been cured; but having regard to the fact that another doctor had expressed the view that an operation would not have saved the finger, he could not say that the applicant was unreasonable. In these circumstances he felt bound to make an award which has been affirmed by the Court of Appeal.

The London Hygienic Institute Again.

Comment was made in THE LANCET of Oct. 23rd, p. 1236, upon an action in which damages were recovered against the "London Hygienic Institute" for injuries sustained by a plaintiff, 23 of whose teeth had been extracted at one sitting by an unqualified person employed to practise dentistry by the defendants. Since then yet another action has been brought against the same defendants upon similar grounds, and after being partly heard has been settled upon terms which were not disclosed. This second trial does not seem to demand any further comment upon the methods of the "institute," which appear to have been substantially similar upon the two occasions. In the second case the plaintiff, a woman, had come up from the country to be treated. According to her story an employé of the defendants a man who was not qualified, save by seven years' "experience" in pulling out teeth, advised her to have all her teeth removed and extracted five on the first day, injecting cocaine into her gums, and 11 on the second, after which she suffered severely from cocaine poisoning. The operator in question denied in the witness box that he had advised the extraction of so many teeth at one time and declared that the patient had herself insisted on it. The throwing of the blame on the patient for a matter which should and would be decided by a qualified practitioner is characteristic of this kind of case and the attempted justification employed. The operator's explanation was that the patient desired to have her teeth extracted: that he did not wish to take out so many as 11 on the second day, but that she said that she wished to return home; that he was allowed no discretion; and that, as he was in the hands of his employers, complaint from the patient that he had refused to operate when she was willing to submit would have lost him his situation. He also said that he operated on an average upon 35 patients in a day, working sometimes for 12 hours with an hour's interval, and he excused himself for not having given the plaintiff an antiseptic mouth wash by saying that he had no time to do so, as any delay over a patient meant the prolonging of his day's work. The consideration of the evidence at these two trials is recommended to foolish persons who may think of visiting the "London Hygienic Institute," or any similar establishment where dentistry or medicine is practised by unqualified persons.

OPIUM SMOKING IN CHINA.—Mr. G. M. H. Playfair, British Consul at Foochow, in his annual report to the Foreign Office, after describing reforms that have been effected in educational and other matters, remarks that "another national movement of an extraordinary nature is what rulers and people have done to demolish the national vice of opium smoking. The stimulus came from above in the form of an Imperial edict, but it is doubtful whether even a decree of the Emperor would have done effectual work had not the people shown they were heart and soul in the crusade, and that they were determined the mighty enterprise should succeed. It is still too early to pronounce whether China has succeeded in her endeavour, or, indeed, to be absolutely certain that she is honest in her wish to see the last of the produce of the poppy. But there is, at least in this part of China, evidence that rulers and people are sincere, for streets of opium shops have been closed and myriads of pipes and other smoking paraphernalia have been committed to the flames."

Public Bealth.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

The City of Cape Town.—Dr. A. Jasper Anderson is unable to estimate the population of this important city with any degree of accuracy, as great changes have taken place since the date of the last enumeration in August, 1904, but there is no doubt, he thinks, that the population has undergone a decrease. A large number of unmarried Europeans in the prime of life have left the country, and some of the coloured People have gone to other parts of the colony or for German South-West Africa in search of work. Since the census year there has been a gradual decrease in the number of births amongst Europeans each year, and the births for 1908 numbered 791, as compared with 1020 in the census year. There has also been a slight decrease in the number of births amongst the coloured population. Dr. Anderson's rough estimate of the present population of the city is 65,710, the Europeans being a little in excess of the coloured Of course, with this uncertainty as regards the population the several rates must have a greatly impaired value. The birth-rate of Europeans is estimated at 23.29, amongst the coloured population at 51 38, a difference upon which much could be written did space allow. Amongst the Europeans the percentage of illegitimate births to total births was 7.98; amongst the coloured it was 22.79. Turning now to the death-rate, we find that the corrected European rate was 14 16 per 1000, as against a rate of 35 91 for the coloured. The infantile mortality of both white and coloured has very materially diminished within recent years, the average rates for the last four years being 103 3 amongst the Europeans and 227 4 amongst the coloured per 1000 births respectively. Much useful work is being carried out in Cape Town with reference to the control of infantile mortality. Scarlet fever is, Dr. Anderson reports, mainly confined to Europeans, but the coloured are not, it appears, by any means absolutely immune, so far as can be judged from the figures in the report. For instance, in 1908 there were 80 cases with 4 deaths, which is a rather high fatality rate. Dr. Anderson regards the relative immunity of the coloured people as one cause of the spread of the disease; that is to say, the cases are mild and unrecognised, while the difficulty of discovering the rash on coloured skins further accentuates the problem. Puerperal fever claims many victims amongst the coloured population, and Dr. Anderson advises that the midwives should now be registered and regulated. Although tuberculosis is compulsorily notifiable in Cape Town, and the notification appears to be working fairly well, a considerable number of cases both amongst the white and coloured people die unnotified, a circumstance which is explained by the statement that the disease was only discovered just before or after death. Dr. Anderson suggests the foundation of a dispensary where early cases could be diagnosed and assistance rendered. The water-supply of Cape Town is from springs on Table Mountain, but there are still large storage tanks in connexion with each house, of which Dr. Anderson naturally disapproves, and which are soon to disappear. The water at its source is reported to be remarkably pure. Dr. Anderson strongly urges the erection of a municipal abattoir for Cape Town, as by the present arrangement it is impracticable to inspect the meat consumed in the town.

REPORTS OF SCHOOL MEDICAL OFFICERS.

The City of Manchester. - The sixth report of the education committee of this city relates to the year 1907-08; that is to say, to a period antecedent to the operations under the new regulations of the Board of Education. A special interest, therefore, attaches to the report before us in that it shows what the practical people of Manchester, with their strong humanitarian instincts, were doing before Parliament imposed upon the local education authorities the duty of medical inspection. This report, which embodies that of Dr. A. Brown Ritchie, the school medical officer, contains a great deal of information which is of much interest to all social reformers, but we can only touch upon such portions of it which have a direct or indirect bearing upon physical health. Not least amongst these subjects comes that of domestic economy, since it is obvious that no small amount. As to this important but difficult question of treatment, the

of the death- and sickness-rates amongst the poorer classes is due to ignorance as to the dietetic value of foods and as to the proper manner of their preparation. Consequently, it is gratifying to learn that there are now in Manchester three housewifery centres whereat the teaching of cookery, laundry work, and domestic economy to girls is undertaken. During the period to which the report relates 7108 children were under instruction in cooking, 1307 in laundry work, and 192 in housewifery, while practical instruction in the feeding and tending of infants was given to 7267 girls.

Physical exercises under the supervision of an experienced attendant are given to the children in all the schools of the city, and the school playgrounds at several centres are available for the recreation of children out of school hours. The bathing of school children in the public baths is encouraged through an arrangement with the baths committee of the city council, by means of which children from the elementary schools are admitted to the second-class baths without payment when under the charge of a teacher, and free lessons in swimming are given. During 1907-08 as many as 611,612 visits were made by children to the baths, and of these 417,126 were free. The number of visits in 1897 was 133,152. With respect to the provision of country schools for city children, concerning which a good deal is being heard at the present time, it will come as a surprise to many people who have not followed events in Lancashire to hear that such a school was established five years ago by a voluntary committee at Mobberley in Cheshire. The cost of this building was mainly borne by Mr. Herbert Philips of Macclesfield. This school receives relays of children from April to October from the elementary schools in the poorer districts of Manchester and each batch stays about a fortnight, the pupils being accompanied by their ordinary day school teachers, and taught, boarded, and lodged during the period. Nothing is charged except the local habitation of the children. This scheme was approved by the Board of Education about four years ago and the attendances of the children at the county school are duly credited as attendances. Each child pays the nominal sum of 7s. for the fortnight's stay, the balance of the cost being met by voluntary contributions. The experiment has proved a remarkable success, and through the generosity of Mrs. Herbert Philips and others, as well as by the coöperation of the education committee, the dormitories have been extended to accommodate 128 beds, and the site, which has been increased to 17 acres, has been transferred to the city council. Special provision is also made by the education committee for afflicted children, and the report under review contains an instructive account of the details. The actual work of the medical inspection of children under the new regulations only commenced in February, 1909, and the staff now consists of a school medical officer and three male and one female assistant medical officers, each having an allotted district and devoting full time to the work, and, in addition, one male part-time assistant medical officer specially engaged in infectious diseases work. There are also five school nurses one to each medical officer. It is estimated that 18,000 children-i.e., 11,000 of 5 years old and 7000 of 13 years old—out of a total school population of 110,000 will have to be examined during 1909—i.e., during the current year. Although routine medical inspection under the new order of things has but just commenced in Manchester, a perusal of the medical officer's report shows what extremely valuable work has already been carried out in this city in reference to infectious diseases, eyesight, hearing, and the like; while the work done by the school medical officer as regards the provision of meals to necessitous children shows how very markedly the condition of the children has improved with increased sustenance. Lectures on hygiene to pupil teachers were given by the medical officer and lectures to parents were delivered by certain of the school teachers.

The County of East Sussex .- The school medical officer of this district is Mr. A. G. R. Foulerton, the county medical officer of health, while the routine work of inspection is carried out by two assistant medical officers who each contribute a short report upon the work done in their respective districts. These officers devote nine days each fortnight to the duties of routine inspection and the tenth working day to ascertaining at the several schools previously inspected what steps have been taken by the parents to obtain treatment for their children. school medical officer points out that the fact of medical impection in no sense absolves the parent from the duty of obtaining treatment for his child; indeed, as he adds, the position has become emphasised by the subsequent passing of the Children Act, by means of which under Section 12 it is made an offence to fail to make provision for the medical treatment of a person between the ages of 14 and 16 years. As to this Mr. Foulerton observes that in the county here in question the parents may be divided into groups: (a) those who are both able and willing to provide all medical treatment necessary; (b) those who can provide what may be called ordinary treatment, but whose means fail when special treatment is in question; and (o) those parents who are unable to provide any sort of treatment for their children other than that which can be procured under the Poor-laws. For these last children the medical officer regards the voluntary hospitals as providing what is required, and in this connexion he suggests that subscribers to these institutions should place their letters of recommendation at the disposal of the medical inspection sub-committee. Although it may, this medical officer thinks, be advisable to establish school clinics or to provide otherwise for treatment in large cities, such provision in country areas is not necessary. Here in East Sussex the education committee intends to do nothing which will diminish the proper sense of responsibility which the parent should feel for his child.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 7566 births and 4606 deaths were registered during the week ending Nov. 20th. The annual rate of mortality in these towns, which had been equal to 12 0, 13 3, and 13 8 per 1000 in the three preceding weeks, further rose to 14.6 in the week under notice, and exceeded the rate recorded in any week since April last. During the first seven weeks of the current quarter the annual death-rate in these towns averaged 13.0 per 1000, and in London during the same period the rate did not exceed 12.8 per 1000. The lowest annual rates of mortality recorded in the 76 towns last week were 6.5 in Hornsey, 6.7 in Burton-on-Trent, 8.2 in Reading, and 8.6 in Bournemouth; the rates in the other towns. ranged upwards, however, to 20.8 in St. Helens, 21.1 in Birkenhead, 21.8 in Bootle, and 26.5 in Hanley. In London the recorded death-rate last week was equal to 14.7, showing a further increase upon the rates in recent weeks. The 4606 deaths registered in the 76 towns last week showed a further increase of 253 upon the numbers returned in the three preceding weeks, and included 281 which were referred to the principal epidemic diseases, against numbers steadily declining in the 12 preceding weeks from 849 to 261; of these 281 deaths, 73 resulted from diarrhoea, 69 from whoopingcough, 47 from diphtheria, 45 from measles, 28 from scarlet fever, and 19 from "fever" (principally enteric), but not one from small-pox. The 281 deaths from these epidemic diseases last week were equal to an annual rate of 0.9 per 1000, against 0.9 and 0.8 in the two previous weeks. No death from any of these epidemic diseases was registered last week in Reading, Devonport, King's Norton, Newport (Mon.), Bournemouth, or in four other smaller towns; the annual death-rates therefrom ranged upwards, however, to 2.7 in Merthyr Tydfil, 3.0 in West Bromwich, 3.2 in Northampton, and 3.8 in Hanley. The deaths attributed to diarrhoea in the 76 towns, which had declined in the 12 preceding weeks from 675 to 68, rose again last week to 73; the highest annual death-rates from this cause last week were 1 3 in Merthyr Tydfil, and 1.8 both in Aston Manor and in South Shields. The fatal cases of whooping cough, which had been 31 and 48 in the two preceding weeks, further rose last week to 69, and caused annual rates equal to 1.3 in Coventry and 1.5 in Middlesbrough. The 47 deaths from diphtheria also showed an increase, and included 16 in London and its suburban districts, 6 in Liverpool, 3 in Manchester and Salford, 3 in Bradford, and 2 both in Stockport and in Warrington. The 45 fatal cases of measles exceeded the number in any recent week, and caused the highest annual rates, equal to 3.0 in Hanley and 3.2 in Northampton. The 28 deaths from scarlet fever were fewer than in any recent week; 7 occurred in Birmingham, 6

in Manchester and Salford, and 2 in Bury, which were equal to an annual rate of 1.8 per 1000. The 19 deaths referred to "fever" were within one of the number in the previous week, and included 3 in Leeds. The number of scarlet fever patients under treatment in the Metropolitan Asylums and London Fever Hospitals, which had declined during the five preceding weeks from 2810 to 2624, had further fallen on Saturday last to 2606; 308 new cases of this disease were admitted to these hospitals during last week, against 336 and 284 in the two preceding weeks. The Metropolitan Asylums Hospitals contained 5 small-pox patients on Saturday last, an increase of of the 1363 deaths registered in London last week. Of the 1363 deaths registered in London last week, 283 were referred to pneumonia and other diseases of the respiratory system, against numbers increasing from 167 to 288 in the five preceding weeks; these 283 deaths were, however, 47 below the corrected average number in the corresponding week of the five years 1904-08. The causes of 40, or 0.9 per cent., of the deaths registered last week in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death registered last week were duly certified in London, Leeds, Bradford, Newcastle-on-Tyne, Hull, Nottingham, Leicester, and in 49 smaller towns; the 40 uncertified causes of death in the 76 towns last week included 8 in Birmingham, 5 in Liverpool, and 4 both in Sheffield and in South Shields.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 768 births and 708 deaths were registered during the week ending Nov. 20th. The annual rate of mortality in these towns, which had been equal to 12.9, 15.3, and 15.8 per 1000 in the three preceding weeks, further rose to 19 8 in the week under notice. During the first seven weeks of the current quarter the annual death-rate in these Scotch towns averaged 14.5 per 1000, and exceeded by 1.5 the mean rate during the same period in the 76 largest English towns. The annual death-rates last week in these Scotch towns ranged from 11.0 and 14.8 in Leith and Edinburgh, to 17.6 in Paisley and 24.9 in Glasgow. The 708 deaths from all causes in the eight towns last week showed a further increase of 142 upon the numbers returned in the three preceding weeks, and included 77 which were referred to the principal epidemic diseases, against 67 and 66 in the two previous weeks. These 77 deaths were equal to an annual rate of 2.2 per 1000; the mean rate from the same diseases last week in the 76 English towns did not exceed 0.9 per 1000. The 77 deaths from these diseases in the Scotch towns last week included 36 from messles. 12 from whooping-cough, 10 from diarrhea, 9 from scarlet fever, 9 from diphtheria, and 1 from "fever," but not one from small-pox. The fatal cases of measles which had been 9, 24, and 22 in the three preceding weeks, further rose last week to 36, of which 34 occurred in Glasgow and 2 in Edinburgh. The 12 fatal cases of whooping-cough also showed an increase upon the numbers in recent weeks, and included 10 in Glasgow. The deaths attributed to diarrhoea, which had been 10, 13, and 16 in the three preceding weeks. declined again last week to 10, of which 3 were returned both in Glasgow and in Aberdeen, and 2 in Dundee. Seven of the 9 fatal cases of scarlet fever occurred in Glasgow; and the 9 deaths from diphtheria included 7 in Glasgow and 2 in Edinburgh. The death from "fever," certified as cerebro-spinal fever, and occurred in Glasgow. The deaths referred to diseases of the respiratory organs in the eight towns, which had been 68, 108, and 115 in the three preceding weeks, further rose to 195 last week, and exceeded by 59 the number registered in the corresponding week of last year. The causes of 27, or 3.8 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0.9 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,142,308 persons, 596 births and 439 deaths were registered during the week ending Nov. 20th. The mean annual rate of mortality in these towns, which had steadily increased in the four preceding weeks from 14.8, to 19.2 per 1000, further rose to 20.0 in the week under notice.

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* Including membranous group.

During the first seven weeks of the current quarter the annual death-rate in these Irish towns averaged 16.9 per 1000, whereas the mean death-rate during the same period did not exceed 13.0 in the 76 largest English towns, and 14.5 in the eight principal Scotch towns. The annual death-rate last week was equal to 23.6 in Dublin (against 14.7 in London), 18.1 in Belfast, 21.9 in Cork, 23.0 in London-derry, and 17.8 in Limerick; the mean rate in the 16 smallest of the Irish town districts last week was equal to 18.5 per 1000. The 439 deaths from all causes in the 22 town districts last week showed a further increase of 10 upon the numbers in the four preceding weeks, and included 18 which were referred to the principal epidemic diseases, against 26, 21, and 20 in the three preceding weeks; these 18 deaths were equal to an annual rate of 0.8 per 1000; in the 76 English towns the mean rate from the same diseases last week was 0.9, and in the eight principal Scotch towns was 2.2 per 1000. The 18 deaths from these epidemic diseases in the Irish towns last week included 7 from diarrhæa, 6 from whooping cough, 3 from diphtheria, and 1 each from scarlet fever and "fever" (enteric), but not one either from measles or small-pox. The 7 deaths attributed to diarrhoea showed a further decline from the numbers in recent weeks, and included 2 both in Dublin and in Belfast. The 6 fatal cases of whoopingcough exceeded by 1 the number in the previous week; 4 occurred in Belfast and 2 in Dublin. Of the 3 deaths from diphtheria, 2 were returned in Dublin and 1 in Newtownards. The fatal case of scarlet fever occurred in Belfast, and that of enteric fever in Cork. The deaths referred to pneumonia and other diseases of the respiratory system, which had steadily increased from 50 to 88 in the four preceding weeks, further rose to 110 last week. The causes of 14, or 3.2 per cent., of the deaths registered in these Irish towns last week were not certified by a registered medical practitioner or by a coroner; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0.9 per cent., and in the eight Scotch towns the proportion was 3.8 per cent.

VITAL STATISTICS OF LONDON DURING OCTOBER, 1909.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 6.5 per 1000 of the population, estimated at 4,833,938 persons in the middle of the year; in the three preceding months the rates were 6.4, 5.0, and 7.1 per 1000 respectively. The lowest rates last month were recorded in Kensington, Hampstead, Stoke Newington, Holborn, the City of London, and Wandsworth; and the highest rates in Paddington, Finsbury, Bethnal Green, Stepney, Lewisham, and Woolwich. During last month 4 cases of small-pox were notified, of which 3 belonged to Stepney and 1 to St. Pancras. The prevalence of scarlet fever showed a marked decline last month; among the several metropolitan boroughs this disease was proportionally most prevalent in Paddington, Bethnal Green, Poplar, Lambeth, Lewisham, and Woolwich. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals at the end of last month was 2708, against 2628, 2329, and 2717 at the end of the three preceding months; the weekly admissions averaged 325, against 358, 274, and 394 in the three preceding months. Diphtheria was slightly more prevalent than it had been in the preceding month; this disease was proportionally most prevalent in Finsbury, Shoreditch, Deptford, Lewisham, and Woolwich. Metropolitan Asylums Hospitals contained 958 diphtheria patients at the end of last month, against 890, 795, and 901 at the end of the three preceding months; the weekly admissions averaged 119, against 107, 83, and 119 in the three preceding months. The prevalence of enteric fever showed a decline last month; the greatest proportional prevalence of this disease occurred in Holborn, Finsbury, Stepney, Poplar, and Battersea. There were 78 enteric fever patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 60, 55, and 75 at the end of the three preceding months; the weekly admissions averaged 11, against 7, 10,

and 13 in the three preceding months. Erysipelas was proportionally most prevalent in Hackney, Finsbury, Shoreditch, Bethnal Green, Stepney, and Southwark. The 19 cases of puerperal fever notified during the month included 3 in Wandsworth and 2 in Poplar. Of the 2 cases notified as cerebro-spinal meningitis 1 belonged to Battersea and 1 to Greenwich.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in institutions having been distributed among the several boroughs in which the deceased persons had previously resided. During the four weeks ending Oct. 30th the deaths of 4197 London residents were registered, equal to an annual rate of 11.3 per 1000; in the three preceding months the rates were 10.2, 10.5, and 11.5 per 1000. The lowest death-rates last month were 6.9 in Hampstead, 8.8 in Lewisham, 9.2 in Wandsworth, 9.3 in Deptford, and 9.6 in St. Marylebone and in Woolwich; the highest rates were 13.8 in Stepney, 13.9 in Bethnal Green, 14.1 in Southwark, 15.4 in Shoreditch, 15.6 in Bermondsey, and 16.0 in Finsbury. The 4197 deaths from all causes included 325 which were referred to the principal infectious diseases; of these, 1 resulted from small-pox, 32 from measles, 28 from scarlet fever, 38 from diphtheria, 44 from whooping-cough, 15 from enteric fever, and 167 from diarrhoea. The lowest aggregate death-rates from these diseases last month were recorded in Paddington, Westminster, Hampstead, St. Pancras, Stoke Newington, Holborn, Wandsworth, Deptford, and Lewisham; and the highest rates in Fulham, Finsbury, Shoreditch, Bethnal Green, and Poplar. The fatal case of small-pox belonged to Stepney. The 32 fatal cases of measles showed a decline of 25 from the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal in Stoke Newington, Shoreditch, Bethnal Green, Stepney, and Poplar. The 28 deaths from scarlet fever were 23 fewer than the corrected average number; the greatest proportional mortality from this disease was recorded in the City of Westminster, Islington, Bethnal Green, Bermondsey, Lambeth, and Lewisham. The 38 fatal cases of diphtheria showed a decline of 14 from the corrected average; the highest death-rates from this disease were recorded in Hammersmith, Fulham, Chelsea, Shoreditch, Stepney, and Southwark. The 44 deaths from whooping-cough were slightly fewer than the corrected average number; this disease was proportionally most fatal in Shoreditch, Bethnal Green, Stepney, Poplar, Southwark. Deptford, and Woolwich. The 15 deaths from enteric fever were less than one-half of the corrected average number, and included 2 belonging to Paddington, 2 to St. Pancras, and 2 The 167 fatal cases of diarrhoea were 115 to Battersea. below the corrected average number; this disease was proportionally most fatal in Fulham, Finsbury, Shoreditch, Bethnal Green, Poplar, and Bermondsey. In conclusion, it may be stated that the aggregate mortality in London last month from these principal infectious diseases was 37.3 per cent. below the average.

Infant mortality, measured by the proportion of deaths under one year of age to registered births, was equal to 118 per 1000. The lowest rates of infant mortality were recorded in St. Marylebone, Hampstead, Holborn, the City of London, Deptford, and Woolwich; and the highest rates in Kensington, Hammersmith, Finsbury, Shoreditch, Bethnal Green, Poplar, and Bermondsey.

PRESENTATION TO A MEDICAL MAN.—In addition to the case of eye instruments, field glass, and fountain pen presented to Mr. Randal Herley by members of the different departments of the Dewsbury and District General Infirmary, which we announced in The Lancet of Nov. 20th, p. 1558, our attention has been called to the fact that the members of the board added to the presents a large ophthalmic trial case.

Donations and Bequests.—The secretary of the National Hospital for the Paralysed and Epileptic, Queen-square, Bloomsbury, has received two anonymous gifts, one of £5000 to the special jubilee fund, and one of £2000 for the general fund.—Mrs. Wheeler has made a gift of £600 to the Earl of Beaconsfield Memorial Cottage Hospital at High Wycombe, in memory of her husband, the late Mr. Robert Drew Wheeler.

THE SERVICES.

ARMY MEDICAL SERVICE.

Colonel Owen E. P. Lloyd, V.C., to be Surgeon-General, vice W. Donovan, C.B., retired (dated Nov. 17th, 1909). Brevet-Colonel Tom P. Woodhouse, from the Royal Army Medical Corps, to be Colonel, vice O. E. P. Lloyd, V.C. (dated Nov. 17th, 1909).

ROYAL ARMY MEDICAL CORPS.

Lieutenant Colin Cassidy is seconded for service with the Egyptian Army (dated Oct. 14th, 1909).

INDIAN MEDICAL SERVICE.

If The King has approved of the following promotions among officers of the Indian Medical Service:—Majors to be Lieutenant-Colonels (dated Sept. 30th. 1909): Henry Bruce Melville, Joseph Charles Stoelke Vaughan, Alexander Leonard Duke, Joshua Chaytor-White, John Blackburn Smith, Henry Francis Cleveland, and Charles Henry Bedford. Lieutenant to be Captain (dated Sept. 1st, 1909): Shumshere Singh.

The King has approved of the retirement of the following officer:—Lieutenant-Colonel Julian Carter Carington Smith (dated August 7th, 1909).

TERRITORIAL FORCE.

Royal Army Medical Corps.

Eastern Mounted Brigade Field Ambulance: Meredith Sedgwick Doubble to be Lieutenant (to be supernumerary) (dated Oct. 30th, 1909).

London Mounted Brigade Field Ambulance: Major Martin Alfred Cooke, from the list of officers attached to units other than Medical Units, to be Major (dated June 20th, 1909).

Highland Mounted Brigade Field Ambulance: John Macpherson Grant to be Lieutenant (dated Oct. 19th, 1909).

3rd London (City of London) Field Ambulance: Lieutenant George L. L. Lawson to be Captain (dated August 22nd, 1909).

Attached to Units other than Medical Units.—Lieutenant-Colonel and Honorary Surgeon-Colonel Robert L. Sparrow resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated Oct. 31st, 1909).

THE SPANIARDS IN MOROCCO.

In the *Times* of Nov. 18th a special correspondent at Melilla, telegraphing on Nov. 17th, describes the hospital administration, which he says it is impossible to praise very highly. The main base hospital is at Malaga, where all, except dangerous cases, are shipped. At the advanced base hospital at Melilla the accommodation is inadequate. With the exception of the base accommodation and the forwarding of cases, the treatment of the sick and wounded is good and the surgery is beyond reproach. There has been much enteric fever, pneumonia, and dysentery, but malaria has not been so prevalent as was anticipated.

DEATHS IN THE SERVICES.

Deputy Inspector-General Thomas Secombe, R.N. (retired), at his residence in Granville Mansions, Torquay, on Nov. 19th, in his ninety-first year. He entered the Royal Navy as assistant surgeon in 1845, became staff-surgeon eight years later, and in 1867 was promoted to fleet-surgeon. In 1880 he retired with the rank of deputy inspector-general of hospitals and fleets. The deceased officer served as surgeon to the native levies during the Kaffir War of 1851; he was present at almost all of the skirmishes of this campaign (Kaffir medal). He was in charge of the field hospital at the taking of Rangoon (Burmese medal), and he also served in several of the boat campaigns (mentioned in despatches).

Lieutenant-Colonel Frederick James Crawford, I.M.S., on board the steamer *Herefordshire*, near Suez, on Nov. 5th, aged 45 years. He entered the service as assistant surgeon in 1887 and reached the rank of lieutenant-colonel in 1907. He was the principal of the Madras Medical College and had been district surgeon of Ganjam.

Correspondence.

"Audi alteram partem."

OSTEITIS DEFORMANS.

To the Editor of THE LANCET.

SIR,-In THE LANCET of Nov. 13th is an annotation on the subject of "Osteitis Deformans," wherein it is stated "that Sir James Paget first described that form of chronic inflammation of the bones which bears his name." in the year 1876, and his paper may be found in the volume of the Medico-Chirurgical Transactions of the following year. He described it as a rare disease and spoke of it as the first which had been under his care. He then gave an account of it and added others from various sources, and amongst them was one of my own in which I had taken specimens of the bones to the Pathological Society. The account is to be found in the Pathological Transactions for the year 1869. I called the case "osteoporosis," or spongy hypertrophy of the bones. I so named it because it was the word on the labels attached to some old specimens in the museum of Guy's, and which evidently belonged to a case of this disease, shown by the enormously thickened skull and the large and crooked long bones of the limbs. In giving my lectures in 1857 I commented on these bones and said I did not think they arose from an inflammatory process because I could find no new osseous tissue either on their surface or interior, and therefore I considered the name to be most excellent. I believe it was also used on the continent. When, therefore, an example of the same disease came under my own notice I called it "osteoporosis," and more especially as I discovered no new osseous tissue either as ostitis or periostitis. I think now a better name would be "osteoporosis deformans." I may add that in the second edition of my book on pathological anatomy I gave a description of this case. This was two years before the appearance of Paget's paper. I have given these particulars because this different name is the sole cause of my writing this letter. The patient came under my care from being called in by a medical man at Camberwell. The patient, a gentleman, aged 60 years, had consulted all the leading men in London, and he had also visited me. When he was too ill to leave home I was asked to see him occasionally. After his death his friends, knowing it was a rare and important case, gave me carte blanche to take away some of the bones for examination.

The report in the Pathological Transactions says that the post-mortem examination was made on Jan. 13th, 1869, and that I was assisted by Mr. Goodhart, house physician of Guy's Hospital, and he it was to whom I am indebted for the long description which he gave me. I wrote a few days ago to Dr. Goodhart at Portland-place, and he answers me on Nov. 14th by saying, "I remember the case well. I made the 'post-mortem' somewhere down in Camberwell with a man named Massey, and I brought away the vault of the skull, a femur, and some other things which ought to be in the museum. There are specimens in Guy's museum long before our time, and Paget summed up all the cases and called the disease 'osteltis deformans.'"

I may be allowed to say in conclusion that personally the question of originality is of very little moment and of no importance to most medical men, but there are those who are bibliographers and historians who would altogether miss the first account of the disease if they looked for its usual name. I am also instigated in writing for the sake of Dr. Goodhart, who was the first who carefully examined the bones and their structure, giving also their measurements and weights. I may add that Dr. Goodhart is quite ignorant of my writing this letter. I trust also that the throught will not arise in anyone that I am suggesting a dishonourable act on the part of Sir James Paget, for this would have been impossible for my old friend; indeed, his method was the usual one and the most correct—to take a number of cases of a remarkable disease, discuss its nature, and give it, according to his views, the most apposite name.

I am, Sir, yours faithfully,

SAMUEL WILKS.

Hampstead, Nov. 20th, 1909.

BRAIN AND MIND.

To the Editor of THE LANCET.

SIR,-I do not think Dr. Mercier's article on the above subject gets quite down to the fundamental problem. Brain is ultimately "matter" and mind is "mind." We do not, as Dr. Mercier says, know whether matter is real or is only an assumption, but for practical purposes we are bound to assume its reality. Accepting the assumption we are bound to agree to Hobbes's dictum that our senses are affected only by motions of matter, or perhaps more simply by motion. All speculations and judgments by which we reduce things to categories are therefore inferences from the stimulus of motions, the only perceptible differences being the diverse modes of the motion which impinge upon us. Natural science is pre-eminently the classification of impinging motions and generalisations based thereupon. One of these generalisations is our concept of "life."

Physics, including chemistry, reveals the law of proportion as between causes and effects; given the components the resultant can be calculated in advance; the motions of matter are one vast phenomenon of absolute mechanical predestination. But we also observe certain motions of matter which can only be regarded as evidence of self-determination; certain masses of matter exhibit motions which tend to self-preservation and are not accurately calculable. We say that the lumps of matter which exhibit this mode of motion are "alive." We might formally define the phenomena of life as "self-determined motion." But self-determination is flatly contradictory to the physical large of motion and so the definition is a contradiction laws of motion, and so the definition is a contradiction in terms: it is nonsense, or perhaps better, paradox. And yet it is true to the facts. The three hypotheses described by Dr. Mercier are, if this be right, merely attempts to reduce to logically consistent language phenomena which can be described only in terms of paradox. Such

attempts are necessarily doomed to failure.

The special phenomenon of a differentiated nervous system seems to me to be an irrelevancy. The neurons are only cells so shaped that juxtaposition to certain other cells can be attained in spite of anatomical distance. The problem of the relation of self-determination to material motion is essentially an intra- not an intercellular problem, and therefore is the same in a protozoon as in a vertebrate, and it would seem that the protozoon would be the better type to study on account of its simplicity, supposing the difficulties to lie in the phonomena. But it seems to me that they do not, but that the difficulty is subjective. "Mind" and "matter" or self-determination and motion are subjectively distinct and irreconcileable categories. Monists assert that they meet in a higher category, but that category has not yet been described. However, although we can have no inkling of the relation of these paradoxical phenomena (calling some of them "epiphenomena" seems to me no help at all), we know that there is relation. We know that mind can disturb the predestined order of motion, and that motion can affect mind; and within certain limits we know what the effect will be. We may therefore discover empirically the motions of matter which will impinge beneficially on a disordered mind, and the mental states which have an integrating effect on a disordered body. This for practical purposes is all we want to know.

Therapeutics is a sensible science not too proud to work machinery whose laws it does not understand.

I am, Sir, yours faithfully,

F. CLAUDE KEMPSON, M.B. Cantab. Demonstrator of Anatomy in the University of Cambridge

Manea Vicarage, March, Cambs., Nov. 15th, 1909.

To the Editor of THE LANCET.

SIR,—On reading Dr. Charles Mercier's interesting article in THE LANCET of Nov 13th it occurred to me that the attention of psychologists might be advantageously directed to the following suggestions as to the relation of matter to

It has been suggested that the brain is the organ by which the mind can "appreciably" affect matter. Might I by analogy explain what is meant? Take magnetism. If we had no iron, nickel, or cobalt available in this world the knowledge of magnetism would have been much less developed, because the earth's magnetism is not "appreciable"

to our unaided senses; a piece of copper, for instance, showing no appreciable change when rotated in the earth's magnetic field. It is perfectly practicable, however, by means of drawing out the copper to a fine wire and constructing with it various coils 1 to demonstrate to anyone the fact that the earth is a magnet. Thus we see that arrangement of material raises "inappreciable" effects to "appreciable"

Again, our skin is not conscious of light (heat rays should be removed by solution of alum screen), although there is a reaction, for pigment is slowly deposited. That is to say that light is not "appreciated" by our skin. The retina however, on account of its "peculiarity" of chemical and physical structure is able to appreciate light without artificial aids. Again, it is the chemical and physical constitution of certain cells in the tongue which enable taste to be "appreciated." We cannot taste with our hands! The same with sense of smell. Taking these last two senses, no other of our senses can discriminate the molecular constitution of substances, but the "peculiar" chemical and physical arrangement of "smell organ" and "taste organ" not only enables minute, almost incalculably small, particles of matter to be differentiated and their nature recognised, but renders even the internal arrangement of a molecule to be "appreciable." I may instance the different odours of the ortho-, meta-, and para-compounds, only differing in the positions of identical side-chains of the benzenering compounds.

Have I said enough to make clear the following-namely, that the brain with its "peculiar" chemical and physical constitution may be the organ for rendering "appreciable' the action of mind? Mind may be an existing "something." whether of the nature of light or magnetism or of attenuated matter. Perhaps there is a so-called "soul" which may be a perfectly real existing thing which, however, is not "appreciable," or rather does not "appreciably" affect matter except when the "peculiar" chemical and physical structure, the brain, is able to be affected, and when the nerves and muscles are functionally connected with the brain. Thus, magnetism is existent and all matter is affected minutely by magnetism, but it is only three metals and certain physical arrangements of other metals which

render magnetism "appreciable."

Again, light is existent and all matter is affected more or less, but it is the chemical and physical structure of the retina which renders it "appreciable." By analogy it is suggested, therefore, that the soul may be a thing which is in relation with the physical universe and probably can affect all matter to a very slight degree, but that as the brain has developed through the ages, its function as the "mind organ" has been the "motif," or, in other words, the path of progress. I myself would take the beginnings of the "mind organ" back to a very remote period as by analogy we refer the beginnings of our "light organ" to the black spot on the the amphioxus.
I am, Sir, yours faithfully,
R. O. T. EVANS. nervous system of the amphioxus.

Herne Bay, Nov. 14th, 1909.

To the Editor of THE LANCET.

SIR, -Dr. Mercier's article on this subject is very interesting, and, as a peaceless practitioner, one wishes for the time to treat all its many points with the thoughtful and critical consideration that they call for. The three cases that he claims as being on all fours, are they not rather at sixes and sevens? Dr. Mercier would have us believe that the colour of an object is not part of the object. Really the word "colour" stands for two separate facts. It has been supposed that colour means only the sensation caused by those attributes of any substance which produce the effects of red, green, &c., in the mind. But because we understand the method of the transmission of rays producing the sensation of blue, and because we know much of the mechanism of the organ concerned in the receptivity and something, too, of the organ employed in the interpretation of those rays, because we have some understanding of these things, what right have we to say that a lapis lazuli is not innately, intrinsically, and of itself in every degree of light of a blue colour whether it be beheld or not?

¹ A delicate galvanoscope can be constructed by suspended coils, no magnetic needle being required.

2 See experiments by Professor and Mrs. Ayrton.

It does not follow that because in respect to our know-ledge of a phenomenon we can point to a plus sign that therefore there exists as a consequence of that knowledge a minus sign in any portion of that phenomenon. The object is none the less coloured because we know the method of its appeal to the senses. The colour of an object (i.e., those attributes compelling the eye to a cognition) is undoubtedly in the object; the name of it, its memorial associations, and the accident of its observation only, belong to the individual seeing the object. Dr. Mercier means by colour apparently the phenomena of cognisance, whereas the word used to be, and may legitimately yet be applied to that characteristic of an object which compels its cognisance.

Is mind a function of the brain? Assuredly it is one of the functions of the neurons which make up the essential and distinctive part of the brain. Mind—which is perhaps more accurately and better expressed by the word "mentation." which, carrying with it fewer connotations, is therefore less confusing—has never been proved to exist apart from protoplasmic matter. Nothing like the same amount of proof is forthcoming with regard to mentation unconnected (in its origin and manifestation) with matter as exists of the intimate connexion of mentation with protoplasm. As regards the existence of mind apart from matter, the whole gamut of mental and physical phenomena has been gone through time and time again, without even the fourth-rate success of inferential proof drawn from the admittedly weak process of reasoning by analogy.

The importance of the absolute necessity of neurons to the phenomenon of mentation is in no way weakened by the fact that neurons perform duties which cannot be spoken of as mind effects. If Dr. Mercier admits that neurons functionate by receiving, storing, and liberating motions, and that, a step further, they do these things in a discriminatory manner, where is the difficulty in admitting several steps further in development-viz., the mentation of the lower animals? Admitting this, there can be no difficulty in associating the highest efforts of mentation with neurons, and with neurons alone. Certainly, the mentation of a Shakespeare is a different thing from the mentation of a low vertebrate. but the difference is only a difference in the degree of complexity. Given a higher complexity of tissue—a complexity which may be so infinitesimal in its details as to be unrevealable by any method at present at our disposal—a functional complexity must result which, increasing dynamically, may be even more distant from whatever unit might be adopted than 999 to the 999th power is from 1. A difference in the degree of complexity does not necessitate such a difference in kind as is implied when one admits discriminatory functioning of the neurons, but disallowing mentation as a functioning of the same nervous structures classes it as a universe to itself. Ex nihilo nihil fit, and if mind (or the mentation process) be disparate from all material things, whence does it originate? What platform does it operate from? If the brain be its station of arrival, where may we look for the station of departure, and by what lines has it travelled from the terminus it set out from?

The idea that mind is a thing apart from, and entirely independent of, matter owes its ready and unquestioned acceptance because it harmonises somewhat with the faith we have inherited from our forefathers. The scientific method is to work from the known to the unknown. It is unscientific (though as a metaphysical exercise highly entertaining) to form first a theory based in this instance on the crude theologies of early civilisations and then endeavour to handle facts so that they may support the hypothesis that harmonises best with these assertions of crude primal folkfaiths. The method that offers the most certain solution of the problems of brain and its mentation processes is to study them with the idea that mentation is a highly specialised nervous action, that nervous action is a function of neurons. that neurons are protoplasmic masses of a particular structure, and that the action or function which invariably accompanies that structure is due to that structural peculiarity. The proposition that mind is the resultant of structural peculiarity and environmental adaptation of certain elements in chemical and mechanical combination has never received its due attention as a working hypothesis. When propounded by the more matter of fact and practical of the school of materialists it was received with as much withering (if only scornful) treatment as Galileo had meted out to him. It may prove eventually to be the main index to that explanation of the connexion of mind with matter which Dr. Mercier somewhat pessimistically says will in all likelihood never be known.

Points which need working out in connexion with protoplasm are the proportions of negative and positive particles of electricity, the allotropic modifications of the elements composing protoplasm, the facetting of the molecules and possibly of the ions, the unexplored chemical combinations of carbon with water, &c. Any of these or all in varying degrees may be intimately and particularly concerned in the processes of mentation. The field which, however, offers the greatest finds for the present is subconscious mentation, the automatic digestion of facts without any conscious participation. In the meantime, while these fields are being worked, let us discuss the interesting points with which Dr. Mercier's article teems.—I am, Sir, yours faithfully.

J. Hambley Rows, M.B., C.M. Aberd. Bradford, Nov. 20th, 1909.

THE THERAPEUTICS OF SUGGESTION. To the Editor of THE LANGET.

SIR,—I was much interested to find that in your recent remarks on the therapeutics of suggestion 1 you so definitely differentiated between "suggestion" and "persuasion" as practical therapeutic agents—a differentiation which is apparently endorsed by Dr. Alexander Morison in his philosophic letter last week, where he speaks of the benefit to be derived from "the plain if sympathetic inculcation of common sense, the inspiration of righteous conduct, and, above all, of courage to face and to accept whatever betide." For personally I cannot help thinking that no such distinction would ever be made by anyone accustomed to deal with these mental factors as a matter of everyday routine, and for the following reasons.

Persuasion consists of a verbal appeal to a patient's mind by which he is eventually convinced that certain ideas he has held are errogeous, and consequently alters his outlook on life and his conduct accordingly; it is thus pre-eminently suited to the treatment of abnormal mental states, such as are associated with psychasthenia and very early in-Thus a man who has a growing notion that his sanity. friends are conspiring against him, or that his life and work are valueless, may be persuaded by persistent argument that such ideas are erroneous, and be actually saved from the threatening breakdown by a series of conversations conducted with a definite therapeutic object. I have seen such things done. And what happens under these circumstances is that a new idea is insinuated into the patient's mind which either dominates or overcomes the pathological one. Now this satisfies the definition of "suggestion," and I therefore argue that "persuasion" does not essentially differ from "suggestion," but is merely that form of suggestion which is most suitable for use in the treatment of certain mental conditions. On the other hand, supposing that one has to deal with pain of functional origin, we know that it is useless to try to persuade the patient that the pain is not there; if a patient says he has a pain in his head, for example, experience tells us that we cannot under ordinary circumstances persuade him that he has not. But it is well known to those who have any practical knowledge of suggestive therapeutics that some pains can be relieved by an appeal to the patient's mind either by confidently spoken words, or through the stimulus of, say, a mild faradic current; the curative idea being thus suggested to the patient, whose mind is to all intents and purposes persuaded to accept the idea of freedom from pain.

If I may so put it, I think that both the writer of your remarks on the therapeutics of suggestion and Dr. Alexander Morison have meant to express the same thing, but have confused the issue through unfamiliarity with the technique of suggestive therapeutics. And what they have intended to express is, I think, that an indirect appeal to the patient's higher faculties, as, for example, through the medium of a conversation, is much to be preferred to anything in the nature of a "sitting" or "séance" in which the patient has to come into more than ordinarily lose relations with the physician, or in which various manual manipulations play a

leading part, and with such a view I am entirely in accord. But I must point out that, with the exception of some mental conditions, unless such an appeal is accompanied by some material form of treatment it will fail in most cases. I am stating this as a matter of practical experience, not of theory. Moreover, there is no reason why the material means used to support the suggestion should not be such as to possess a therapeutic efficacy of its own; indeed, I have repeatedly upheld the view that it is in such combinations that suggestion should find its rational place in our therapeutic armoury.

The mystery with which suggestive therapeutics is often surrounded, the induction of the hypnotic state which is by some considered to be an essential accompaniment of suggestion in treatment, the laying-on of hands and other manipulations in use, all act in the same way, I believe—namely, by impressing the patient with the idea that he is being subjected to some extraordinary curative force, and so strengthening in this way the suggestions made, not by any specific virtues of their own. And if the same result can be brought about, as I am quite satisfied that it can be, by methods more in accordance with our notions of what a medical man's work should be, I think that most practitioners will be in agreement that it is time that the more mysterious, and indeed more doubtful, adjuncts of suggestive therapeutics were dropped once and for always.

It is my hope that those who have at heart the development of the better side of suggestive therapeutics, not as a specialty or specific but as an adjunct of routine treatment, will come forward in support of the views I am here expressing, and which have, I think, in intent been expressed both in your valuable comments on the subject and in Dr. Morison's letter.

I am, Sir, yours faithfully,

EDWIN L. ASH, M.D. Lond.
Harley-street, W., Nov. 21st, 1909.

OXALURIA.

To the Editor of THE LANCET.

SIR, -In THE LANCET of Nov. 6th there was an interesting paper by Dr. R. Maguire upon this subject, and a large part of it is taken up with the endeavour to prove that the condition when mild is due to "a disorder in metabolism," "an accident or incident in the metabolism of carbon," but when more severe to "an exaggerated production accompanied by nervous and dyspeptic symptoms," and he cites a case which he thinks supports his hypothesis, but I would suggest that there is not much which bears it out, and that the oxaluria can be explained in another way. Anyone who frequently examines urinary deposits with the microscope will know how very commonly crystals of oxalate of lime are found, and these are not always (as Dr. Maguire himself allows) accompanied by nervous and dyspeptic symptoms even in the severe cases where oxalic calculi form. In my experience in a general practice such symptoms are quite uncommon; the one complaint which patients sometimes make in the cases without calculi is slight pain in the course of a ureter; as a rule, there is no other sign of ill-health, even in calculous cases. Therefore, oxaluria and dyspepsia may occur separately or together, and when together I believe they are a coincidence and not cause and effect, and my reason for this belief is that in my clinical experience the urine can always be cleared of oxalate crystals by attention to diet alone in a few days. Put the patient on an oxalate-free diet and the urine will soon become free from oxalate Dr. Maguire mentions that his patient was not relieved by a three weeks' stay at Vichy, but then his diet was composed mostly of vegetables! Not much improvement was to be expected. (By-the-bye, I suppose he was put upon a vegetable diet as a result of the pernicious theory that oxalic acid in the urine is a result of a decomposition of uric acid.) But Dr. Maguire later ordered rest, a change of diet and dilute nitric acid, and the deposit of calcium oxalate in the urine lessened, as he says, "almost pari passu with the improvement in digestion," but also, be it noticed, it coincided with a change to a liberal diet of white meat"—that is, to a more oxalatefree diet. It seems to me that in his case the dyspepsia was due to "mental and physical fatigue," "great overwork, anxiety, and sleeplessness," and the oxaluria was due to error

in diet; at any rate, no other hypothesis as to "a disorder in metabolism" is required.

I am, Sir, yours faithfully,

Leicester, Nov. 9th, 1909. REGINALD PRATT, M.D. Lond.

CIVILISATION AND THE CORSET.

To the Editor of THE LANCET.

SIR,—The attention which Mr. W. Arbuthnot Lane has drawn to the benefits of corsets is particularly pertinent, because for some years past they have been strenuously decried by certain exponents as being detrimental to muscular development and to liberty of limb. The fact is, women have found by centuries of accumulated experience that corsets are to them structurally indispensable, whilst modern science has also shown that they are physiologically beneficial.

The women of Egypt, of Greece, and of Rome all wore corsets, and did so for service and not for fashion. These ancient corsets consisted of three parts. First, there was the loin band or zone, which was the essential piece, and was persistently worn; then there was the thoracic band or strophion, which gave mammary support as required; and, lastly, there was the waistband, which intermediated between the other two. It is the conjunction of these three pieces that has given rise to the present corset, in which it is still the loin portion that is indispensable, whilst the other parts are merely adjunctive. And not only have women in all ages and in all climates found the "girding of the loins" to be a necessity, but even men in sultry and atonic countries have acted, and still act, similarly. The ancient Israelite and the Roman legionary were wont to gird their loins for effort, whilst the Indian and the Arabian of to-day still do the same.

But it may be asked, Why is it that all the women of the world as well as the men of tropical races should find such artificial support needed? The answer is that the human abdomen has certain structural disabilities and for obvious reasons. Man, as every morphologist knows, is built on the quadruped pattern. His abdominal organs and their encasement are similar to these of a horse or a dog. If his body was always horizontal, as it is in quadrupeds, then his abdominal organs would have in addition to their peritoneal slings the whole of the anterior walls of the abdomen as a hammock of support. But as man has chosen to become biped and erect this abdominal hammock is no longer available, and the organs, having to depend only on their peritoneal slings, which very easily stretch, tend to gravitate downwards and to unduly huddle against the lower front wall of the abdomen. It is true that "nature" has striven to aponeurotically strengthen this front wall, as, indeed, Sir Astley Cooper pointed out in his work on hernia, and this before Darwin wrote or the term evolution was coined. But up to the present this effort of nature in the roll of centuries is incomplete, and hence it is that the women of all races and the men of certain races have found for themselves the advantages of girding their loins and thereby artificially supporting the lower abdomen. It is scarcely necessary to point out why women need this girding more than men. The extra organ they possess, its situation in the lower abdomen, and its mutability in the exercise of its functions, all point to the need for quietude and steadiness. Nature has ordained that women should breathe pectorally so as not to perturb this abdominal organ, and any artificial support of the incompetent abdominal walls acts also in the direction that nature has indicated. Hence the use of the corset by women is in agreement with the dictates of nature and not contrary to them, as some critics would maintain.

One further point remains. What is the effect of compression over the lower abdomen upon the body generally: is it deleterious or beneficial? The answer to this has been most carefully investigated and given. In 1888 Professor Ray and Professor Adami delivered a conjoint address before the British Association on the "Physiological Bearing of Waist-belts and Stays," as the result of experiments they had made not only on humanity but also upon animals. Without going into the details (which are available in the volume of Proceedings), they found that a large amount of waste blood lay in the abdominal viscers, and that if these latter were gently compressed by a corset this

stagnant blood was driven into the general circulation and by being brought into service in the other parts of the body conduced to an increased muscular and mental activity. And they finally showed that all the physiological facts collected in their experiments explained "the beneficial and extensive use of some form or other of waist-belt by all nations who had passed beyond the stage of absolute barbarity." It will be observed that these gentlemen took no cognisance of the structural matters to which I have previously alluded, but simply investigated the result of abdominal compression as reacting on the body generally, and they found it beneficial. Moreover, they found that it increased muscular activity, a fact that disposes of the

contentions of the gymnastic critics. Having now given the reasons why corsets are needed, as well as the grounds on which they are beneficial, there remains to indicate what constitutes a proper corset from the medical as apart from the fashionable point of view. A proper corset should firmly support the loins and the lower abdomen, following in this respect the loin band or zone of the ancients. The waist should not be constricted nor should the stomach be unduly pressed upon, otherwise its churning of food in digestion will be checked. The top of the busk should not impinge on the lower end of the sternum, otherwise respiration will be interfered with. The corset may support the breasts if these are pendulous, otherwise it should fit but loosely to them. And it should fit closely and evenly along the back. If the textile portions of the corsets are thus rightly fitted, then certain supporting bones can be incorporated where needed, or even, as in the case of corsets that are worn for deformity, certain surgical adjuncts may be attached, and this without detriment to correctness of fit. If a medical man is called upon to give his opinion on a corset he should always see that he is able to pass his hand in front between the corset and the body down as far as the waist, thereby indicating that there is no undue pressure upon the parts traversed.

So much then for the rationale and rightness of corsets, but a further note or two may be of interest. When the long straight-fronted corsets of a few years since were in vogue I noted the common occurrence of what might be termed "corset dyspepsia," the stomach being so unduly pressed upon that it could not stir nor digest its contents. This malady did not attract medical attention, probably because with a change of the fashion it disappeared with its cause. Another interesting fact is that tightlacing is no longer the vogue. Statistics on this point were collected by the *Drapers' Record*, whose editor obtained returns from the principal manufacturers of corsets as to the waist measures demanded by the public. He commenced the inquiry in 1896, and has tabulated them up to a recent date. It is satisfactory to find that there has been a considerable increase in the waist measurement, although it is to be feared that this is rather due to changes in fashion than to medical warnings. Fashion has naturally controlled the shape of corsets, not only now, but in previous centuries. I am, Sir, yours faithfully,

Wimpole-street, W., Nov. 22nd, 1909.

HEATHER BIGG.

To the Editor of THE LANCET.

SIR,—It is refreshing to find the voice of common sense joined to the voice of authority in Mr. W. Arbuthnot Lane's paper on Civilisation and the Corset in your issue of Nov. 13th.

The corset of the present day—the "erect or American" corset—is the exact counterpart of the cast iron arrangement of our mothers. I tabulate the differences as follows:

Old Corset.

Back.—Rigid and straight; did not accommodate curves of spine; produced slouching.

Front.—Curved to form small Front.—Straight, simulates rectus

waist.

Height in front.—Extended to above level of nipples, compressing the whole of thorax and squeezing in lower ribs.

Depth in front.—Too short; compressed viscera of abdomen which protrude below the stays.

Front.—Straight, simulates rectus muscle.

Height in front.—Only extends to ensiform cartilage; leaves thorax free.

Depth in front.—Extends downwards to pubes; includes and supports abdominal viscera; shields abdomen

wards to pubes; includes and supports abdominal viscera; shields abdomen.

So well does an erect corset support the abdomen that for some time I have been in the habit of sending patients to the Potassium iodide is surely best given after a course of

corset-fitting room of good drapers whom years ago I should have sent to an instrument maker for abdominal belts.

For the benefit of the uninitiated I would remark that the corsets need to be properly adjusted. The laces should be well loosened, then the busks fastened, then the suspenders attached; and then the abdomen pressed upwards before the laces are tightened, and support is afforded to the figure.

I am, Sir, yours faithfully, (Mrs.) Latitia H. Andrew-Bird, L.R.C.P. Irel. Stoke Newington, Nov. 16th, 1939.

THE TREATMENT OF WHOOPING-COUGH IN GENERAL HOSPITALS.

To the Editor of THE LANCET.

SIR.-Mothers and school teachers do not appreciate the seriousness of whooping-cough, although it is a sad fact well known to medical officers of health. In my own area whilst the death-rate in 1907 from scarlet fever was only 0.15 per 1000 inhabitants that from whooping-cough was as much as 0.65 per 1000.

The following incident would appear to show that the seriousness and highly infective nature of whooping-cough are not appreciated also by the management of general hospitals. A mother recently informed my woman inspector that she was taking her little child to a large children's hospital in London to receive treatment weekly for whooping-cough. I was disinclined to believe this astounding statement, but direct inquiry proved that it was correct. Indeed, I was thus officially informed: "The hospital has a special department for this disease, which (department) is open twice a week." This is naturally with the approval of the medical committee, and I believe most of the children's hospitals have similar departments.

For my part I think this abominable practice should at once be stopped, as the number of children thereby infected must be considerable. Even this one case which has come to my knowledge may have done much harm in the weekly visits to hospital by infecting other children attending at the same time, and by infecting trains and trams and those using these public conveyances.

I am, Sir, yours faithfully

SIDNEY C. LAWRENCE, Medical Officer of Health. Town Hall, Edmonton, Nov. 16th, 1909.

THE TREATMENT OF CHRONIC ULCER OF THE LEG.

To the Editor of THE LANCET.

SIR,—Having read Mr. Willmott Evans's paper, "The Treatment of Chronic Ulcer of the Leg," in THE LANCET of Nov. 13th, 1909, I was very surprised to find that he thought more than 90 per cent. of chronic ulcers of the leg were syphilitic in origin. I should much doubt if this is the experience of most, and it is certainly not borne out by the results of the Wassermann reaction. I have the notes of 65 cases of chronic ulcer of the leg, both syphilitic and nonsyphilitic. From these only 15 gave a positive Wassermann. Of the 5000 cases described in the *Pructitioner* tested with the Wassermann reaction 70 per cent. of the cases of syphilis tested in the tertiary stage gave a positive reaction, many of these having no manifestation at the time; undoubtedly some of the cases were cured.

If over 90 per cent. of these cases of chronic ulcers were syphilitic a positive reaction should have been obtained in at least 40 out of the 65 cases. Too many cases are treated on the chance of their being syphilitic, without any thought being taken of the injurious effects of mercury, which one sees so commonly, especially in patients who have never had syphilis. It is no argument to say a case must be syphilitic because it improves on potassium iodide. In cases of chronic bronchitis there is probably no drug more useful. Further, iodides are not a specific against syphilis; they prevent fibrotic changes, especially in the tertiary lesions, but have absolutely no action on the syphilitic virus. Therefore, if an ulcer of the leg has been diagnosed as syphilitic mercury should be given at once, since it shows the activity of the syphilitic poison, and mercury is the only specific against it.

mercury, since it has the further action of eliminating the mercury which has accumulated in the system. In outpatient practice more harm than good is done by the injudicious use of fomentations. Patients allow the fomentation to get cold—the venous congestion is increased, the edges of the ulcer become sodden, ultimately necrose, and the ulcer is bigger than it was to start with.

The best method of cleaning an ulcer is to treat the leg as one would preliminary to an operation. Wash and shave all round the ulcer, scrape the raw surface, paint with pure carbolic, then well swab with absolute alcohol and lay on a piece of sterilised gauze upon which some Lassar's paste has been spread. A method of treatment not yet widely practised, but from the cases I have seen with the most extraordinary results, is the following. Scarlet red (Scharlachrot or Fettponceau R.), an aniline dye, is dissolved in chloroform and made into an 8 per cent. ointment with vaseline. A thin layer of the ointment is spread on a piece of calico and applied to the ulcer, but not allowed to remain for more than 24 hours. Boracic ointment is then applied for two days and the scarlet red repeated, and so on. In quite a short time the ulcer granulates up. Great care must be taken to clean the ulcer well before using the scarlet red. This method of treatment either brings about complete healing of the ulcer or makes the surface suitable for skin-I am, Sir, yours faithfully, grafting.

J. E. R. McDonagh, F.R.O.S.

Harley-street, W., Nov. 23rd, 1909.

THE INFLUENCE OF DIET ON THE THYROID GLAND.

To the Editor of THE LANCET.

SIR,—The above subject has been brought somewhat prominently before us during recent years, and I should be glad to think that we now possess enough experimental evidence to guide us in the dietetic treatment of gout. Unfortunately we are still a long way from this goal, and although Dr. Chalmers Watson expresses the opinion that a protein diet causes the thyroid gland to enlarge and its microscopical appearances to change, I fear that many, if not most, of his fellow-workers will hesitate to venture so far ahead of established facts. Excessive meat-eating is a subject that has attracted a whole host of investigators, but I believe that none of them, with the exception of Dr. Watson, has been fortunate enough to produce the changes he describes. I myself carried out a series of experiments (an account of which was published in your journal a couple of years ago), but I had to cast my testimony on the side of the majority, for even after nearly two years of an exclusively protein diet the thyroids remained perfectly normal. I also made a comparative study of the glands in carnivorous and graminivorous birds. Here Nature herself performed the experiments and I merely recorded her results. But I found not only that the meat-eaters were not provided with larger and more active thyroids, but that, in some instances, they possessed glands which were strikingly inactive, much more inactive than in many purely vegetable-eaters.

Such facts as these are not, of course, easy to explain away. Yet they and the almost unanimous testimony of past observers must be disposed of before we can bring ourselves to accept that curious belief that our gouty patients will "strain" their thyroids if they eat meat in moderation, but will advantageously stimulate them if they consume it in unnatural excess.

I am. Sir, yours faithfully, Queen Anne-street, W., Nov. 22nd, 1909. DAVID FORSYTH.

DARWINISM AND MEDICINE.

To the Editor of THE LANCET.

SIR,-I think the time has arrived when a vigorous protest should be raised against the attitude of many scientists with regard to the abeyance of natural selection in civilised communities, and we must welcome Dr. Harry Campbell's timely letter on the subject. The idea that natural selection is in abeyance seems to be so congenial that it has gradually become more or less fully accepted without any real evidence whatever. To illustrate the position we may refer to the supposed degeneracy of the teeth. It has been observed that the teeth have become a positive menace in civilised communities, and the congenial explanation of this has

been that the skill of the modern dentist and the food of the civilised are of such a nature that those who have dental caries resulting from an hereditary predisposition to the disease are able to survive nearly or quite as well as those with sound teeth. This, it is contended, is why we find increasing numbers of decayed teeth among the civilised, whereas among the uncivilised the loss of even a few teeth would seriously handicap their possessors because these defects are not rectified, and the foods which perforce they must live upon demand a thoroughly efficient masticatory apparatus. When, however, we look into this argument we find it is quite hollow, for among those savages with the best teeth and having food which demands the most vigorous mastication there is practically no elimination because of carious teeth, as carious teeth practically do not exist among them. On the other hand, in civilised communities we find a large proportion of individuals with very bad teeth long before they reach maturity. It is now known that teeth do not decay except when the mouth is in an unhygienic state, and that this is brought about chiefly by the soft and sticky foods which lodge in the crevices of the teeth; and have we not learned in recent years that an unhygienic state of the mouth is the origin of a host of diseases which frequently lead to a fatal termination? This unhygienic state of the mouth often dates from infancy when on account of an erroneous theory a system of pap feeding (bread soaked in milk, milk puddings, &c.) is deliberately forced on children at a time when they are quite able and willing to eat bread or toast and butter, &c., and to drink what milk or water they require afterwards.

There is no precedent in the whole history of the evolution of man or animal for the soaking of bread or any other thing in milk. So throughout childhood the system is often more or less continued, the teeth become carious and the weakly children succumb, the disease which carries them off frequently having had its origin in the carious teeth. Are we, then, to believe that the mouth is not a common entrance portal of disease because the skill of the doctor and dentist prevents natural selection from having its way? Again, we know that many young women have a somewhat dilapidated dental armamentarium either with or without artificial substitutes. We know that this tends to give rise to ill-health-generally chronic. We know that a considerable proportion of them are unable to suckle their young as the result of their impaired health. finally, that among bottle-fed babies the mortality is much greater than among breast-fed babies. This chain of facts leads us to believe that there is greater mortality in children of mothers with bad teeth and unhygienic mouths than there is in the children of mothers with perfect teeth, and consequently there is an indirect elimination of those who are hereditarily predisposed to dental caries. It must, I think, be admitted that there is no evidence whatever that the teeth are degenerating because of the abeyance of natural selection. With regard to the idea that the diminution in the size of the civilised jaw has outrun the diminution in size or number of the teeth. Professor Arthur Thomson takes up a similar, if not identical, position to that which I myself took up in my book on "The Irregularities of the Teeth," and apparently believes that the crowding of the teeth is a "modificational" characteristic, for he indicates his belief in relation to this subject by saying that "far too little attention has been paid to what I call 'modificational' characteristics, which look as if they were inherited, but are not, being re-impressed or re-acquired in each successive generation.

I am, Sir, yours faithfully, ov. 22nd, 1909. J. SIM WALLACE. Wimpole-street, W., Nov. 22nd, 1909.

THE TREATMENT OF MORPHINISM.

To the Editor of THE LANCET.

SIR, -- In your issue of Oct. 16th Dr. Oscar Jennings of Paris criticises my method of treating morphinism by artificially inducing sleep during the painful withdrawal period. his point seems to be that the cultivation of the will is better accomplished by a painful than by a painless method when the latter is accompanied by hypnotic remedies. But my observations lead me to exactly the opposite conclusion. The long-drawn-out suffering caused by the ordinary gradual reduction method weakens not only the mind and body, bat

especially the will. Whatever tends to obliterate suffering conserves the strength of all the faculties of both mind and body, and thus lessens the liability of relapse after the patient leaves the sanatorium.

A few minutes after reading Dr. Jennings's criticism I chanced to meet a nurse who cared for her sister while she was under my treatment for morphinism. I told her of this criticism, and she reminded me of her own experience. Her sister had taken treatment for morphinism in two institutions before coming to me. In both places they used the usual painful reduction method, without much reliance upon drugs, and after each treatment she promptly relapsed. Since taking treatment with me she has not returned to the use of morphine, and long since resumed her usual work, maintaining the best of health. One of the glories of modern medicine is its conquest of pain. It is no mean achievement to keep a patient free from suffering while nature or art is busy restoring him to health. This is the object of my treatment of morphinism.

I am, Sir, yours faithfully,
Dorchester, Mass., U.S.A., Nov. 5th, 1909.
C. J. DOUGLAS.

HOSPITALS AND THE LONDON COUNTY COUNCIL: MEDICAL TREATMENT OF SCHOOL CHILDREN.

To the Editor of THE LANCET.

SIR,—There seems to be as great a diversity of interpretation of the arrangements entered into between various hospitals and the London County Council regarding the special medical treatment of children attending the Council schools, as there is difference of opinion in the prudence of such arrangements.

In the hope that the position taken up by the committee of the Central London Throat and Ear Hospital will commend itself to their subscribers, to the charitable public, and to the medical profession, I venture to give the resolution passed at our recent meeting, viz.:—

That the committee of the Central London Throat and Ear Ho-pital is willing, as hitherto, to receive those children of the London County Council schools who are suitable for hospital treatment so far as the capacity and resources of the hospital will allow.

It will be seen that we neither enter into financial contract nor give preferential treatment, our intention being to receive the children on their merits, not because they are children under the supervision of the L.C.C. but because they are children of the poor who have a claim on our sympathy and our assistance, the only passport needed being illness and the absence of means to pay for the adequate medical treatment of that illness.

I am, Sir, yours faithfully,

RICHARD KERSHAW.

Central London Throat and Ear Hospital, Grays Inn-road, Nov. 17th, 1909.

THE EYESIGHT OF SCHOOL CHILDREN.

To the Editor of THE LANCET.

SIR,—May I suggest that the medical officers who are examining school children in the elementary schools should inquire what kind of artificial illumination is provided in the school by which the children have to perform their writing and reading lessons during the dark foggy days so prevalent at this season of the year? I understand that in some schools there is quite inadequate illumination, the ordinary old-fashioned gas-jet being used without applying the modern methods of illumination, even by those boroughs which have electricity works of their own. Examination of the children's eyes at this time of the year could conceivably show the effects of eyestrain due to this cause and give misleading results for tabulating purposes.

I am. Sir, yours faithfully,

London, Nov. 17th, 1909.

A PARENT.

LITERARY INTELLIGENCE.—Messrs. Baillière, Tindall, and Cox will shortly publish a handbook by Captain E. Blake Knox, R.A.M.C., M.D., D.P.H., entitled "Aids to Microscopic Diagnosis (Bacterial and Parasitic Disease)," which will present a concise account of clinical laboratory technique.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Institute of Sanitary Engineers.

Mr. J. D. Watson, engineer to the Birmingham Drainage Board, delivered his presidential address to the Birmingham and Midland section on Nov. 16th. The subject was "The Disposal of Sewage at a Country House." He directed attention to the need of making owners and occupiers realise the need for improvement and for efficient methods of dealing with sewage. Many beautiful streams were polluted because no attempt at purification of sewage was made. A natural method of purification was the best, and that might be done by land irrigation or by artificial means or bacteria beds according to circumstances. The quality and suitability of land were of great importance, some soils being capable of purifying more than 30,000 gallons of sewage per acre per day, and other soils not a tenth of that amount. Assuming a typical country house inhabited by ten people, with a total volume of sewage of about 300 gallons per day, he recommended the establishment of a bacterial plant on the percolation system.

Parents' National Educational Union.

The annual conference was held in Birmingham from Nov. 15th to 19th. Much interest has been taken in its proceedings. On the first day a large meeting, presided over by Lord Lytton, was held in the great hall of the new University buildings, and an address was given by Sir Oliver Lodge. Among other notable addresses were those by the Bishop of Birmingham on "Shall we send our Sons to the University?"; by Canon J. H. B. Masterman on "The Education of the Imagination"; by Sir Martin Conway on "How to Interest Young People in Art"; and by Dr. Helen Webb on "Environment in Relation to Nervous Stability."

Death of Alderman Alfred Barratt, M.R.C.S. Eng., L.R.C.P. Edin.

I record with regret the death of Alderman Barratt on Nov. 18th at the age of 81 years. Mr. Barratt was trained at Queen's College, Birmingham, and qualified in 1855. For about 30 years he worked a large general practice in a thickly populated artisan district. In 1870 he was elected to the town council and joined the small band of publicspirited men who, under the leadership of Mr. Joseph Chamberlain and Mr. Jesse Collings, strove successfully to reform the constitution of the council and its methods of working, so bringing about a vast improvement in the town. His professional knowledge was of great service to the health committee, drainage board, and estates committee, of which he was a member. He was also a member of the committee which carried out the great improvement scheme when a number of old slums were cleared away to make room for handsome business streets. For 20 years he was a member of the board of guardians, of which he was chairman in 1885. At the time of his death he was a member of the board of overseers. He lived a strenuous life, and was a good example of a public man actuated by the highest motives.

Royal Leamington Spa.

The town council has decided to enter upon a scheme to reorganise the baths and make them better known. A weak saline water is to be supplied in addition to the strong saline water now in use; a medical pamphlet will be drawn up; a sum not exceeding £500 will be spent on advertising; and an annexe to the pump room will be provided.

Nuneaton General Hospital.

At the annual meeting of the supporters of this hospital a motion was proposed to rescind the rule restricting the hospital medical staff to six, and substituting a rule that all the duly qualified medical men in the town after 12 months' residence should be members of the staff, if they desired, on application to the management committee. It was pointed out toat working men contended that patients when they go into hospital should have the privilege of being attended by their own medical men. After a long discussion the motion was lost by 60 votes to 48.

Nov. 23rd.

WALES.

(FROM OUR OWN CORRESPONDENT.)

Overcrowding of Bridgend Workhouse.

THE population of the Bridgend and Cowbridge Union increased during the decade ending 1901 by 16,000 persons, and it is probable that a proportionate increase has been going on in the past eight years, so that it is not at all surprising to find that the accommodation provided in the union workhouse has frequently been over-taxed. Alterations to the infirmary have resulted in this portion of the institution being placed in a very satisfactory condition, but according to a report recently presented by Mr. L. M. Shadwell other parts of the workhouse are very unsatis-Some of the female dormitories have been given factory. over to the use of the men, so that the women and children are in very restricted quarters, as many as 35 of them being in a room in which only 18 should be accommodated. Provision for escape in case of fire appears to be very inadequate on both sides of the house and in other ways structural alterations are necessary. It should, in fairness to the board of guardians, be stated that, following the example of similar bodies elsewhere, it has been considered only prudent to await the recommendations of the Poor-law Commission before embarking upon an extensive building scheme, and it now appears to be not unlikely that with an extended scheme of classification and a wider area of administration the necessity for the enlargement of existing Poor-law institutions may be met by utilising unoccupied portions of similar institutions in other parts of the county.

Infantile Mortality in Nowport.

The infantile mortality rate—135 per 1000 births—recorded in Newport for 1908 compares very favourably with that of 10 years ago, when it was 179 per 1000. This very considerable reduction is no doubt due in great part to the efforts which have been made by the sanitary committee of the corporation to improve the surroundings of the working-class population of the town. There are, however, possibilities of still further improvement, and in his recently issued annual report the medical officer of health, Dr. J. Howard-Jones, refers to the large number of preventable infantile deaths as an indication of the necessity for some radical changes in the education of girls so that they may be better prepared for their life work as wives and mothers of the nation. He further urges the necessity for the cooperation of the public with the sanitary authority in the endeavour to reduce the large amount of infantile sickness and mortality. With the object of securing this coöperation a scheme has been inaugurated in Newport for the purpose of establishing a school for mothers somewhat on the lines of that which Dr. J F. J. Sykes has instituted in The objects of the school are to promote infant St. Pancras. and domestic hygiene and the natural feeding of infants, to afford assistance to mothers in necessitous cases where they appear to be in want of the nourishment required for the continuance of breast-feeding, and to advise mothers generally upon the care of their children as regards feeding and clothing. Milk is supplied daily to mothers during the first month after their confinement on condition that they drink it themselves and continue to nurse their infants, and necessitous mothers are supplied with dinners at a nominal charge. Newport school appears to have been formed upon sound lines and will, no doubt, meet with the success which has attended similar undertakings elsewhere.

Monmouthshire Water-supply.

The scarcity of water in certain parts of the Monmouthshire colliery districts has been frequently commented upon, and the increase in the population of both the eastern and western valleys makes it more and more imperative that an adequate supply should be provided. The very laudable effort which the county council made two years ago to obtain water from the Brecknockshire hills was unfortunately unsuccessful, but it is satisfactory to find that two urban district councils, those of Abertillery and Abercarn, have decided to promote a Bill in the next session of Parliament for the purpose of forming a joint water board. The scheme of the councils includes the impounding of water in Brecknockshire and conveying it to the western valleys. It is anticipated that there will be a sufficient supply not only for the two districts named but for several of those adjoining.

Nov. 23rd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Appointments at the Royal Infirmary, Edinburgh.

THE managers of the Edinburgh Royal Infirmary at their meeting on Nov. 15th appointed Mr. Henry Wade, F.R.C.S. Edin., an assistant surgeon to the infirmary, and at the same time appointed Dr. James Miller, formerly of the University of Birmingham, an assistant pathologist in the pathological department of the infirmary. There were several candidates for both posts, but the appointments fell to the men who were generally expected to secure them.

Edinburgh School Board Appointments.

After a good deal of trouble the Edinburgh School Board has decided to appoint two medical officers at a salary of £250 a year each. It originally proposed to appoint a man at £250 and a woman at £200. The women at once took steps to dissuade any of their number applying for the post, and it is thought that two men may be selected. For the kind of work there is no doubt as to the suitability of women, and when the School Board recovers from its annoyance at being checkmated the members will realise that the position the women take up is equal pay for the same kind of work for both sexes, and that this is the fair position.

Improvement of Medical Education in Edinburgh.

For some days past communications and letters have been appearing in the Scotsman dealing with defects and proposed improvements in medical education in Edinburgh. These have evidently been largely inspired by the report which has been issued from the Edinburgh Pathological Club on the condition of the school. At an early date the directions in which improvement is most necessary may be dealt with. Meanwhile the strong impression is that it will be exceedingly difficult to induce the professoriate to move from its present position, while those who see the need of change are prone to ask too much and to mix up issues.

Appointment of an Edinburgh Anatomist to a London Chair.

Dr. David Waterston, at present lecturer in anatomy to the University of Edinburgh, has received the appointment of Professor of Anatomy in King's College, London. Dr. Waterston is a son of the Rev. Richard Waterston, and is an M.D. of Edinburgh, receiving a gold medal for his thesis. After the death of Professor Cunningham, Dr. Waterston was acting professor of anatomy at the University, and previously to this he was assistant to both Professor Cunningham and Sir William Turner. He is a Fellow of the Royal Society of Edinburgh and a Vice-President of the Royal Physical Society. Dr. Waterston commands the medical unit of the Officers' Training Corps in the University, and takes an active interest in matters Territorial. He has contributed extensively to literature and has edited a popular Stereoscopical Atlas of Anatomy.

Nov. 23rd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Temperance Crusade.

DRINK has confessedly always proved one of the most dangerous enemies of the Hibernian Celt, whose sociability and excitability made him so much more prone to the ready display of its most mischievous effects. One of the good results of the recent temperance movement throughout this country has been in the extension of means for the provision of food for persons attending fairs and markets. At a recent meeting in Athlone it was decided to purchase a coffee van which is to be used on these occasions; the experiment has already been made in other districts with ment has already been made to serve a twofold object. The detestable product known as "fair-day whisky" is struck at directly, while a crying wan of those who have to attend in the grey morning hours to the urgent and trying transactions of fairs is efficiently supplied. Very moderate prices are charged for the refreshment thus supplied, while it is pointed out that as the benefit conferred by such facilities will be reaped by the great majority of the public there is no reason why these undertakings should not be made self-supporting. In former

years the herd, cattle drover, and grazier always started for the fair—at which the most important of the items of their annual business was transacted—before dawn, and on a perfectly empty stomach. It was unmanly to do otherwise, or even suggest a change of custom. So absorbing was the enthusiasm for business that no idea of refreshment was entertained till the cattle were delivered and paid for. And then—the reward for the ordeal was furnished by the fresh whisky, specially prepared for the occasion by distillation from treacle or potatoes. It had a "grip" which was appreciated and it went "straight to the head," from which it banished all thought of care and consequences. Alcohol is receiving the fullest attention in Ireland, where so large a proportion of the annual expenditure is thereunto devoted.

The Tuberoulosis (Ireland) Act, 1908: Rejection by the Athy Board of Guardians.

The question of the adoption of the Tuberculosis (Ireland) Act, 1908, was brought before the Athy board of guardians at last week's meeting, and Surgeon-Colonel Edgar Flinn, medical inspector to the Local Government Board, attended for the purpose of furnishing the debaters with expert advice. After the adoption of the Act had been duly moved and seconded, Colonel Flinn pointed out to the meeting that the opposition to the adoption of the compulsory notification of phthisis was merely a slightly modified replica of the hostile demonstration elicited by the passing of the Compulsory Notification of Diseases Act nearly half a century ago—a measure which proved itself in practice to be both wise and beneficent. A guardian then pointed out that the adoption of Part I., or the compulsory part, would be of little practical value unless Parts II. and III. were put into operation, which conferred the power to erect sanatoriums. A division was then taken, with the result that—by a majority of 15 votes to 8 the meeting refused the adoption of the Act.

The Ulster Medical Society.

The an ual dinner of the Ulster Medical Society was held in the Medical Institute, Belfast, on the evening of Nov. 18th, when Dr. J. J. Austin, the President, occupied the chair. The toasts were as follows: "The King," given by the chairman, and also "The Lord Lieutenant and Prosperity to Ireland," to which Sir W. Whitla replied. Mr. R. J. Johnstone proposed "The Guests," to which Dr. T. H. Moorhead (Cootehill), President of the Ulster Branch of the British Medical Association, Mr. R. M. Jonas (headmaster of the Academical Institution), Mr. R. J. MacMordie, and Mr. H. Garrett replied. Sir John Byers proposed the toast of "The President of the Ulster Medical Society," to which Dr. Austin, who was very warmly received, replied. During the proceedings excellent songs and recitations contributed to the enjoyment of the evening.

The Belfast Medical Students' Association.

The inaugural meeting of the Belfast Medical Students' Association was held in the McMordie Hall. Students' Union, Queen's University of Belfast, on Nov. 19th. An introductory address on Post-Graduate Study having been given by the President, Dr. P. T. Crymble, Dr. G. A. Gibson (Edinburgh) delivered a lecture on "Modern University Ideals." At its conclusion the lecturer was accorded a vote of thanks.

Queen's University of Belfast.

Mr. R. M. Beath has been unanimously elected President of the Students' Representative Council, and will, in consequence, be entitled to a seat on the Senate of the University for the coming year. Nov. 23rd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Extraction of a Revolver Bullet Lying Loose in the Spinal Canal.

AT a meeting of the Academy of Medicine held on Nov. 2nd M. Tuffler described the case of a woman, aged 56 years, who was shot with a pistol in the abdomen and several weeks afterwards was seized with pain in the left thigh. Radiography showed the bullet lodged in the spinal column, but on operating M. Tuffier failed to extract it, notwithstanding the precision with which it had been located, and a second examination with the X rays showed that it was loose in the first and the last lumbar vertebræ. It was extracted in a second operation, during which the woman was in a kneeling position, and all the nervous troubles then disappeared.

Vaso-Vesiculectomy for Tuberculous Disease.

At a meeting of the Surgical Society held on Nov. 3rd M. Marion reported two cases of vaso-vesiculectomy under the care of M. Baudet. The first patient was a man, 32 years of age, who was admitted to the Hopital Lariboisière suffering from a swelling of the right side of the scrotum, an abscess opening below and behind, and a fistula. Rectal examination showed that the right vesicula seminalis was enlarged. An operation was performed on May 27th. An inguino-scrotal incision having been made, the epididymis was removed, and the whole anterior wall of the inguinal canal was incised down to the peritoneum which was turned inwards. The vas deferens was then isolated and followed to the vesicula seminalis which was removed. In the second patient, who had been kept in sight since the operation and had been seen 11 years afterwards, both vesiculæ seminales were removed, but on the left side the testicle was healthy. It must, therefore, be admitted that tuberculosis commenced in certain cases by the vesicula seminalis. Such operations on the reproductive organs were difficult in the performance and the results were not very striking. According to the statistics of M. Baudet and M. Kindindjy death by septicæmia occurred in only one case out of 57. Death might occur at a late stage by extension of the pulmonary lesions. The urinary fistulæ generally closed at the end of three months. M. Marion said that operation was obligatory in presence of urinary fistulæ, rectal tenesmus, and cystalgia, but that it was optional when the vesiculæ seminales were enlarged without being painful and did not undergo retrocession after an operation on the epididymis.

Treatment of Empyema.

M. Pailloz has laid before the French Society of Military Medicine the results of 28 pleurotomies which he performed at the hospital of Saint-Miniel on men suffering from purulent pleurisy. Among these patients there were 24 recoveries and 4 deaths. M. Pailloz remarked on the necessity of making an early diagnosis. For this purpose exploratory punctures must be promptly undertaken, not with a Pravaz syringe, which was quite inadequate, but with Potain's trocar. An operation should be performed as soon as puncture revealed the presence of pus in the pleura. The best operation, and the only one which provided sufficiently for drainage, was pleurotomy with resection of a rib. Disinfection of the skin should be carefully attended to in the subsequent dressings, so as to avoid infection of the lips of the wound which might seriously retard cicatrisation. The amount of the patients' food soon required to be increased. M. Pailloz used chloroform as the general anæsthetic in all cases. Treated on the principles above described an empyema would terminate in recovery after about 45 days.

Nov. 23rd.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Question of Gratuitous Attendance on Medical Practitioners and Their Families.

THE committee of the Prussian Medical Chambers, consisting of the official representatives of the medical profession, has prepared a draft code of ethics, in one paragraph of which it is said that a medical man should attend his professional brethren and their families free The editor of the Deutsche Medizinische Wochenschrift Professor Schwalbe, has commented adversely on the proposal of the committee as being no longer in accordance with the general circumstances of the profession. He explains that in former times, when the number of medical men was comparatively small even in important towns, the practitioners in each district knew one another and had opportunities of meeting in social intercourse. It was under these conditions that the custom of gratuitous attendance on professional brethren grew up and the custom was a good one, but at the present day the number of practitioners is so great that many of those in the larger towns have never been introcerebro spinal fluid and capable of travelling between the duced to one another. It must also be remembered that the

number of specialists was formerly very insignificant, and practitioners used to attend cases of every kind: when one of them or a member of his family became ill he called in a medical neighbour, to whom he rendered a similar service when the occasion arose. Nowadays, a medical man wishes his wife to be attended at her confinement by an obstetric specialist and the illnesses of his children to be treated by a specialist for children's diseases. general practitioner, moreover, expects this attendance to be given free of charge, although he is obviously not in a position to requite the specialist by rendering him professional services in return. It is also assumed that this obligation on the part of the consulting physicians and surgeons includes not only their professional brethren living in the same town but those in any part of Germany and abroad. It is true that the majority of medical men instead of paying fees are in the habit of either giving pictures, ornamental objects, trinkets, or other presents to their medical attendant or else of paying a certain sum to charitable institutions in which he may be interested, but on the whole the consulting physician or surgeon not only does not receive adequate remuneration for his work, but he may even incur expenses out of pocket. A physician carrying on a large practice in Berlin told Professor Schwalbe that he is consulted nearly every day, and sometimes three or four times a day, by medical men or members of their families during his consulting hours, and that he has been asked to see the wife of a medical man in a provincial town, which he did, thereby losing the whole day without being even repaid his travelling expenses. The system, in fact, involves disadvantages not only for the consultant but also for the practitioner who happens to be in need of advice or attendance, because the latter, through unwillingness to accept services which in some degree partake of the nature of charity, will certainly hesitate to consult a specialist even when necessary. Unpleasantness has occasionally arisen through the disinclination of certain practitioners to undertake the treatment of professional colleagues or members of their families. Some years ago a medical man in Berlin complained in the columns of a professional journal that when his mother, who lived in his house, had become very ill at night during his absence several medical men of the neighbourhood made various excuses for not coming to her assistance. Professor Schwalbe is therefore of opinion that it is not advisable to stipulate, by a paragraph in the code of medical ethics, that medical men and their families are to be exempted from paying fees, but thinks that this question should be left to a free agreement between both parties in each individual

Pregnancy and Diabetes.

At a recent meeting of the Berlin Medical Society Dr. Neumann read a paper on Pregnancy occurring in Diabetic Women. He said that three conditions had to be considered -namely (1) whether the woman was healthy previously to conception and became diabetic afterwards; (2) whether she was healthy at the time of marriage but became diabetic before conception; and (3) whether she was diabetic at the time of her marriage. The mortality of pregnant diabetic women was very high—about 50 per cent. -the principal causes of death being either coma or tuberculosis. The fætal mortality was about 51 per cent., while of the children born at full time 50 per cent. died within the first month. It has therefore been recommended that premature labour should be induced in diabetic women. Dr. Neumann, however, has now found in six cases that adherence to a strict antidiabetic diet made this procedure unnecessary, that normal delivery took place, and that the children were strong and healthy without showing signs of diabetes in the first years of life. The fact that he had six cases of pregnant diabetic women under his care was somewhat remarkable as sterility was rather frequent in diabetic women. Notwithstanding his good results he recommended that diabetic women should not marry and that when married they should refrain from conception. In the event of pregnancy occurring a strict antidiabetic diet was necessary from the beginning. Premature labour, he thought, should not be induced merely because a woman suffered from diabetes.

Dermatitis caused by Satin-wood.

At a recent meeting of the Hufeland Society Dr. Siegheim gave an account of an outbreak of dermatitis caused by satin-wood. The patients were 25 cabinet-makers employed

in a workshop where this wood was used, and the outbreak resembled those previously chronicled. The dermatitis was very like that caused by plants of the genus primula, being spread over the face and the arms, but not affecting the conjunctiva, the mouth, or the penis. In one case there were cedema and a nodular exanthem of the tnighs and feet. Anorexia and headache were present, but there was neither pyrexia nor albuminuria. The exanthem disappeared when the patient left the shop for a few days, but a relapse occurred in one instance. The treatment consisted in the application of oxide of zinc. Dr. Siegheim was of opinion that the dermatitis was caused by an alkaloid contained in the wood. A similar outbreak of dermatitis was lately observed in Breslau, where it was caused by foreign oak-wood. Covering the hands by chirosoter was a good prophylactic. Professor Jones expressed his agreement with the view that the wood contained an alkaloid; on the surface of the wood there were minute crystals which might easily be spread about. Dr. Somerfeld mentioned that the same disease was caused by Japanese lac. 1

Nov. 22nd.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

" Our Gideon Grays."

Dr. John Brown's "Horae Subsecivae" contains a memorable plea for the "country doctor" as he lived, laboured, and "entered into rest" during last century—a plea which took inspiration and title from the "village practitioner" as typified in Scott's "Surgeon's Daughter," from whom, says Sir Walter, "Scotland reaps more benefit and to whom she is perhaps more ungrateful than to any other class of men, excepting her schoolmasters." Italy, as in the day now passing, has her "Gideon Grays," has "medici condotti," to wit, or communal practitioners, who keep her rural population in health and confidence on a stipend which their British counterpart of "sixty years since" would not have found a living wage. These men, their "rugged conditions" notwithstanding, are, as a rule, so devoted to their profession on its scientific side that, wherever they have the chance, they give up their brief holiday to the post-graduate courses now open to them in nearly all the great clinical centres of Italy. In Milan, for instance, some 50 of them completed on Saturday last their third "corso di perfezionamento," and before separating for their remote spheres of duty met in fraternal symposium at a well-known restaurant of the city. Their conversation turned naturally on the life they led, its conditions and its prospects, and finally resolved itself into a discussion motivée by a cordial telegram received from Dr. Brunelli, Member of Parliament for Lugo and President of the "Associazione dei Medici Condotti." "From the university," said one of the interlocutors, "we are told off into secluded mountain districts, often to be the sport of the syndic, the communal clerk, and the priest whose interests are seldom ours and whose caprices we have to 'grin and bear.'" Evidence in this sense was multiplied by other speakers, one of whom summed up the "situation" as follows: "Orario (table of professional hours) covering all the day and most part of the night; shortage, often absolute want, of the medicaments and appliances necessary for successful practice; salary 2000 lire (£80) & year." Hard lines these; and after 25 years of work on such terms, during which the doctor makes an annual pay ment of 130 lire (£5 4s. 2d.) to the Cassa Pensione, he may expect a retiring allowance of 500 lire (£20) per annum. The symposium came finally to an "order of the day." voted unanimously, in which the Government were petitioned for legislative interference in behalf of the "medici condotti, with a view to the redress of existing grievances and the enactment of conditions commensurate not only with the just claims of the petitioners but with the public interests the said petitioners are called upon to serve.

The Argentine Republic and its International Congress and Exhibition of Hygiene.

In the summer of 1910 the Argentine Republic—wellnigh Italian in its civilisation and citizenship—celebrates the first centenary of its independence, and prominent among the

incidents of the commemoration will be an international congress and an international exhibition of hygiene. The congress and exhibition alike will be inaugurated on May 25th at Buenos Ayres, and the exhibition will remain open till Nov. 25th of the same year. Under 14 different heads it will comprise specimens of every object, appliance, and practical method known to sanitation in its widest sense, and already more than one of the continental powers are taking steps to be represented in the various sections. Exhibits will be accepted up to March 31st and will be exempt from all import dues whatever, except in the case of their finding purchasers at the close of the exhibition. The navigation companies will (it is understood) concede transport of goods as well as of passengers at reduced rates, precise particulars as to which will in due course be ascertained at the Consulates and Vice-Consulates of the Argentine domiciled in Italy. Meanwhile, information as to terms of admission and other details of interest to intending exhibitors can now be had on application at No. 15, Via Monte della Pietà, Milan, the seat of the Commissione Esecutiva del Comitato per le Esposizioni all' Estero.

Nov. 14th.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

Typhoid Fever.

In some of the local newspapers reports have appeared of the outbreak of the epidemic of typhoid fever in different quarters of the metropolis. The cause is attributed to bad drinking water. I myself have seen in the course of the last few months quite an unusually large proportion of typhoid fever cases at Haskeuy and Balat, two districts on the Golden Horn. Numerous people in Constantinople firmly believe that all the sources of water-supply here are contaminated and absolutely dangerous to be used for drinking purposes. Even the famous Sultan souyon (Sultan's water) got from the street fountains, which has, up to now, enjoyed the reputation of being perfectly pure, has now been condemned by a large section of the population as being also polluted. Although many of the popular fears are groundless, there can be no doubt that many of the water sources of the capital are anything but pure. This is the opinion of the special Commission that was appointed some time ago to examine them. The so-called Derkos water which supplies a large section of the city, and which many use unboiled and unfiltered, is certainly impure.

Malarial Fever.

Another epidemic—namely, that of malarial fever—is raging in the vilayet of Houdavendighiar. It is especially severe in Nicæa, where (so says the Osmanischer Lloyd) there is no house without a sufferer from the disease, and where the medical man himself is laid up. Since there is no druggist or chemist in that place people are forced to buy quinine from the bacal (grocer). It has been found that this drug is not of the necessary quality, with the result that the disease still continues its ravages. The medical man says that he has already several times asked the municipality of the town to take the necessary measures of prevention, but in vain. He was always answered that for the successful combating of the epidemic the sum of £500 would be required, which was not available. In Nicea as many as 60 persons have died from malaria in the course of the last few weeks. The opinion is expressed that the cause of the epidemic lies in the swamps of the district. The canal of Ghemlik, which unites the Lake of Nicæa with the Marmora Sea, has not been for a long time past in good working order, and the accumulations in the swamps have consequently not found the necessary exit. A large part of the population of Nicæa have expressed the to undertake the work of clearing the canal and the swamps. The inhabitants of Ghemlik, however, energetically object to this undertaking, as they fear that the clearing of the place will result in an inundation. dilemma is rather a difficult one, and the authorities are undecided what to do.

The Hospital of Gouréba.

Hamada Pasha, the Minister of Evkaf (religious property)

has inspected the Gouréba hospital of the metropolis and found it in a most deplorable condition. Complaints of the bad management of this institution have been very loud for a long time past. A special commission has been formed, consisting of the surgeon Djemil Bey, Mustafa Bey, the Director of the Faculty of Medicine, and Dr. Nizameddine Bey, to investigate the matter. This commission has now submitted a report which completely condemns the administration of the hospital. Gouréba is one of the most important national charitable institutions of Constantinople, containing as it does 300 beds. The management seems to have been utterly neglected. Typhoid fever cases were confined in one room in very large numbers. Disinfection was hardly ever undertaken, and when undertaken it was done in a superficial, casual manner. The most primitive hygienic measures were neglected. An idea of the great mortality that prevailed at Gouréba can be formed from the large sum spent for shroudclothes. It has been proposed that the direction of the hospital should be intrusted to Dr. Nedimeddin Arif Bey, who has studied in Paris and Berlin, and who lived in exile during the old régime.

Nov. 18th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Peliagru Board of Investigation.

The increasing prevalence of pellagra in the Southern States has led the Government to appoint a board of investigation as to its cause and the preventive measures necessary for its arrest. This board is empowered to visit the localities where the disease is most prevalent, to make such inquiries and investigations as may be found necessary, and to confer and coöperate with local health authorities in instituting the measures found to be essential to the extermination of the disease. The board consists of medical officers of the Public Health Service of large experience in the investigation of pestilential diseases, and experts in laboratory experimental work.

Accidents from Automobiles.

The National Highways Protective Society has published a list of the killed and injured in New York during the menth of October by automobiles. The total number killed was 22 and injured 33. Within the traffic lines, where the police are stationed at intervals, there are no accidents, but in the suburbs, where there is no such protection, the accidents chiefly occur. The society states that the average rate of speed in the streets is 20 per cent. higher than it was and is steadily increasing; the trouble is with the drivers. Any man who sends \$2 to the Secretary of State and asserts that he has had a certain amount of experience may have a licence to drive; the result is that even exconvicts, whose photographs are in the Rogues' Gallery, are driving some of the taxicabs. The society has decided to endeavour to secure legislation creating a Highway Commission with power to issue licences to chaufteurs and to regulate the operation of automobiles in cities and villages.

The Rockefeller Commission for the Eradication of the Hookworm Disease of the Southern States.

The creation of this Commission and its endowment with \$1,000,000 is an interesting if not a unique instance of a great work of public beneficence by private wealth. Mr. J. D. Rockefeller, recently organised a Commission of expert medical scientists, of which Professor Welch of Johns Hopkins University is the president, and addressed to it a communication, saying: "For many months my representatives have been inquiring into the nature and prevalence of hook-worm disease and considering plans for mitigating its evils. I have delayed action in the matter only until the facts as to the extent of the disease could be verified and the effectiveness of its cure and prevention demonstrated. If you deem it wise to undertake the Commission I shall be glad to be permitted to work with you to that end, and you may call upon me from time to time for such sums as may be needed during the next five years for carrying on an aggressive campaign, up to a total \$1,000,000." In accepting membership of the Commission the members replied as follows: "Your generous offer has our

heartiest approbation and we accept your invitation to administer this trust with a keen appreciation of the opportunity that you give us to do a great public good. The hookworm parasites often so lower the vitality of those who are affected as to retard their physical and mental development, render them more susceptible to other diseases, make labour less efficient, and in the sections where the malady is most prevalent greatly increase the death-rate from consumption, pneumonia, typhoid fever, and malaria. The disease can be easily recognised, readily and effectively treated and by simple and proper sanitary precautions successfully prevented." It may be interesting to notice in this connexion that there has long been a class of inhabitants of the Southern States which has been known as the "poor whites." They have been characterised by their listless habits and extreme poverty and apparent want of interest in business of every kind. In 1902 Dr. Charles W. Stiles, chief of the division of zoology in the hygienic laboratory, announced that the "poor whites" were not wilful degenerates but helpless invalids, and that the cause of their condition was the uncinaria or "hookworm," an intestinal parasite probably brought from Africa by slaves many generations ago. Dr. Stiles's investigations showed that this disease was extremely common among the poorer and unhygienic classes, and he was led to estimate the number of victims of this parasite at 2,000,000 at least, and probably a far greater number of sufferers actually exist. The discovery of this disease and its cause excited no other public comment than that it was a remarkable explanation of the peculiar habits of laziness of a class of people in which no one was especially interested. A Southern newspaper says: "The ridicule which Dr. Stiles's discoveries received at the outset now seems itself ridiculous. The idea of a germ of laziness could not at first be assimilated by the public mind. The hookworm was soon a subject of popular jest, and its finder became the butt of many dull jokes. But public disbelief and contempt only spurred Dr. Stiles to repeat his experiments and to stand on his discoveries. When William H. Welch and Simon Flexner, America's greatest pathologists, lend their support to a campaign against hookworm popular support must follow. Their approval is the seal of scientific authority.

Vital Statistics in the United States in 1908.

The chief statistician of the Bureau of Vital Statistics, Dr. Cressy L. Wilbur, states that the civilised world has reached an era of low mortality. The death-rate in the registration area in 1908 was 15·3 per 1000 population. This rate is the lowest that ever occurred in the United States. In the rural portion of the registration States the death-rate is even lower, being only 14 per 1000, while that of the urban population was 16·5 per 1000, the latter including all cities having a population of over 8000 in 1900. The year 1908 must be considered as one of extremely low mortality throughout the United States, but while it was marked by a general absence of severe epidemics there was unusual mortality from other causes.

Importance of Government Control of the Sale of Vaccine Virus.

The sale of vaccine virus by private pharmaceutical firms requires a Federal licence. Recently the Public Health Service discovered that a firm which makes vaccine virus one of its products had prepared a large amount of virus which was demonstrated to be contaminated. On reporting this fact to the Government office, the license of the firm was suspended until it had withdrawn all of the contaminated virus from the market. The company then withdrew the condemned product from the market and destroyed it, the value of the amount destroyed being estimated at more than \$14,000. The firm then presented a bill to the Government for the amount of loss, which was refused.

Concentration of Offices of Physicians.

For several years the profession of New York has had a central building devoted exclusively to the offices of medical men and called "The Sydenham." The movement was at first received with marked disfavour, but has now become decidedly popular. In Philadelphia the profession is about to erect a building for this purpose at a cost of \$500,000 and with facilities for 200 offices.

Nov. 6th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Plague.

THE plague returns for the week ending Oct. 2nd showed 3460 deaths, compared with 2595 in the week preceding. Bombay Presidency reports 911, Madas 141, Bengal 31, the United Provinces 236, the Punjab 193, Burma 30, Central Provinces 1063, Mysore State 248, Central India 305, and Rajputana 274. For the week ending Oct. 16th the returns show 4175 deaths, compared with 4123 in the week preceding. Bombay Presidency reports 924, Madras 74, Bengal 61, the United Provinces 367, the Punjab 321, Burma 25, the Central Provinces 1304, Mysore State 216, Central India 430, and Rajputana 421. Stringent sanitary measures and inoculation against plague are reported in progress in Mysore city in view of the large gathering of people expected there for the Dussean festivities this month, which include the holding of the annual agricultural and industrial exhibition, and also in view of the Viceroy's visit to the city towards the end of The health of Mysore is not satisfactory as next month. plague is epidemic, and about 10,000 persons in the vicinity of the palaces have been inoculated. In Bangalore the plague inoculations commenced just two years ago, and as a result of house-to-house inoculation the aggregate to-day reaches 70,000 inoculated and re-inoculated out of a population of 90,000. The resulting immunity has been very marked, in that only about 1 person per 1000 has been attacked by plague.

Vaccination in Benyal.

A series of interesting experiments have been carried out during the past year in various districts of Bengal Presidency, chiefly with glycerinated lymph manufactured in the Central Animal Vaccination Depot, Calcutta. The results achieved appear so satisfactory that the civil surgeons of Howah. Gya, and Midnapore have recommended the substitution of this lymph for the lanoline vaccination paste at present being used. The chief drawback to its use, however, appears to be that it is liable to deteriorate through heat and does not retain its efficiency so long as does the lanoline It also requires careful handling by the vacci-The Sanitary Commissioner intends to give this paste. lymph a further trial exclusively in two or three selected districts, and if successful the question of its general introduction will be considered. A satisfactory feature during the year has been the appointment of a special inspector of vaccination at Orissa. It has given considerable impetus to vaccination in the districts of Puri and Cuttack. This specially trained officer by tact and energy succeeded in overcoming the opposition to vaccination generally shown by villagers, and induced the natives of tracts affected with small-pox and other districts where vaccination had always been resisted to come up for vaccination. By these means an epidemic was cut short at Puri and the mortality greatly reduced. Another result attributed to the same agency was the marked increase in the number of infants vaccinated in Cuttack and Puri districts, especially in the latter. The appointment of special inspectors with local knowledge and status seems to be fully justified, and no doubt the Gorenment of India will in time make these appointments more general.

Instruction in Bacteriology for I.M.S. Officers.

In and after January, 1910, a course of training in clinical bacteriology and laboratory technique is to be made available for officers belonging to the Indian Medical Service at the Central Research Institute, Kasauli. Officers detailed for the course will be permitted to be absent from their stations for four weeks in addition to the actual time occupied by the journey to and from Kasauli, and one day for preparation for each journey. The classes of instruction will assemble in the months of January, March, May, July, September, and November each year. It is to be hoped that the Government of India will see its way to extend the same privileges to the other branches of the medical services in India.

Compulsory Quinine.

The Punjab Government has just issued a circular letter to all heads of departments and deputy-commissioners in the Punjab recommending anti-malarial measures and expressing the hope that during the next three months every endeavour will be made to carry them out. The plague staff has been asked to coöperate. The Punjab Government has also authorised the free distribution of quinine amongst all Government servants drawing less pay than Rs. 10 (13s. 4d.) per mensem, and has recommended the general and regular use of quinine amongst all other classes and ranks of officials. Those who do not take quinine regularly will not be entitled to the usual grant of leave given in case of sickness, if the illness is due to malarial fever, but will be subject to the ordinary leave rules.

Combined Leave Regulations for R.A.M.C.

The Government of India has decided that officers of the Royal Army Medical Corps holding executive staff appointments of limited tenure in India are eligible for combined leave under the provisions of A.R.I., Vol. II., para. 226, which allows of leave for a period of eight months or less on full pay for the first three months, and on ordinary pay for the concluding portion. The chief executive staff appointments open for R.A.M.C. officers in India are sanitary officers of divisions and divisional medical mobilisation. No record of executive staff service is made, however, for medical officers in the quarterly army list, although the same service is freely recorded for the most junior of the combatant branches.

Ocf. 19th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The late Mr. Philip Muskett.

THE death was announced in Sydney on August 25th of Mr. Philip E. Muskett, a well known practitioner in that city. Mr. Muskett was born in 1857 and qualified as L. R. C. P., L. R. C. S. Edin. in 1880. He was subsequently resident medical officer at the Melbourne Hospital and at the Sydney Hospital. He held various official posts in Sydney and was at one time honorary surgeon to the Sydney Hospital. The deceased gentleman was much liked in a large circle of friends, and was well known as the author of several quasi-popular works on dietetics and kindred medical topics.

Remarkable Poisoning Case.

A curious instance of poisoning due to carelessness occurred recently in Sydney. A visitor at the Hotel Arcadia drank a tumbler of water in his bedroom and expired very shortly afterwards. He remarked to his wife that the water tasted strangely. When the account of the occurrence appeared in the daily press a foreigner, who had occupied the same bedroom previously, communicated with the police and informed them that he had been experimenting with a solution for silvering glass and had left the tumbler in which he had seed some chemicals. The cause of death was cyanide poisoning. At the inquest the former occupant of the bedroom was committed for trial on a charge of manslaughter.

Rat Destruction.

Dr. B. B. Ham is determined that rat destruction will be as vigorous an objective of his rule in Victoria as it was in Queensland. He attributes the comparative freedom from plague of Victoria and South Australia to the species of rat and variety of rat-flea found in them. In Australia there are practically only two distinct species of rat—the common grey-brown or Norway rat, living in sewers, and the English rat that infests houses. Dr. Ham thought until recently that the house-rat did not exist in Melbourne but finds that he was mistaken, and urges that measures should be taken for its destruction. There is no legislation at present by which householders can be compelled to keep houses free from rats, and Dr. Ham may find it advisable to recommend the introduction of compulsory legislation in Victoria.

Hospitals and Police.

The Melbourne city coroner recently animadverted strongly on the action of the committee of the Women's Hospital in declining to give information to the police concerning patients in the hospital. The matter arose in connexion with an inquest on the body of an infant supposed to have been murdered. A detective in charge of the case had reason to suppose the mother had been treated at the hospital, but the committee declined to afford any information.

Subsequently the resident medical officer and the secretary were subprenaed and questioned by the coroner. In a leading article commenting on the coroner's remarks the Melbourne Argus upheld the action of the committee and considered the coroner's position mistaken.

Medical School Inspectors.

The Victorian Department of Education has appointed three medical inspectors, who will inaugurate a system of medical inspection of school children in the State. The salaries offered were £550, £500, and £450 per annum, and 35 applications were received. The final choice resulted in the appointment of Dr. Harvey Sutton, Dr. Mary Booth, and Dr. Jean Greig. Dr. Sutton has recently returned from Oxford, where he studied as a Rhodes scholar; and Dr. Mary Booth has had three years' experience as medical inspector in New South Wales.

Tuberculosis Conference.

A conference of local boards of health in South Australia has been held in Adelaide to develop means for better dealing with tuberculosis. The delegates were conducted over the Kalyra and Nunyara Sanatoriums and shown the consumptives' wing at the Adelaide Hospital Several proposals were left over for a further session, information being meanwhile supplied.

Nurses for the Bush.

At the annual meeting of the Women's National Council held recently in Brisbane the Countess of Dudley advocated an extension of the district nursing principle to outlying parts of the back country. The project has been warmly supported by Madame Melba who is at present in Australia. In order to form the nucleus of a fund to carry out a scheme of the kind, Madame Melba is arranging a special concert, the proceeds of which will be handed over to Lady Dudley. Oct. 14th.

Gbitnary.

RICHARD THEODORE STACK, M.D. DUB., F.R.C.S. IREL., L.D.S.R.C.S. ENG., D.M.D. HARV.

On Nov. 11th Dr. Richard Theodore Stack died at On Nov. 11th Dr. Richard Theodore stack died was his residence at Stillorgan, Ireland. Dr. Stack was born in 1849 and was educated at the Royal School, Raphoe, and the University of Dublin, where he graduated with honours, and in his senior Freshman year obtained a classical scholarship. In the medical school his career was one of great distinction. He obtained a medical scholarship, nearly every prize open to him, the first place in his degree list, and (an unprecedented honour)
a double travelling prize, which enabled him to visit the
Vienna Medical School, where he resided and studied for six months. On his return to Dublin Dr. Stack was appointed resident surgeon of the Richmond Hospital and alsoa demonstrator of anatomy in the University Medical School, and he seemed likely to climb to the top of his profession in Dublin. Unfortunately his hearing soon became defective, and recognising that the practice of either medicine or surgery could no longer be carried on by him with satisfaction either to himself or his patients, he determined with characteristic energy and pluck to go to America and join the Dental School in the Harvard University. Having obtained his degree, he returned to Dublin and commenced practice as a dentist with great success. Dentistry at that time-32 years ago-was at a very low ebb in the capital city; by Dr. Stack's tireless energy and enthusiasm new light and leading were infused into a neglected branch of the medical profession. It was partly due to his example that the whole position of dentistry was raised to the high position it now occupies, not only in Ireland, but in the sister countries. Dr. Stack was the founder of the first dental hospital and school in Ireland. He made himself responsible for the funds which built it, and organised one of the first and most successful of the bazaars which have done much from time to time to help the various hospital charities of Dublin. He was also dental surgeon to the Adelaide Hospital, Dublin. He had reached a high position in his adopted profession when he was suddenly struck down 11 years ago by a hemiplegia which deprived him of the use of his right arm, and greatly

interfered with his powers of speech. He, of course, had to retire from practice, but he never ceased to take an interest in the work and the Dental Hospital, in which his portrait, the gift of his colleagues on the staff, now hangs. He was a president of the British Dental Association and a member of the Royal Academy of Medicine of Ireland. Dr. Stack attracted towards himself many friends, and in the district of Mullaghmore his constant acts of charity and deep interest in the people won him their real devotion. For the past few months Dr. Stack's health was visibly failing. He knew the end was drawing rapidly near, and yet he faced death as he had all the difficulties of his life, with the fortitude of a true philosopher. His death was peaceful, and his body rests in his family burying-ground at Cappagh. He is survived by a widow who has received the deep sympathy of his friends, both in Tyrone and Dublin.

THE FEEDING OF LONDON SCHOOL CHILDREN. Assupplemental estimate of £25,000 was submitted to the Education Committee of the London County Council on Nov. 24th to meet the cost of providing meals for necessitous children. It was stated that many more children were being fed this winter than last, the numbers for the week ended Nov. 12th being 41,934 as compared with 22,430 in the corresponding period of last year. Some discussion arose on this report, one or two members expressing the fear that the meals were being given too freely. The Rev. Stewart Headlam, as a member of the Care Committee denied this, declaring that inquiries were unduly stringent. Miss Adler said the experience of the officials was that very few applications for assistance were made which were not warranted. Mr. Jay, an ex-chairman of the Care Committee, on the other hand, said that a large number of cases were put on the list by teachers which could not be regarded as urgent. He also called attention to the extent to which overlapping occurred owing to meals being given to children whose parents already received out-relief. The Care Committee was pressing the Local Government Board to advise on this point. Mr. Ernest Gray said it was the intention of the committee to proceed rigorously against all persons guilty of fraud in obtaining meals. The estimate was approved.

ROYAL DENTAL HOSPITAL OF LONDON.—The annual dinner of the staff and past and present students of the above institution was held in the Whitehall Rooms of the Hotel Métropole on Nov. 20th, when Mr. C. F. Rilot occupied the chair. After the usual loyal toasts had been received, the chairman proposed that of "The Past and Present Students of the Royal Dental Hospital and the Dental School." He gave an interesting retrospect of the history of the hospital and school, and referred feelingly to the old teachers who had passed away. He appealed to the past students to keep in touch with the institution, and in this connexion made some useful suggestions in regard to the value of the hospital Gazette. He thought it would increase the interest of this journal if past as well as present students would record in it now and again some features of novelty met with in their practice, and he should like to see the journal receive more support than it had hitherto received from those who had passed through the hospital and school. He could speak of the progress the school was making, and the teaching, organisation, and facilities were, he thought, second to none. The toast was responded to by a past student, Mr. E. A. Mansell, and a present student, Mr. G. Jackson, both of whom made excellent speeches, in which they expressed their appreciation of the excellent work done by the hospital and school. The recently appointed dean, Mr. W. H. Dolamore, replying for the staff, paid an eloquent tribute to previous deans, and said that much of the success of the school was due to their zeal and energy. The school was flourishing, there were 160 students on the books, and the spirit with which the work was entered into was admirable. Dr. R. J. Probyn-Williams proposed the toast of "The Visitors," to which Mr. H. R. F. Brooks, the President of the British Dental Association, replied. The last toast on the list, that of "The Chairman," was proposed by Mr. J. F. Colyer. The excellent singing of the "Westminster Singers" added considerably to the enjoyment of a very successful gathering.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

TUESDAY, Nov. 23RD.

THE half-yearly session of the General Council of Medical Education and Registration opened to-day at the Council's offices, 299, Oxford-street, London, W. Sir DONALD MACALISTER, the President, was in the chair.

New Members.

Dr. JOHN DIXON MANN (introduced by Dr. R. CATON) took his seat at the Council as the representative of the Victoria University of Manchester.

It was officially intimated that Sir Christopher Nixon. Bart., had been appointed representative of the National University of Ireland for a period of three years from Nov. 11th, 1909.

The President's Address.

The PRESIDENT in delivering his address said: His Majesty the King in Council has been graciously pleased to approve and give effect to the representations which on May 25th you directed to be made, and which I duly communicated to the Privy Council. An Order has accordingly been issued which confers on the registered practitioners resident in England and Wales the power, at the next general election, of returning an additional member to this Council. Thus in about two years' time the directly elected representatives of the practitioners of England and Wales will number four, instead of three as at present. Our respectful acknowledgments are due to the Privy Council for their good offices in commending our request to His Majesty's favourable consideration. You will have learned with much pleasure that His Majesty has bestowed the dignity of a baronetcy on our treasurer, Sir Henry Morris, and on our late treasurer, Sir Dyce Duckworth. The Council will be at one with me in wishing that both our colleagues may long wear these merited honours in health and happiness. The tragic death of Mr. Sydney G. Lushington in the prime of his active powers has deprived the Council of an advise by whose legal skill and practical wisdom it has constantly profited during the past five years. When in 1904 the Council lost the services of Mr. Muir Mackenzie, owing to his official promotion, it felt deeply the withdrawal of an adviser on whose guidance it had confidently relied for some 25 years. On his recommendation we invited Mr. Lushington to act on occasion as assessor. We recognise to day that in thus advising us Mr. Muir Mackenzie rendered us a service which deserves our warmest gratitude. Session by session Mr. Lushington gained an ever surer place in our esteem, not only for his professional but for his personal qualities. He knew how to combine special knowledge with sound common sense, firmness with courtesy, and respect for precedent with open-mindedness in presence of new conditions. Many who knew intimately his character and attainments thought him destined for high office in his profession. To these friends, and to the members of this Council which he served so well, his untimely death brings more than regret for the interruption of a distinguished career; it brings also a sense of sorrow as for a personal loss. Acting on what I believed would be your desire, I arranged that the Council should be represented at Mr. Lushington's funeral; and I sent a message of sympathy and regret to his relatives, which has been gratefully acknowledged by them. As it was necessary to instruct counsel to advise us with reference to certain penal cases, and to act as assessor at inquiries to be held during the present session, I consulted Mr. Muir Mackenzie and our solicitor, Mr. Winterbotham, on the subject. By their advice Mr. A. H. Bodkin has been requested to give us his assistance during this week. Mr. Bodkin is familiar with the procedure of the Council, and he holds a public legal appointment under the Attorney-General similar to that previously held by Mr. Muir Mackenzie and Mr. Lushington. It should perhaps be explained for the benefit of new members that the Council has not hitherto. made any permanent appointment to the office of Judicial Assessor. Counsel is simply instructed from time to time in the customary way, as need arises. Before

the end of this meeting I shall take occasion to ascertain your wishes as to future arrangements in this respect. Another distinguished man, who for 10 years was honourably associated with the Council as the direct representative from Ireland, has passed away during the present month. Sir William Thomson, C.B., had won a prominent place among his brethren for his manifold services to the profession and to the State. Those who sat with him in this chamber will long cherish the memory of his impressive bearing and his helpful interest in the Council's work. On your behalf I have sent a letter of condolence to Lady Thomson and her We have to welcome, as a new member, Dr. John family. Dixon Mann, whom the Victoria University of Manchester sends to the Council in the place of Professor Young. He will find that his fame as a medical jurist has preceded him, and that the Council reckons with confidence on his ability to assist it in dealing with the questions, partly medical, partly juridical, which come before it. He will find also that the associations left by Professor Young are of so happy a character that it is already a recommendation to be his successor. We receive back Sir Christopher Nixon in a new guise, but with the old In May he sat as the member for the Royal cordiality. University of Ireland, of which he was Vice-Chancellor. The Royal University expired a few days ago, and with it his membership. But the National University of Ireland and the Queen's University of Belfast have now arisen in its stead. Sir Christopher returns with undiminished lustre as member for the National University, in which he is both professor of medicine and Vice-Chancellor. Under recent Acts of Parliament the Queen's University of Belfast and the University of Bristol have each acquired the right to appoint a Member of the Council, but the Registrar has not yet received intimation that the appointments have actually been made.

The movement for the application to the Provinces of the Dominion of Canada of Part II. of the Medical Act, 1886, continues to make progress. The Province of Prince Edward Island has now petitioned His Majesty in Council that the benefit of medical recognition, on reciprocal terms, may be extended to it. Negotiations on the question are proceed-ing, and as the Provincial law appears to afford due facilities for the local registration of all practitioners registered in the United Kingdom, a satisfactory agreement should be reached. A recent alteration in the Provincial law of Quebec appears to the Executive Committee to have the effect of limiting, in a manner which was not contemplated during the original negotiations, the recognition in Quebec of qualifications that are registrable in this country. As the question raised concerns in the first instance the Privy Council rather than the Medical Council, the attention of the Lord President has been called to it, and I have reason to believe that inquiries will be made through the proper official channels. We shall no doubt be informed of the result in due course.

The Committee, which were appointed to consider various proposals for legislation on the subject of anæsthetics, were informed officially that no progress was likely to be made with these proposals during the present session of Parliament. I therefore refrained from summoning the Committee to meet during the recess, but a meeting will be held during the present week, and a report on the subject will be prepared for your consideration. Meanwhile I was asked, as your President, to appear before a Departmental Committee appointed by the Home Secretary and give evidence regarding the action taken by this Council to promote the practical study of ansesthetics by candidates for medical qualifications. tions. I did so on Nov. 19th and laid before the Committee the relevant extracts from your minutes. The chairman of the Committee expressed the desire that any further resolutions which the Council may adopt during the present session might be communicated to him.

The objections taken last May by the Council, on legal grounds, to certain provisions in the proposed draft Charter of the British Medical Association, were communicated to the Lord President of the Privy Council for his information. There is reason to believe that our criticisms, and those offered by various other bodies, have been brought by his lordship to the notice of the Association. It is probable that an amended draft, in which account is taken of these criticisms, will in due course be substituted by the Association for the original proposal.

The report of the Education Committee on the distribution of the medical student's time, as between the several parts of the curriculum, will in accordance with your resolution be discussed. Its terms have been long before the Council, and have no doubt been carefully considered by members individually. It is to be hoped that the Council is now ready to discuss and to decide upon the important and yet simple proposals it contains for the improvement of medical education, more especially in regard to the branches of knowledge on which professional competence mainly depends. The Pharmacoposia Committee held a two-days' meeting last month for the consideration of the suggestions for the revision of the Pharmacopæia made by the several medical authorities with respect in particular to the omission or inclusion of specified drugs and preparations. With the assistance of the secretary, Dr. Tirard, the committee were able to arrive at provisional conclusions in a large number of instances. These will form the basis for further inquiry, and at a later stage will come up for definitive settlement. Meanwhile the Committee of Reference in Pharmacy continues its labours for the improvement, from a pharmaceutical point of view, of the several monographs in the present issue of the Pharmacopœia.

The November session is understood to be set apart especially for disciplinary inquiries. Owing perhaps to the more systematic notification by the civil authorities of offences and convictions in which professional men are concerned, we have on this occasion a considerable number of such cases to deal with. Some of these are of a novel character, and will call for your special attention. have been patiently studied by the Penal Cases Committee, with the help of our legal adviser, and in the light of the documentary evidence submitted. In every instance the committee has satisfied itself that there is a case which prima facic calls for an answer, and it has accordingly authorised the institution of an inquiry by the Council before which alone the case and the answer can be fully stated and supported by oral or other testimony. The question whether it is practicable in medical cases, as it is in dental cases, to delegate such inquiries, so far as the facts are concerned, to any body of members short of the full Council, has been occupying the attention of the Executive Committee. But in view of certain difficulties, as yet unsurmounted, the committee are not at present prepared to offer definite proposals for your consideration. In so important a matter it is necessary that the statutory responsibilities of the Council should first be fully ascertained and discharged. Even serious considerations of convenience and economy cannot be allowed to outweigh considerations of legal obligation, should these prove to be in conflict. Personally I express the hope that the Executive Committee may discover some way by which they may be reconciled.

The Indian Medical Service.

A return was received by the Council showing the results of the competition held in July, 1909, for commissions in the Indian Medical Service.

The Medical Curriculum.

Dr. J. Y. MACKAY moved the adoption of the recommendations contained in the report of the Education Committee on the distribution of the medical student's time as between the several parts of the curriculum. The recommendations of the report which was presented last session were as follows :-

report which was presented last session were as follows:—

For the purposes of this recommendation the subjects of the curriculum are arranged in two groups, the earlier group comprising the preliminary sciences and anatomy and physiology, the later group embracing all the remaining subjects, exclusive of pharmacy.

The regulations of the bodies should be so framed as to secure (1) for the study of the subjects of the later group the reservation of a period equivalent in value to 23 excelmic years (27 months) of undivided study, half time-value being allowed for periods of work in which studies in the earlier and later groups overlap; and (2) the reservation of a period of two accademic years (21 months), in which the studies of the later group shall have the undivided attention of the studient.

They had, he said, two definite proposals before them for the extension of the curriculum. One was the proposal that the curriculum should be extended to six years, and the other that the curriculum should be extended by means of a "block," or more than one "block," introduced at certain stated places, and the student prevented from passing a block until all his earlier subjects had been completed. Regarding the proposal that the curriculum should be lengthened to six years, he said this could only be carried out if there was a consensus of opinion on the part of experts in medical education that the extension was desirable. He thought that the general position was that the time was not ripe for the extension of the curriculum to six years. The committee had had brought to their notice no request from any of the great licensing and teaching bodies that the curriculum should be extended. He referred to the reports which the Council had received on the subject of the examinations conducted by the various bodies. In the Victoria University of Manchester 72 per cent. of the students completed in 5½ years. At Glasgow University, the examinations of which had been favourably reported upon, 56 per cent. of the students passed in 5½ years. It would be a very serious hardship if the Council were to delay men passing examinations when they were apparently well qualified to do so, and to impose upon them by any artificial rule a demand for a six years' curriculum. Many of the men passing so quickly were the best of their time. He would like to say for himself that, in his view, the best possible thing the licensing bodies could do was to say that their students after passing their examinations should spend six months of study in a properly staffed hospital. The average age, taking the whole country, at which students commenced their curriculum was 194 years. The average length of the course was 7 years, and the average age of qualification was 264 years. 34 per cent. of the men qualified in 5½ years, and the remaining 66 took six years or more. Council might well consider what would happen if they were to have a compulsory extension of the curriculum to six years. There were three possibilities to consider. If the standard of instruction and examination were raised entirely from a five years' level to a six years' level the change would affect all students. The men who passed in five years now would require six years, and the men who required six years now would need seven, and so on. There was a second possibility. The standard might not be raised. All that would happen then would be that some 34 per cent. of the men would be delayed in their curriculum. If they did somewhat increase the standard no doubt a part of the increase would go to the earlier subjects and not to the final subjects in which the Council was most interested. The Education Committee, therefore, did not propose at present that the curriculum should be lengthened. No doubt new subjects were constantly added to the medical course. The Council had recently decided that the teaching of anæsthetics should be carried on in a more thorough way than it had been in the past. The committee had also discussed the "block" system. There was no doubt that there had been undue encroachment on the final examination. The Education Committee regarded this state of matters as not being what it ought to be. The committee believed that the Council should lay down a fixed minimum period for final study. They had selected this minimum period as one of 27 months. They wanted to lay down the general proposition that half the course should be given to the final subjects. He did not think the Council could go the length of saying that overlapping should be abolished altogether, but he thought it could go the length of saying that overlapping must not go too far. The Education Committee had adopted as a principle that overlapping study should not be carried beyond the third year. It would, no doubt, be much simpler to say that the course should be divided into two parts, but it became necessary in view of actual circumstances to recognise an arrangement of overlapping. The proposal of the committee was not a drastic one, but it was very important. It would have three effects. It would ensure that the final examination would get its fair share of the curriculum. Further, the Council by taking this step would be claiming its position that it concerned itself with teaching as well as examination. Then if it passed these recommendations there would be a minimum for the final examination, and that minimum could be extended from time to time as the Council thought fit. There was a proposal laid before the Education Committee that there should be a "block" at two stages, and that preliminary sciences should be completed before physiology and anatomy were entered upon. The committee, however, thought it inadvisable to propose that a "block" should take place at that part of the course. They thought the block" should be established between physiology and anatomy on the one hand and the final examination on the other, and if that were done, enough would have been accomplished for the present.

Sir Christopher Nixon seconded.

Sir Hugh Beevor asked what percentage of the students who were examined would be affected by these regulations.

Dr. MACKAY said it would not be a very large percentageprobably 4 or 5 per cent.

Dr. NORMAN MOORE said they were all agreed that the whole object of medical education was to obtain a knowledge of medicine, surgery, and midwifery. How could that object best be obtained? The final branches of instruction could not be fully beneficial to the student unless he spent a sufficiently long time upon them. The reason for recommending a long period for the final studies was that their acquisition must be by a very slow and gradual method. If the Council accepted the report, it did no more than say that a long period ought to be given to final studies, and that period ought not to be invaded by any other subject whatever. He hoped that the Council would strongly support the view that the final studies would be allowed a definite uninvaded period in the regulations by the qualifying bodies.

Sir CHARLES BAIL pointed out that there were some circumstances regarding the Dublin students which did not apply in the same way to the English and Scotch students. There had been a custom for many years in Dublin for a very large number of students, including the very best students to take a period of residence at a hospital as a pupil for four or six months. That was far better experience for them than could be obtained by attendance three or four hours a day. In the Dublin University they had for a year or two adopted the "block" system, and so far as their experience went it was very satisfactory. The "block" put on at Dublin was that a man must pass the examination which in normal circumstances should be passed at the end of the second year before he commenced his course at the beginning of the fourth. Hospital practice was commenced in the second year, and the body which he represented would hesitate to support any arrangement which would interfere with students becoming resident pupils.

Sir THOMAS MYLES expressed concurrence with the recommendations of the committee, but urged that they should be

framed with a certain amount of elasticity.

Dr. R. SAUNDBY said that his opposition to these proposals went further than had been expressed by any previous speaker. He did not like hard-and-fast ruleswater-tight compartments from which there was no escape. He very much regretted that after all these years which the Education Committee had spent considering this matter, they only brought up such an insignificant and unimportant recommendation. Those them who were final teachers could not be satisfied There were a good with medical education as it was now. many men who were allowed to go into the profession whose preliminary education was defective. Men who came for instruction in medicine and surgery often showed that the had no adequate knowledge of chemistry, anatomy, or physiology. They seemed to think that those subjects. having been passed, should not be longer kept up. That showed the defect of the present method of medical education, and the more they adopted water-tight compartment, the more encouragement would they give to it. They wanted to get men to the final examination with a knowledge of physiology and anatomy. He further protested against the growing practice of allowing students to take their examinations piecemeal.

Sir THOMAS FRASER said that the body which he represented expressed its warm concurrence with these recommendations They agreed that there should be a certain amount of latitude. In Edinburgh University students came from the colonies and from India, and a large number of these men from India had already attended three or four years in reputable institutions. They came to Edinburgh to get their degrees and had to pass all the examinations there. It would be very undesirable to ask them to comply with the requirements of the "block" system. Cases of that description cought to be attended by system. description ought to be attended to. At the same time thee whom he represented thoroughly concurred in the recom He thought that the Council mendation as to the "block." would make a great mistake if it placed too much emphasis on hospital and clinical work. It was most valuable to train the intellect of the men so that they would afterwards be able to obtain a very complete knowledge for the practice of midwifery, medicine, and surgery. He thought the stodent

would be all the better in his after career if not too much emphasis was laid on hospital work.

Sir HENRY MORRIS pointed out that only 13.8 per cent. of medical students passed through their curriculum in five The majority of them took 6 years and 11 months.

Sir CHRISTOPHER NIXON thought that at the present stage the recommendations of the committee were the most practical that could be passed by the Council, although personally he would have been in favour of something more. He dissented from what had been said by Sir Thomas Fraser.

Dr. NORMAN WALKER moved the adjournment of the debate, and this was agreed to.

The Council then adjourned.

WEDNESDAY, NOV. 24TH.

The Council resumed and most of the sitting was occupied in the consideration of penal cases.

Medical Rews.

ROYAL COLLEGE OF SURGEONS OF ENGLAND. The annual meeting of the Fellows and Members was held on Nov. 18th at the College, Mr. Butlin presiding. A report of the proceedings will be published in THE LANCET. At the First Professional Examination for the Licence in Dental Surgery the following gentlemen were approved in the subects indicated below

Surgery the following gentlemen were approved in the subjects indicated below:—

Mechanical Dentistry and Dental Metallurgy.—Ernest Walter Bacon, Guy's Hospital; Harold Barrett, Royal Dental Hospital; Victor Emanuel Dawson Bergh, Guy's Hospital: William Reginald Brandon, Manchester University; Eric James Moore Charter and John Stanley Cocks, Guy's Hospital; Arthur Caspar Stevenson Cottam, Royal Dental Hospital; Arthur Caspar Stevenson Cottam, Royal Dental Hospital; Graham Cotterell, Birmingham University; James Kenneth Crawford, Royal Dental Hospital; Reginald Gilbert Farrington, Guy's Hospital; William Ewart Halliana, Royal Dental Hospital; George Gerald Jack, Royal Dental Hospital; Ernest Victor Jones and Theodore Hesketh Jones, Royal Dental Hospital; Lonel Seott Langley, Guy's Hospital; Harold Woodhead Mawson, Leeds University; Bertie Mendleson and Roy Harry Barkly Pallett, National Dental Hospital; John Griffith Richards, Russell Rodgers, and Hubert Dennis Shore, Guy's Hospital; Francis Henry Smith, Hugh Dynevor Stephens, and Oscar Henry Titmas, Royal Dental Hospital; John Griffith Richards, Russell Rodgers, and Hubert Dennis Shore, Guy's Hospital; Francis Henry Smith, Hugh Dynevor Stephens, and Oscar Henry Titmas, Royal Dental Hospital; Thomas Reginald Trounce, Guy's Hospital; Ernest Victor Breen Turner, Liverpool University; Douglas Wain, Geoffry Heegaard Warner, and Clifford Toulson Watson, Guy's Hospital; Alan Ayscough Wilkinson, Birmingham University; William Jefferson Wilkinson, Pennsylvania University; John Fitzgerald Williamson, Royal Dental Hospital; John Grussell Hospital; John Wilfrid Hall, Birmingham University; Robert John Harley-Mason and Lawrence Richards Haydon, Royal Dental Hospital; Harold Hospital; Harold Hospital; Harold Hospital; Harold Hospital; Hospital; Henry James Burch, Guy's Hospital;

UNIVERSITY OF LONDON.—At examinations ald in October the following candidates were successful: THIRD M.B., B.S. EXAMINATION.

Hind M.B., B.S. Examination.

Honours.—†Emile Marc A. Duvivier, Guy's Hospital; †Geoffrey Jefferson, Victoria University of Manchester; †Guy Harcourt Peall, Guy's Hospital; *†Harry Platt (University Medal), Victoria University of Manchester; *William Rees Thomas, Charing Cross Hospital; †Ernest Frederick Gordon Tucker, London Hospital; and *Joseph William James Willcox, University of Bristol.

Pass.— Malcolm Edward Ball and Richard Pitt Ballard, Guy's Hospital; Ella Mabel Barker, London (Royal Free Hospital) School of

Medicine for Women; Alfred Bernstein, Victoria University of Manchester; Benjamin Biggar, St. Bartholomew's Hospital; Anne Borrow, London (Royal Free Hospital) School of Medicine for Women; Hugh Leonard Burton, King's College Hospital; Herbert D. Clementi-Smith, St. Bartholomew's Hospital; Arthur Davies, Westminster Hospital; Maurice Rowland Dobson and Raymond Charles Viner Bdsall, Guy's Hospital; Arthur Oxley English, Middlesex Hospital; Eric Leigh Fyffe, St. Thomas's Hospital; Arthur Atkins Greenwood, Guy's Hospital; David John Harries, University College Hospital; Charles Reginald Hoskyn, St. Bartholomew's Hospital; William Stanley Hughes, St. Mary's Hospital; Maurice L. Corrie Irvine and Walter Burford Johnson, St. Thomas's Hospital; John Edward Lionel Johnston, St. Mary's Hospital; Robert Henry Hatten Jolly, Charing Cross Hospital; Bertram Arthur Lloyd, University of Birmingham; George Gibson Lyttle, Queen's University. Belfast; Elias Leopold W. Mandel, Guy's Hospital; Edgar William Matthews, King's College Hospital; Edwin Bertram Morley, London Hospital; John Sherwood New, St. Bartholomew's and University College Hospitals; Arthur Henry Penistan, London Hospital; William Joseph Petty, St. Thomas's Hospital; Cecil John Rogerson, University College Hospital; Francis Charles Searle, St. Bartholomew's Hospital; Charles Woolley Shepherd, Charing Cross Hospital and University College, Cardiff; Gravenor Robert Strong, Westminster Hospital; John Balley Tackaberry, Middlesex Hospital; Margaret Grace Thackrah, B.A., London (Royal Free Hospital) School of Medicine for Women; James Richard Henry Turton, St. Bartholomew's Hospital; Richard Tudor Williams, St. Bartholomew's Hospital; Ernest William Mitney, St. Thomas's Hospital; College Hospital; Richard Tudor Williams, St. Bartholomew's Hospital; Ernest William Mitney, St. Thomas's Hospital; College Hospital; Richard Tudor Williams, St. Bartholomew's Hospital; Ernest William Mitney, St. Thomas's Hospital; College Hospital.

Distinguished in Medicine

* Distinguished in Medicine. † Distinguished in Surgery.

The following candidates have passed in one of the two groups of subjects :-

Group I.—Jackson Arthur Atkinson. St. Mary's Hospital; Alfred David Eldred Bayliss, University College Hospital; Henry William Catto, Guy's Hospital; Ethel Mary Connan and Nina Gertrude Cotton, London (Royal Free Hospital) School of Medicine for Women; James Philip Elias, Victoria University of Manchester; Edgar Lionel Elliott, Guy's Hospital; William Moses Feldman, London Hospital; Dossibal Rustomji C. Patell, London (Royal Free Hospital) School of Medicine for Women; Wilfrid Langrish Pink, St. Thomas's Hospital; Arthur Haig Pollard, London Hospital; Geoffrey Price, St. Thomas's Hospital; Simon Isaac Rabbinowitz, London Hospital; Ernest Edward Andrew T. Rigg, University College Hospital; Harfy Dudley Rollinson, University of Birmingham; and Robert Heywood Wilshaw, Victoria University of Manchester.

Manchester.

Group II.—Mary Howard Atherton, London (Royal Free Hospital) School of Medicine for Women; George Henry Chisnall, London Hospital; Philip Crawford Conran, Middlesex Hospital; Robert Lawson Crabb, University College Hospital; Josiah Rowland B. Dobson, University College, Cardiff, and St. Bartholomews; Hospital; Douglas Green, University of Sheffield; Arthur Rocyn Jones, David Kennedy, and John Stephen Herbert Lewis, University College Hospital; Joseph Pearson Little, London Hospital; Etael Mary Morgan, London (Royal Free Hospital) School of Medicine for Women; Hubert O'Meara, University College Hospital; Arthur Borland Porteous, St. Mary's Hospital; George Francis Rawdon Smith, University of Liverpool: Tom Stansfield, Guy's Hospital; Norman Tattersall, Victoria University of Manchester; Gottfried Oram Telchmann, Middlesex Hospital; and Walter Weir, St. Thomas's Hospital and Epson College.

N.B.—This list, published for the convenience of candidates, is issued ubject to its approval by the Senate.

Society of Apothecaries of London.—At examinations held recently the following candidates passed in the subjects indicated:

Surgery.—B. T. Lang (Sections I. and II.), Cambridge and St. Bartholomew's Hospital.

Medicine.—S. Danziger (Sections I. and II.), Manchester; C. J. Thompson (Section I.), Birmingham; and T. A. F. Tyrrell (Sections I. and II.), St. Mary's Hospital.

Forensic Medicine.—S. Danziger, Manchester; C. P. A. de L. Pereira, Birmingham; and T. A. F. Tyrrell, St. Mary's Hospital.

Midueiren.—S. Danziger, Manchester; and W. H. Watson, Guy's Hospital.

The diploma of the Society was granted to the following candidate, entitling him to practise medicine, surgery, and midwifery: T. A. F. Tyrrell.

ROYAL COLLEGE OF SURGEONS IN IRELAND: FELLOWSHIP EXAMINATION.—The following candidates having passed the necessary examination have been admitted Fellows of the College :-

D. Adams, Sheffield; W. V. Coppinger, Captain, I.M.S.; M. G. Dobbyn, Bristol; J. B. Dordi, Bombay; M. W. Falkner, Captain, R.A.M.C.; J. K. Freyer, Orange, New South Wales; C. Greer, Mellbourne, Victoria, Australia; H. W. A. Kay, Pretoria, Transvaal; Miss K. F. Lynn, Rathmines; F. McKee, Hillsborough; J. B. Moore, Belfast; C. E. Murphy, Dover; T. North, London; T. T. O'Farrell, Dublin; H. R. C. Rutherford, Ballinasloe; W. S. Sharpe, Major, R.A.M.C.; C. Sullivan, Rathangan, co. Kildare; and W. R. Wilson, Penzance, Cornwall.

The following candidates passed the primary part of the Fellowship examination:

Arthur Chance, jun., O. J. O'Hanlon, and H. J. Smyly.

TRINITY COLLEGE, DUBLIN.—In Part II. of the Final Medical Examination held recently the following candidates were successful:—

Medicine.—Adams Andrew M'Connell, Brindley H. Moore, Peter H. Lemass, William R. Watson, Louis Trichard, Edwin B. Bate, Robert E. Lee, James D. Murphy, Hugh S. Metcalf, Charles H. Denham, and William H. Hart.

FOREIGN UNIVERSITY INTELLIGENCE .-Cassel: The title of Professor has been granted to Dr. Rosenblath, Director of the District Hospital, and to Dr. Mense, who has written many papers on Tropical Hygiene.-Gratz: Dr. Otto Loewi, Assistant in the Vienna Pharmacological Institute, has been offered the chair of Pharmacology and Pharmacognosis - Halle: Dr. Heinrich von Hosselin, Oberarzt of the Medical Clinic, has been recognised as privatdocent of Medicine. - Hamburg: Dr. Jollasse, senior medical officer of St. George's Hospital, Dr. Fraenkel, prosector in the Eppendorf General Hospital, and Dr. Simmonds, prosector in St. George's Hospital, have beengranted by the Hamburg Senate the title of Professor.—*Heidelberg*: Dr. R. O. Neumann is taking charge of the Hygienic Institute for the current winter session as no appointment has been made to the chair vacated by the retirement of Dr. Knauff.-Kharkoff: Dr. A. Sommer, Prosector to the Würzburg Anatomical Institute, has been appointed Extraordinary Professor of Pathological Anatomy. - Magdeburg: Dr. Habs, Director of the Hospital in the Old Town, has been granted the title of l'rofessor. - Palermo: Dr. Carmelo Ciaccio has been recognised as privat-docent of Pathological Histology and Dr. Alessandro Amato as privat-docent of General Pathology.—Rome: Dr. Gaetano Fichera has been recognised as privat-docent of External Pathology. Dr. Giuseppe Montesano has been recognised as privat-docent of Psychiatry and Dr. Cardini as privat-docent of the History of Medicine .-- Strasburg: It is rumoured that the chair of Ophthalmology is likely soon to become vacant. - Turin: Dr. C. Vignolo-Lutati of Bologna has been recognised as privat-docent of Dermatology.—Vienna: Dr. Uhthoff of Breslau has declined the chair of Ophthalmology vacated by the death of Dr. Schnabel; Dr. Wilhelm Mitlachen, privat-docent of Pharmacognosis, has been promoted to an Extraordinary Professorship; Dr. Karl Reiter has been recognised as privat-docent of Medicine; and Dr. Hans Lauber as privat-docent of Ophthalmology. - Würzburg: Dr. Adolf Treutlein, who was until about a year ago privatdocent of Military, Naval, and Tropical Hygiene, accepted an appointment as Director-General of the Health Department of the Government of Bolivia, but having found his post untenable on account of political and financial troubles has now returned to his former position on the University staff.

THE NATIONAL DENTAL HOSPITAL.—On Friday evening, Nov. 19th, Sir Thomas Barlow, Bart., K.C.V.O., presided at the annual dinner of the past and present students of the National Dental Hospital, which was held at the Trocadero Restaurant, Piccadilly, W. The toast of "The having been drunk with musical honours, Sir Thomas Barlow proposed "The National Dental Hospital and College," with which he coupled the name of Mr. Sidney with which he coupled the name of Mr. Sidney Spokes, the dean. He commenced his speech, which was listened to with marked attention, by referring to the inadequate support which dental hospitals received from the public. Dealing with the inspection of school children he said that no other educational legislation was so important as the enactment in regard to this matter. The medical inspection of school children had in it an enormous potentiality which the medical profession would do well to accentuate and drive home. If this were done the next generation would see their people much more physically efficient than the present one. The arrangements made for the care of the teeth of the children were of the utmost importance, and he appealed to both past and present students of the Dental Hospital to help the educational authorities in every possible way. At the same time the labourer was worthy of his hire, and that should not be forgotten by workmen's clubs and municipal authorities. It was extremely difficult to get those who were uneducated in the subject of the care of the teeth to realise its extreme importance, but if once the matter became well under way then even if the remuneration were but meagre and inadequate at first time would justify the result, and in the end the dentist

would be on a better footing. Speaking of dental work generally, he pleaded for a more intimate connexion between the dentist and the medical man. The medical student and the dental student began their work side by side, he said; medicine and surgery were in need of dentistry, and dentistry could not get on without surgery. The collateral working of the three branches was for the benefit of the patient. He also desired to see a wider field in medical research which should not be restricted to the few but should even find a place in the teaching of students. That would be for the good of humanity. Mr. Spokes, in replying, said that certain structural arrangements in the hospital were contemplated in order that the building might be more efficient, and he appealed to all present to assist in raising the necesary funds. Even if they were unable to do so personally they might do so indirectly by pointing out when suitable opportunities occurred the importance of the work done by the hospital. The dental surgeon was quite willing to do his share of the public work involved in the inspection of school children, but when as the result of an enlightened public opinion the demand was made for an adequate supply of dentists it would be found that there were not enough dentists to do the work. Until the public made the demand they could not expect to get the supply. The medals and certificates won by the students during the session 1908-09 were then handed to the successful competitors by Sir Thomas Barlow. Mr. C. Stacey won the Ash prize, Mr. C. L. Donne and Mr. C. Stacey the Cottrell prizes, and Mr. Donne the Rymer medal. toast of the "Past and Present Students" was proposed by Dr. Dudley Buxton, who pointed out that it was a dentist who first discovered nitrous oxide, and a dentist also who that he was not fit to use it. Mr. Sidney Rose and Mr. Cecil L. Donne replied. Dr. H. P. Noble proposed "The Visitors." which was responded to by Mr. F. S. Eve. Dr. James Maughan proposed "The Chairman." A well-rendered musical programme added to the pleasure of an enjoyable evening.

LIVERPOOL HOSPITAL SUNDAY thirty-ninth annual meeting of the Hospital Sunday Fund was held at the Town Hall on Nov. 10th, the Lord Mayor presiding. The receipts from the collections made on Hospital Sunday of 1909 were £6235 18s. 5d., against £6423 15s. 4d. in 1908, being a decrease of £187 16s. 11d. The total amount available for distribution was £6333 12s. 5d... and of this sum £6297 17s. 3d. had been paid over to the joint Hospital Sunday and Saturday Fund, while a balance of £35 15s. 2d. had been carried forward. alluded to the fact that each year the hospitals throughout the city were spending large sums of money to increase their accommodation in the most scientific manner. The recent rebuilding of the Children's Infirmary, the new dentahospital, the new out-patients' departments in connerion with the Royal Infirmary and Royal Southern Hospital, at additional operating theatre at the David Lewis Northern Hospital, the proposed rebuilding of St. Paul's Eye Hospital, and the New Maternity Hospital, all bore witness to the keenness and enthusiasm of the citizens in providing the best that could be obtained to relieve the suffering poor. The committee desired to thank Mr. George Nicholson for his generous offer to bear the entire cost of the expenses of the Hospital Sunday Fund for this year, thus enabling the committee to distribute every penny contributed to the fund. Sir William H. Tate, Bart., kindly offered to guarantee the amount of the expenses during the coming year, not exceed-The honorary treasurer deplored the fact ing, say, £250. that the total amount distributed by the joint Hospital Saturday and Sunday Fund was £1500 less than last year.

BOOKS, ETC., RECEIVED.

AMERICAN DERMATOLOGICAL ASSOCIATION (Secretary: Dr. Grover Wende, Buffalo),

Transactions of the American Dermatological Association at its Thirty-second Annual Meeting held in Annapolis, Marjard Sept. 24th and 25th, and in Baltimore, Sept. 26th, 1908. Price not stated.

APPLETON, D., AND COMPANY, New York and London.

Practical Dietetics. With Special Reference to Diet in Discuss.

By W. Gilman Thompson, M.D. Fourth edition, illustrated, enlarged, and completely rewritten. Price 21s. net.

The Diagnostics of Internal Medicine. By Glentworth Reeve Butler, M.D., Sc.D., LL.D. Third revised edition. Price 25% net. ARNOLD, EDWARD, London.

Text-book of Medical Treatment (Alphabetically arranged). By William Calwell, M.A., M.D. Price 16s, net.

ARROWSMITH, J. W., Bristol. (SIMPKIN, MARSHALL, HAMILTON, KENT, AND Co., LIMITED, London.)

Industrial Diseases and Accidents. By W. J. Greer, F.R.C.S., D.P.H.I. Price 7s. 6d. net.

BAILLIERE, TINDALL, AND COX, London.

Chemical Notes and Equations, Inorganic and Organic. By G. H. Gemmell, F.I.C., F.C.S. Second edition. Price 5s. net.

The Poisons and Pharmacy Act, 1908. (8 Edw. 7, Ch. 55.) With Notes by H. Wippell Gadd, of the Middle Temple, Barrister-at-Law. Price 1s. net.

BLACK, ADAM AND CHARLES, London.

Primer of Statistics, IBy W. Palin Elderton and Hthel M. Elderton. Price not stated.

CASSELL AND COMPANY, LIMITED, London, New York, Toronto, and

Manual of Military ()phthalmology. For the Use of Medical Officers of the Home. Indian, and Colonial Services. By M. T. Yarr, F.R.C.S.I., Lieutenant-Colonel, Royal Army Medical Corps. Second edition. Price 6s.

The Case against Christian Science. By Stephen Paget, F.R.C.S. Being Papers read at the Church Congress, Swansea, and the Annual Meeting of the Congregational Union, Sheffield. Price 6d. net.

6d, net.

CHURCHILL, J. AND A., London.

Transactions of the Ophthalmological Society of the United Kingdom. Volume XXIX. Session 1908-1909. With List of Officers, Members, &c. Price 12s. 6d.

CHURCH LADS' BRIGADE, London.

Manual for the Church Lads' Brigade Medical Corps. Fifth edition. Price not stated.

CLARENDON PRESS, Oxford. (FROWDE, HENRY, London, Edinburgh, New York, Toronto, and Melbourne.)

A History of the Oxford Museum. By H. M. Vernon, D.M., and K. Dorothea Vernon. Price 1s. 6d. net.

Browne's Religio Medici and Digby's Observations. Price 5s. net.

COLLINGRIDGE, W. H. AND L., London.

The Months of the Year. By the Rev. Pemberton Lloyd, M.A. Price 5s. net.

CULLEY, ROBERT, London.

Christian Healing. The Words and Facts of the New Testament on the Subject, and Some Arguments and Conclusions to be drawn from them. By T. Farmer Hall. Price 6d. net.

DUNLAP PRINTING Co., Philadelphia.

Philadelphia General Hospital Reports. Volume VII. 1903. Edited by Herman B. Allyn, M.D. Price not stated.

EUGENICS EDUCATION SOCIETY, London.

Rasays in Eugenics. By Sir Francis Galton, F.R.S. Price 1s. 6d. net. PISCHER, GUSTAV, Jens.

Handbuch der Gesamten Therapie. In sieben Bänden. Herausge-geben von Dr. F. Penzoldt und Dr. R. Stintzing. Vierte umgearbeitete Auflage. Siebente Lieferung. Price M.4.50 Theodorus Priscianus und die Römische Medizin. Von Dr. med. et Jur. Theodor Meyer. Price, paper, M.7.; bound, M.8.

FISCHER'S MEDICIN. BUCHHANDLUNG H. KORNFELD, Berlin.

Therapeutisches Taschenbuch der Nervenkrankheiten. Von Dr. W. Alexander und Dr. K. Kroner. Mit einem Vorwort von Geh. Med.-Rat Prof. Dr. Goldscheider. Price M.3.50.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.

Oxford Medical Publications. A System of Syphilis. In six volumes. Edited by D'Arcy Power, M.B. Oxon., F.R.C.S., and J. Keogh Murphy, M.D., M.C. Cantab., F.R.C.S. With an Introduction by Sir Jonathan Hutchinson, F.R.S. Vol. III., price £22s. per volume net; or to subscribers, £10 10s. net for the set of six volumes.

GLAISHER, HENRY J., London. (CHICAGO MEDICAL BOOK COMPANY, Chicago.)

Soured Milk and Pure Cultures of Lactic Acid Bacilli in the Treatment of Disease. By George Herschell, M.D. Lond. Second edition. Price 2s. 6d. net.

HIBSCHWALD, AUGUST, Berlin.

Bibliothek v. Coler—v. Schjerning. Band XXVIII. Sanitätestatistische Betrachtungen über Volk und Heer. Von Otto von Schjerning. Price, M.3.

Das Erkenntnisproblem und seine kritische Lösung. Von Berthold Kern. Price M.5.

Jouve, HENRI, Paris.

The Thermal Springs and the Climate of Estoril in Chronic Rheumatism and Gout during Winter. By Dr. D. G. Dalgado, of the Royal Academy of Sciences of Lisben. Price 2s.

KARGER, S., Berlin.

BGER, S., Berlin.
Die methodische Intestinalpalpation mittels der topographischen Gleit- und Tiefenpalpation und ihre Ergebnisse mit Einschluss der Hecceralgegend mit Berücksichtigung der Lageanomalien des Darmes. Von Dr. Theodor Hausmann. Price M.4.50.
Die Physiologie und Pathologie des Wochenbettes. Für Aerzte dargestellt von Privatiozent Dr. F. Fromme. Price, paper, M.8.40: bound, M.9.60.
Jahrbuch für Kinderheilkunde und Physische Erziehung. Unter Redaktion von O. Heubner, A. Steffen, und Th. Escherich. 70, der dritten Folge 20 Band. Heft 5. Price not stated.

KIMPTON, HENRY, London. (STENHOUSE, ALEXANDER, Glasgow.)

Clinical Obstetrics. By Robert Jardine, M. D. Edin., M.R. C.S. Eng., F. F. P. & S. Glasg., F. R.S. Edin. Third edition. Price 21s. net. The Care of Children from Babyhood to Adolescence. For the Use of Mothers and Nurses. By Bernard Myers, M. D., C. M., M.R. C. S., L.R. C. P., L.M. With a Pretace by George F. Still, M.A., M.D., F.R. C. P. Price 1s. 6d.

LIPPINCOTT (J. B.) COMPANY, Philadelphia and London.

A Handbook of Medical Diagnosis. By J. C. Wilson, A.M., M.D. Price 25s. net.

LONGMANS, GREEN, AND Co., London, New York, Bombay, and

The Commonweal: A Study of the Federal System of Political Economy. By Alfred P. Hillier, B.A., M.D. Price 4s, 6d, net.

MEDICAL PUBLISHING COMPANY, LIMITED, London.

The Value of an Exclusive Proteid Diet in certain Digestive Disorders. By Ernest Young, M.D. Price 1s. 6d.

METHUEN AND Co., London.

The Mediaval Hospitals of England. By Rotha Mary Clay. With a Preface by the Lord Bishop of Bristol. Price 7s. 6d. net.

SMITH, ELDER, AND Co., London.

Fitty Years of New Japan. Compiled by Count Shigénobu Okums, late Prime Minister and Minister for Foreign Affairs. English Version. Edited by Marcus B. Huish. Two Volumes. Price 25s. net.

TAYLOR AND FRANCIS, London.

Appendix XXIII. to the Second Edition of the Descriptive Catalogue of the Pathological Specimens contained in the Museum of the Royal College of Surgeons of England. By Samuel G. Shattock, Pathological Curator of the Museum. Price not stated.

THACKER, SPINE, AND Co., Calcutta. (THACKER AND Co., London.)

Small-pox and Vaccination in British India. By S. P. James, M.D. Lond., D.P.H., Major, Indian Medical Service. Price 6 Rupees, or 7s. 6d.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Housing and Town Planning Bill.

THERE is now every prospect of the Housi g and Town Planning Bill reaching the Statute-book this year. Conciliatory influences have prevailed, and the House of Lords has accepted in almost every respect the plan of concessions suggested by the President of the Local Government Board in the House of Commons. The result is that some of the provisions of the Bill now represent a compromise. The Housing and Town Planning Bill has been before Parliament for two sessions. Last year it was subjected to a minute examination at the hands of a Standing Committee of the House of Commons, but no time remained to pass it through all its stages and to send it to the Lords. The intention of the Government to press it forward early this year was frustrated by the pressure of other business. However, they felt themselves pledged not to allow another session to pass without a serious attempt to place it on the Statute-book. After the Commons had passed it under a closure resolution it reached the Lords at a comparatively late date in the session. In the Upper Chamber it was so greatly amended in committee that at one time it was feared that the Government would abandon it. However, as the result of mutual concessions its passage is now assured.

Many medical men will be gratified that the Lords have not insisted on their amendments in the clause relating to the medical officers of county councils. On Friday, the 19th, the House agreed to the reinsertion of the section providing that the medical officer of health of a county should only be removed with the consent of the Local Government Board. The Commons inserted a provision in the clause that the duties of a medical officer of health of a county should be such duties as might be prescribed by general order of the Local Government Board and such other duties as might be assigned to him by the county council. This has also been accepted by the Lords, but a new subsection has been added that the general order prescribing these duties should be laid before Parliament.

HOUSE OF COMMONS.

TUESDAY, NOV. 23RD.

The Indian Medical Service.

The Indian Medical Service.

Mr. Hazleton asked the Under Secretary of State for India what was the percentage of Indians amongst the officers of the Indian Medical Service; what was the total cost for the upknep of this service; what was the charge on the Indian Treasury for recruiting the higher grades of the medical service of India in this country, and sending the successful candidates to India; what was the number of officers who were on leave every year and the cost of the extra number taken into the service during their absence owing to Indian assistant surgeons not being allowed to take their places; and when he proposed to open the higher grades to qualified and capable Indians.—The MASTER OF ELIBANK replied: The percentage of Indians (i.e., pure Asiatics) among the officers of the Indian Medical Service is rather more than five. The total cost of the officers of this service on the active iist, including both those in military and in civil employ, is approximately £570,500 a year. The charge for recruiting these officers,

both European and Asiatic (both being recruited in England) is about £12,280 a year, which includes the pay of the officers while under training in England. The average number on leave may be taken as 123. The vacancies so arising are filled from the establishment and not by extra appointments. The higher grades are already open to qualified and capable Indians.

Vaccination in the Army.

Mr. John Ward asked the Secretary of State for War whether the exemption of the Territorial Forces from compulsory vaccination had had any effects detrimental to the health of the men; and, if not, whether he would issue orders to respect the conscience in this matter of recruits to both branches of His Majesty's Forces.—Mr. HALDANE replied: No statistics are available at the War Office to enable me to reply to the first part of the question. As regards the second part of the question, there is no intention of waiving the regulations regarding vaccination in the regular forces.

WEDNESDAY, Nov. 24TH.

The Royal Army Medical Corps in Ireland.

The Koyal Army Medical Corps in Ireland.

Mr. Ashley asked the Secretary of State for War whether steps were being taken to ensure that officers of the Royal Army Medical Corps serving in Ireland should this year receive the full leave to which they were entitled by the Regulations.—Mr. Haldhar answered, in accordance with a previous written reply (The Lancer, Nov. 13th, p. 1477): Under normal conditions it will now be possible to give every Royal Army Medical Corps officer serving in Ireland throughout the year full leave, provided that he is willing to take it when the exigencies of the service permit. service permit.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANGET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

BATES, T., jun., M.B., B.S. Lond., F.R.C.S. Eng., has been appointed an Honorary Surgeon to the Worcester General Infirmary.

CHEYNE, Sir WATSON, Bart., C.B., F.R.S., has been appointed Consulting Surgeon to the Central London Throat and Ear Hospital.

CLAYTON, F., M.D., B.C., has been appointed House Physician at University College Hospital.

COMBE, RUSSELL, M.D. Cantab., F.R.C.S. Eng., has been appointed Honorary Consulting Surgeon to the Axminster (Devon) Cottage Hospital.

CRABB, R. L., M.B., B.S., has been appointed House Physician at Uni-

versity College Hospital.

D. F. S., M.B., B.C. Cantab., F.R.C.S. Eng., has been appointed Assistant Demonstrator of Anatomy at the London Hospital Medical

KIDD, F. S., M.B., B.C. Cantado., F.R.C.S. Eng., has been appointed Assistant Demonstrator of Anatomy at the London Hospital Medical College.

LINNELL, J. W., M.B. Cantab., has been appointed Resident Medical Officer at the Mount Vernon Hospital, Hampstead, N.W.

Low, V. Warren, M.D., B.S. Lond., F.R.C.S. Eng., has been appointed Surgeon to In-patients at St. Mary's Hospital.

MILLER, ARTHUR H., M.B. Cantab., M.R.C.P. Lond., has been appointed Physician to Out-patients at the City of London Hospital for Diseases of the Chest.

MILLER, REGINALD, M.D. Lond., M.R.C.P., has been appointed Assistant Physician to Out-patients at St. Mary's Hospital.

QUIRK, E. J. J., M.R.C.S., L.R.C.P. Lond., has been appointed House Anaesthetist to the Royal Dental Hospital.

SLEIGH, H. P., M.B., Ch.B. Abord., has been appointed Medical Officer of Health to the Samford Rural District Council, Suffolk.

SNYED, G. C., L.R.C.P., L.R.C.S. Irel., has been appointed House Surgeon at the North Ormesby Hospital.

SOUTTAR, H. S., M.B. Oxon., M.R.C.S., L.R.C.P., has been appointed Assistant Demonstrator of Anatomy at the London Hospital Medical College.

STEWART, PURVES, M.D. Edin., has been appointed Consulting Physician to the Central London Throat and Ear Hospital.

THOMPSON, Sir WILLIAM J., M.D. Dub., has been appointed Registrar-General for Ireland.

TORRICK. ARCHIBALD. M.B., Ch.B. Edin., has been appointed House

THOMPSON, Sir WILLIAM J., M.D. Dub., has been appointed Registrar-General for Iroland.

TOBRICK, ARCHIBALD, M.B., Ch.B. Edin., has been appointed House Physician at the Mount Vernon Hospital, Hampstead, N.W.
TROTTER, L. B., M.B., B.C., has been appointed House Surgeon at University College Hospital.

WALLACE, JOHN THOMPSON, M.B., B.Ch., B.A.O. R.U.I., has been appointed Surgeon to the Great Western Railway Provident Society at Bristol.

WATT, E., M.D. Glasg., has been appointed Medical Officer of Health for Partick, Superintendent of Knightswood Hospital, and Police

Surgeon.

LSON, A. J., F.R.C.S. Edin., D.P.H., has been appointed Medical Officer of Health to the Airdrie Burgh, Medical Officer to the Fever Hospital, and Police Surgeon.

Pacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

- ARMY MEDICAL SERVICE. Five Commissions in the Royal Army Medical
- ARMY MEDICAL SERVICE.

 COPPS.

 CANCER HOSPITAL, Fulham-road, London, S.W.—Physiological Chemist.

 Salary £350 per annum.

 CARDIFF INFIRMARY (GENERAL HOSPITAL).—House Surgeon for the Ophthalmic and Ear and Throat Departments for six months.

 Salary £30, with board and residence.

- CHARTHAM, KENT COUNTY ASYLUM.—Third Assistant Medical Officer.
 Salary £145 per annum, with board, quarters, attendance, and washing.
 CITY OF LEEDS INFECTIOUS DISEASES HOSPITALS AND SANATORIUM.—Resident Medical Officer, unmarried. Salary at rate of £120 per annum, with board, lodging, and washing.
 BDINBURGH SCHOOL BOARD.—Two Assistant Medical Officers. Salary £250 per annum.

- EDIBEURGH SCHOOL BOARD.—Two Assistant Medical Officers. Salary £250 per annum.

 FARRINGDON GENERAL DISPENSARY AND LYING-IN CHARITY, 17, Bartlett's Buildings, Holborn-circus, E.C.—Honorary Physician. GLOUCFSTERSHIRE ROYAL INFIRMARY AND BYE INSTITUTION.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

 HAMPSTEAD GENERAL HOSPITAL, N.W.—Physician to Out-patients. HANLEY EDUCATION COMMITTEE.—School Medical Officer (female). Salary £250 per annum.

 HARROGATE, BOROUGH OF.—Medical Officer of Health and Medical Inspector of School Children. Salary £400 per annum and expenses out of pocket.

- HARROGATE, BOROUGH OF.—Medical Officer of Health and Medical Inspector of School Children. Salary £400 per annum and expenses out of pocket.

 Hospital for Consumption and Diseases of the Chest, Brompton.—House Physician. Also Assistant Resident Medical Officer. Salary £100 per annum, with board and residence.

 Hospital for Sick Children, Great Ormond-street, London, W.C.—Resident Medical Superintendent, House Surgeon, Assistant Casualty Medical Officer, and Ophthalmic Surgeon.

 Huddersfield hyfirmary.—Senior Assistant House Surgeon. Also Junior House Surgeon. Salaries £30 and £60 per annum respectively, with board, residence, and washing.

 Leeds Public Dispensary.—Honorary Assistant Dental Surgeon.

 Leeds Public Dispensary.—Honorary Assistant Dental Surgeon.

 Leeds Public Dispensary.—House Physician. Board, residence, and washing provided.

 Leyton, Walthamstow, and Wanstead Children's and General Hospital.—Resident House Surgeon. Salary £100 per annum, with board, rooms, and washing.

 Liverpool Infectious Diseases Hospital.—Assistant Resident Medical Officer, unmarried. Salary £120 per annum, with board, washing, and lodging.

 Manchester, Monsall Fever Hospital.—Second Medical Assistant and Third Medical Assistant. Salaries £125 and £100 per annum, with board, lodgings, and washing. Inversional Inversions Surgeon. Salary £120 per annum, with board, Muddellenger, North Ridden Surgeon.

- and Third Medical Assistant. Salaries £125 and £100 per annum, with board, lodgings, and washing.

 MIDDLESHROUGH, NORTH RIDING INFIRMARY.—Assistant House Surgeon, unmarried. Salary £75 per annum, with residence, board, and washing.

 NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Soho-square, W.—
- Honorary Radiographer.

 NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queensquare, Bloomsbury.—Resident Medical Officer, also Junior House Physician. Salaries £100 and £50 per annum respectively, with board and residence.

 NOTINGHAM GENERAL HOSPITAL—Assistant House Surgeon. Salary
- £60 per annum, with board, lodging, and washing.

 NOTTINGHAM WORKHOUSE INFIRMARY.—Resident Assistant Medical
 Officer. Salary £130 per annum, with apartments, board, washing.
- Officer. Salary £130 per annum, with apartments, board, washing. and attendance.

 Quene Charlotte's Lying-in Hospital, Marylebone-road, N.W.—
 Physician to Out-patients.

 ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Bacteriologist. Salary £120 per annum, with lunch. Also Curator and Librarian. Salary at rate of £120 per annum, with lunch. Royal Waterloo Hospital for Children and Women.—Junior Resident Medical Officer. Salary at rate of £40 per annum, with board and washing.

 SEAMEN'S HOSPITAL SOCIETY, Greenwich, S.E.—Senior House Surgeon and Registrar. Also House Surgeon. Salaries £100 and £50 per annum respectively, with board, residence, and washing.

 SMEFFIELD ROYAL HOSPITAL.—Assistant House Surgeon. Also Assistant House Physician. Salary £50 per annum each, with board, lodging, and washing.

 SHEFFIELD ROYAL INFIRMARY.—Assistant House Physician. Salary £50 per annum, with board and residence.

- SHEFFIELD ROYAL INFIRMARY.—Assistant House Physician. Salary £80 per annum, with board and residence.
 SOUTHWARK UNION, London.—Medical Officer of the Children's Receiving Homes. Salary at rate of £50 per annum.
 SUFFOLK DISTRICT ASYLUM, Melton.—Second Assistant Medical Officer, unmarried. Salary £160 per annum, with board, apartments, attendance, and laundry.
 WEST SUFFOLK EDUCATION COMMITTER.—Medical Inspector of School Children. Salary £250 per annum, with travelling expenses.
 WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon. Salary at rate of £30 per annum, with board, rooms, and laundry.

Births, Marriages, and Deaths.

BIRTHS.

- DONALD.—On Nov. 21st, at Mount Wise, Falmouth, the wife of John A. Donald, L.D.S., of a daughter.

 McKellar.—On Nov. 20th, at Front-street, Chester-le-Street, County Durham, to Dr. and Mrs. W. Anderson McKellar, a daughter.

 PARKHURST.—On Nov. 19th, at "Rathan," Newhaven, the wife of Rodie Parkhurst, M.B., C.M., of a daughter.

 WARREN.—On Nov. 20th, at 15, Lansdowne-crescent, W., the wife of Alfred C. Warren, M.D. Cantab., of a daughter.

DEATHS.

- Barritt.—On Nov. 18th, 1909, Clara Lilian Barritt, beloved wife of Dr. G. Lacy Barritt, M.B.C.S., L.R.C.P. Lond., of 15, High-street,
- Spalding.

 Spalding.

 Somme.—On Nov. 19th, at Granville Mausions, Torquay, Thomas

 Secombe, M.D., F.R.C.S., Deputy Inspector-General of Hospitals

 and Fleets (retired), aged 90 years.
 - N.B.—A fee of 5s. is charged for the Insertion of Notices of Berths, Marriages, and Deaths.

Rotes, Short Comments, and Answers to Correspondents.

A COMPARATIVE RESEARCH UPON VARIOUS LOCAL ANÆSTHETICS: THE PERILS OF COCAINE.

To the Bulletin des Sciences Pharmacologiques M. J. Chevalier has recently communicated the results of a series of tests which he has made to determine the comparative value of several of the leading local anæsthetics. The substances examined included cocaine, tropacocaine, stovaine, alypine, anæsthesine, and novocaine. As regards their general action these substances behave, he said, similarly and manifest identical phenomena. They act chiefly on the central nervous system and particularly on the bulb, producing, in toxic doses, general analgesis, tonico-clonic convulsions, and finally death by asphyxia. They differ from each other only in toxicity and in the intensity of their local action upon the blood and tissues. The following table gives the toxic dose in grammes of each of these substances when injected into various animals:—

Animal.	Mode of Injection.	Cocaine.	Stovaine.	Anas- thesine.	Novo- caine.	Alypine.	Beta- eucalne.
Guinea- pig.	Interperi- toneal.	0.08	0.18	0.85-0.90	0.50	0.16	0.24-0.26
Cat.	,,	0.03	0.11	••	0.45	0.057	••
Dog.	.,	0.05	0.12	0.75	0.48	0.06	••
"	Intra- venous.	0.003	0.10-0.13	0.40	0.50	0.002	0.05-0.06
,,	Subcu- taneous.	0.04	0.12	••	0.45	0.07	0.30-0.35

From these figures it is evident that cocaine is by far the most toxic of the commonly used local anæsthetics. M. Chevalier makes the interesting statement that these substances do not exert a general action, except cocaine, which induces euphoria with nervous and muscular stimulation. Turning to the action of these substances on the heart, he points out that cocaine differs from the rest in causing a rise in blood pressure, owing to its general and local vaso-constrictive power. Of the other local anaesthetics, stovaine most nearly approaches cocaine in this respect, but it has no action on the vasomotors. Beta-eucaine is a very energetic cardiac depressor, and for this reason its toxicity is greatly increased when it is rapidly introduced into the circulation. As regards the mechanism of the local anæsthetic action of these substances, M. Chevaller suggests that it may be due to an incomplete and transient coagulation of the albuminoids, causing a modification of the osmotic tension of the cellular fluid. In this way the normal functions of the living protoplasm are suspended, the sensitiveness of the nerves is deadened, the nerves endowed with motor and trophic functions are temporarily affected, and the respiration of the tissues is modified. On this account novocaine has been used to hinder the nutrition of cancerous These phenomena are accentuated when the local anasthetic is combined with the active principle of the suprarenal glands, the intense vaso-constrictive action of this substance greatly lowering the cellular vitality which has already been modified by the local anæsthetic. A further reason for the increased anæsthetic action of the combination lies in the fact that the action of the anasthetic is localised around the seat of injection, the diffusion of the liquid being prevented by the temporary suspension of the circulation. Cocaine and tropacocaine do not exert any marked action on the red blood corpuscies, but the other substances tend either to destroy them or to modify their power of resistance. From a therapeutic point of view M. Chevalier considers that many of the local anaesthetics are capable of yielding satisfactory results when properly used, but that it is a matter for discussion as to which of them is the best. Assuming that the value of a local anasthetic depends upon its anasthetic power, toxicity, and freedom from local irritation, he places stovaine and novocaine along with cocaine. He thinks the latter will continue to be used, in spite of its toxicity and the accidents caused by its intense vaso-constrictive action. Alypine causes irritation, beta-eucaine is too toxic, while anæsthesine is not sufficiently soluble. From a consideration of therapeutic results he finds it difficult to choose between stovaine and novocaine. Many surgeons prefer stovaine for important operations and for producing medullary anosthesia, while dentists give the preference to novocaine, which they are able to combine more easily with suprarenalin.

"WOMAN AT HOME."

AMONGST the "Christmas" papers and magazines which we have received is a double number of Woman at Home, a brightly edited paper dealing with many feminine interests. We have been particularly interested in an article by Marion Francis Neil on "The Art of Making Poultices," which should be of real value, as the art is quite unknown to many people who are called upon to practise it. The directions for linseed and mustard poultices are excellent, though we cannot entirely endorse the suggestion that people subject to "bronchial attacks" will gain much good by carrying dry mustard poultices with them on their travels. We would rather the author had omitted the bread poultice, which is always messy and generally ineffective; it might well have been replaced by a description of the useful turpentine stupe. The other articles in the magazine hardly come within our purview, unless we utter an anatomical growl at the conventional "fashion-plate ladies" on the back pages, but this would hardly be fair, as they are redeemed by some excellent photographic representations of living models in a special fashion supplement.

"DR. GUILLOTIN."

To the Editor of THE LANCET.

Sir.—The citation from Lenotre's book by Dr. Oscar Jennings does not, I think, quite invalidate the claim I have attempted to establish. Dr. Guillotin's remarks in the Constituent Assembly on Dec. 1st, 1789, do not appear to have been regarded seriously; the Moniteur, in describing the scene, said they were received with much merriment. It seems tolerably clear that the instrument which subsequently obtained such notoriety was designed by Dr. Antoine Louis, was constructed under his supervision, and for some time bore no other designation than La Louisette. When Dr. Louis presented to the assembly a report announcing the completion of the task imposed on him to produce a decapitator which would work automatically and instantaneously he made no reference whatever to Dr. Guillotin. Dr. Louis may have taken as a rough model a beheading machine employed in France some centuries before the Revolution or he may have been indebted to illustrations of similar machines anciently used in other countries—e.g., the Mannaia in Italy, the Hobel in Germany, the Halifax in England, and the Maiden in Scotland.

I am, Sir, yours faithfully,
Worthing, Nov. 15th, 1909. WATKIN W. JONES.

A SIMPLE LEDGER FOR MEDICAL PRACTITIONERS.

Mr. H. K. Lewis, 136, Gower-street, London, W.C., sends us a copy of a medical ledger which has been designed to meet the requirements of the busy practitioner who wants a simple and compact system of bookkeeping. It is a combination of day book and ledger, the first part being set out for daily entries, and the second part, which is indexed alphabetically on the margin, for monthly and yearly totals. At each opening in the first part are columns for entry of pape in case book, name, address, records of 31 visits, total fees for month, amount received and date of payment, amount carried to yearly summary, and memoranda. The ledger has been arranged so that the labour involved in bookkeeping is reduced to a minimum, and it would be hardly possible to devise a simpler and yet more complete scheme. It can be commenced at any date, and is intended to last a year, but in many cases would be serviceable for a longer period. The page is quarto size and the binding is stout. The publisher informs us that a copy will be forwarded for inspection if desired. The price is fance.

PRINTING "IN REVERSE."

To the Editor of THE LANCET.

SIR.—Some persons whose sight is impaired can read white letters on a black ground more easily than black on white. I know one gentleman who writes habitually on black paper with white ink. Printing "in reverse" is somewhat troublesome, but if many customers were forthcoming publishers would doubtless meet the want. I shall be glad to hear from anyone interested in the subject. A trial can be made with one of the numerous advertisements now printed in reverse, or I would gladly send a specimen.—I am, Sir, yours faithfully,

AMATEUR PRINTER, M.D.

29, Woolwich Common, Nov. 23rd, 1909.

A NEW SERIES OF NOTE-BOOKS.

THERE is no doubt that the best system for taking and filing lecture notes is one in which separate leaves of the note-book can be detached and arranged easily for subsequent reference. Messrs. John Walker and Co., of Farringdon House. Warwick-lane, London, E.C., have issued a series of "Expert Manuscript Books" which present the great advantage that a student need take only one note-book to a round of lectures, subsequently transferring each batch of notes to a separate binding cover in which they can be readily numbered and fixed. The eries is made in several sizes from octavo up to full quarto, and the binding cases are covered in stiff coloured canvas, having inside them an ingenious hinged metal clip which receives the actual MSS, book, which can be had either plain or ruled in various styles. The book is kept secure by two stout pins that transfix corresponding holes bored through its thickness near the back margin. Each leaf is perforated so that it may be torn out after use, and in front of the perforation are two other large holes which enable it, after its removal from the book, to be fastened into a special binding case in a similar manner. Thus by degrees, if such a transfer binding case be devoted to each lecture subject, a series of manuscript books will be built up, all of which may be fed from one single working note-book. The series deserves popularity amongst medical students who have to attend so wide a ran e of classes.

A "NATURAL" FEEDING-BOTTLE.

Mr. W. E. Lowe, of 8, Stafford-street, Old Bond-street, W., has sent us an ingenious feeding bottle for infants known as the "Amater" which has been made to the design of Mr. W. J. Henson, L.M.S.S.A. whose aim has been to imitate the mechanism of the actual breast and so to prevent the infant from sucking in air. The bottle is spherical except for the bottom, which is flattened to enable it to stand upright. At the opposite pole is a wide neck over which fits the rubber teat, which has a broad shield at its base Near the neck is a small air-hole in the glass which can be regulated exactly by the finger so as to control the flow of milk, which when the bottle is held in proper position bulges out the whole teat and causes it to resemble a breast in both contour and softness. The teat can be turned inside out and thoroughly cleansed without the use of a brush, and the inside of the bottle being free from all angles is readily sterilised in a small saucepan. Mr. Henson states that he has had such bottles in use for a considerable time, and the success of the trial which was made with the specimen sent us thoroughly warrants our bringing it to the notice of our readers.

R. H.—The combination of the tinctures of strophanthus and digitalis is quite unobjectionable and sometimes proves extremely useful. Our respondent might with confidence add Tr. digitalis, m v., to the mixture which he is employing.

G.P. has failed to substantiate his communication with his name and address.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Beek.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

FRIDAY.

LARYNGOLOGICAL SECTION (Hon. Secretaries—George C. Cathcart, L. Hemington Pegler): at 5 P.M.

Cases and Specimens:
Dr. Dundas Grant: (1) Epithelioma of the Palate and Left
Pillar of the Fauces; (2) Secondary Specific Pharyngitis in

Pillar of the Fauces; (2) Secondary Special First yields of the Fauces; (2) Secondary Special First young Female.

Dr. W. H. Kelson: Suppuration in Frontal Sinus and Necrosis.

Mr. H. Betham Robinson: (1) Left Abductor Paralysis in a Young Man-presumably Toxle from Lead; (2) Chronic Laryngitis with Curlous Appearance of Right Vocal Cord.

Dr. Scanes-Spicer: Model by which the Variation in Effect of Costal (back) and Abdominal (belly) Breathing on the Stresses, Strains, and Frictions in the Throat and Larynx, more especially of Cricoid Cartilage on the Spinal Column, and also the Transverse Axis of Respiratory Rotation of the Cricoid on the Thyroid Cartilage, can be illustrated.

And other Cases.

SECTION OF ANASTHETICS (Hon. Secretaries—Liewelyn Powell, R. W. Collum): at 8.30 p.m.

aper:
Mr. Bellamy Gardner and Dr. Salusbury Trevor: Lymphatism,
with specimens and lantern illustrations.

OTOLOGICAL SECTION (Hon. Secretaries-Hunter F. Tod, H. J. Marriage): at 10 A.M.

Cases:

Dr. Edward Law: Deafness and Discomfort in the Right Ear as Early Symptoms in a Case of Epithelioma originating near the Right Eustachian Tube.

Mr. Herbert Tilley: A Case of Audible Tinnitus.

Mr. W. Milligan: Demonstration of Haye's Pharyngoscope.

Mr. Richard Lake: A Short Paper on the Post-operative Tests in Right Cases of Labyrinthine Disease.

Dr. Albert Gray: A Contribution to the Study of the Pathology of Deafmutism (with lantern slide demonstration).

Mr. Sydney Scatt: Microscopical Sections through the Mastoid Antrum in a Fatal Case of Scarlet Fever demonstrating Streptococcus Conglomeratus in Situ. Brief Notes of the Case with Description of Histological Technique.

And other cases.

RÖNTGEN SOCIETY, 20, Hanover-square, W.

THURSDAY.—8.15 P.M., Ordinary General Meeting. Prof. A. W. Porter: Some Effects of Electrical Discharges on Photographic

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.-4.15 P.M., Clinical Meeting.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c. MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22. Chenies-street, W.C.

Monday.—4 P.M., Mr. J. M. H. MacLeod: Clinique (Skin). 5.15 P.M.,
Lecture:—Mr. H. A. Ballance (Norwich): Fractures of the
Lower End of the Humerus in Children (illustrated).
TUESDAY.—4 P.M., Dr. J. W. Carr: Clinique (Medical). 5.15 P.M.,
Lecture:—Mr. H. J. Stiles (Edinburgh): Treatment of Hernia
in Infants and Young Children.

WEDNERDAY.—4 P.M., Mr. L. Cheatle: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. C. Ryall: Appendicitis in the Female.

THURBDAY.—4 P.M., Sir Jonathan Hutchinson: Clinique (Surgical).

5.15 P.M., Lecture:—Dr. D. Drummond (Newcastle): The Causes and Treatment of Indigestion.

FRIDAY .- 4 P.M., Mr. R. E. Bickerton: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-

ST-GRADUATE COLLEGE, West London Hospital, Hammersmithosad, W.

Monday.—10 a.m., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 p.m., Medical and Surgical Clinics. Mr. Dunn: Diseases of the Eyes. 2.30 p.m., Operations. X Rays. 5 p.m., Lecture:—Mr. Bidwell: Practical Surgery.

TUESDAY.—10 a.m., Dr. Moullin: Gynacological Operations. 12.15 p.m., Lecture:—Dr. Pritchard: Practical Medicine. 2 p.m., Medical and Surgical Clinics. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 p.m., Operations. X Rays. Dr. Abraham: Diseases of the Skin. 5 p.m., Lecture:—Dr. Pritchard: Serum Diagnosis of Syphilis.

WEDNESDAY.—10 a.m., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 p.m., Lecture:—Dr. G. Stewart: Practical Medicine. 2 p.m., Medical and Surgical Clinics. Mr. B. Harman Diseases of the Eyes. 2.30 p.m., Operations. X Rays. Dr. Robinson: Diseases of Women. 5 p.m., Lecture:—Dr. Beddard: Medicine.

TEURSDAY.—10 a.m., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Pathological Demonstration:—Dr. Bernstein. 2 p.m., Medical and Surgical Clinics. Mr. Dunn: Diseases of the Eyes. 2.30 p.m., Operations. X Rays. 5 p.m., Lecture:—Mr. Edwards: Clinical.

FRIDAY.—10 a.m., Dr. Moullin: Gynacological Operations. Medical Registrar: Demonstration in Cases in the Wards. 2 p.m., Medical and Surgical Clinics. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 p.m., Operations. X Rays. Dr. Abraham: Diseases of the Skin. 5 p.m., Lecture:—Mr. Armour: Head Injuries.

Saturnay.—10 a.m., Dr. Saunders: Diseases of Children. Mr. B.

Diseases of the Gain.
Injuries.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Mr. B.
Harman: Diseases of the Eyes. Dr. Davis: Diseases of the
Throat, Nose, and Ear. 12.15 P.M., Lecture:—Dr. G. Stewart:
Practical Medicine. 2 P.M., Medical and Surgical Clinics.
2.30 P.M., Operations. X Rays.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

NDON SCHOOL OF CLINICAL MEDICINE, Dreadnoughs Hospital, Greenwich.

Monday.—2 p.m., Operations. 2.15 p.m., Mr. Turner: Surgery. 3.15 p.m., Sir Dyce Duckworth: Medicine. 4 p.m., Mr. R. Lake: Bar and Throat. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 12 noon, Ear and Throat. 2.15 p.m., Special Lecture:—Mr. W. Turner: Some Late Complications following Operations. 2.15 p.m., Dr. R. Wells: Medicine. 3.15 p.m., Mr. Carless: Surgery. 4 p.m., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 12 noon, Skin. 2.15 p.m., Special Lecture:—Prof. Hewlett: Some Practical Applications of Pathology to Clinical Medicine. Wednesday.—2 p.m., Operations. 2.15 p.m., Dr. F. Taylor: Medicine. 3.30 p.m., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 11 a.m., Eye. Thursday.—2 p.m., Operations. 2.15 p.m., Dr. G. Rankin: Medicine. 3.15 p.m., Sir W. Bennett: Surgery. 4 p.m., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 12 noon, Ear and Throat.

FEIDAY.—2 p.m., Operations. 2.15 p.m., Dr. R. Bradford: Medicine. 3.15 p.m., Operations. 2.15 p.m., Dr. R. Bradford: Medicine. 3.15 p.m., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 12 noon, Skin. 3.15 p.m., Special Lecture:—Mr. McGavin: Prostatic Enlargement and its Treatment.

Saturday.—2 p.m., Operations. Out-patient Demonstrations:—10 a.m., Surgical and Medical. 11 a.m., Eye.

ORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Bvans),
2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose,
Throat, and Ear (Mr. H. W. Carson). 4.30 P.M., Medical
Jin-patient (Dr. A. J. Whiting).

TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld).
2.30 P.M., Operations. Clinics:—Surgical (Mr. W. Bdmunds);
Gynecological (Dr. A. E. Glies). 4.30 P.M., Lecture:—Dr.
Macdonald: New Methods for the Batimation of Sugar.

WEDNISDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R.
Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks).
3 P.M., X Rays (Dr. H. Pirle).

THURSDAY.—2.30 P.M., Gynecological Operations (Dr. A. E. Glies).
Clinics:—Medical Out-patient (Dr. G. P. Chappel),
FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. H. Bvans).
2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Rye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC. en-square, Bloomsbury, W.C.

Monday.—4 P.M., Lecture: Sir Victor Horsley: Surgical Diagnosis and Treatment of Diseases of the Nervous System.
TUESDAY.—3.30 P.M., Clinical Lecture. Mr. Armour: Osteoplastic Operations on the Skull.
FRIDAY.—3.30 P.M., Clinical Lecture;—Dr. J. Collier: Diseases of the Brain Stem.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.

THURSDAY.—2 P.M., Clinical Demonstration:—Dr. S. Fenwick: Diseases of the Stomach.

HOSPITAL FOR SICK CHILDREN (University of London), Great Ormond-street, W.C.

Thursday.—4 P.M., Lecture (Medical):—Dr. Poynton: Recurrent Family Periodic Jaundice.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Innroad, W.C.

TUESDAY.—3.45 P.M., Lecture:—Dr. B. Kingsford: Anæsthetics.
THURSDAY.—4.30 P.M., Clinical Lecture:—Mr. Stuart-Low: Cancer
of the Throat—its Prevention and Treatment.
FRIDAY.—3.45 P.M., Lecture:—Mr. W. Wallis: Mouth and Teeth.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W

MONDAY.—3 P.M., Clinical Demonstration: Dr. H. Campbell.
TUESDAY.—5 P.M., Clinical Demonstration:—Dr. J. Mackenzie.
WEDNESDAY.—3 P.M., Clinical Demonstration:—Dr. F. Palmer.
THURSDAY.—3 P.M., Clinical Demonstration:—Dr. T. D. Savill.
FRIDAY.—2 P.M., Clinical Demonstration:—Dr. P. Stewart. 5.30 P.M.,
Clinical Demonstration: Dr. E. Macnamara.

ST. JOHN'S HOSPITAL FOR DISHASES OF THE SKIN, Leicester-

THURSDAY .- 6 P.M., Chesterfield Lecture :- Baldness-its Causes and Treatment.

OPERATIONS.

METROPOLITAN HOSPITALS.

- METROPOLITAN HOSPITALS.

 MONDAY (39th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (6 ynseological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopsedic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.),
- TUESDAY (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Goldensquare (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.),
- Central London Throat and Bar (Minor, 9 A.M., Major, 2 P.M.).

 WEDNESDAY (1st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Boyal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædie (10 A.M.), St. Peter's (2 P.M.), Samartian 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Bar (2 P.M.), Royal Orthopædie (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), St. Thomas's (1.30 P.M.), St. Thomas's (1
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 THURSDAY (2nd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samartian (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Bar (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Bar (Minor, (9 A.M., Major, 2 P.M.)).
- (Minor, 9 A.M., Major, 2 P.M.).

 PRIDAY (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Oross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (1° A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor 9 A.M., Major, 2 P.M.).
- SATURDAY (4th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 25th, 1909.

Date.	Barometer reduced to Sea Level and 32° F.	Direc- tion of Wind.	Rain- fall.	Rolar Radio in Vacuo.	Maxi- mum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Tov. 19	30.14	N.E.	0.00	69	45	39	37	40	Cloudy
20 21	30·19 29·96	N.E.	0.01	56 61	46 44	38 34	37 34	39 35	Cloudy Fine
,, 22	29·98 30 30	N. N.		61 47	41 41	34 34	33 34	34 35	Fine Fine
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An Address

LOOKING BACK;

A GLANCE FROM EMPIRICISM TO EXPERIMENT. FROM SUPERSTITION TO RESEARCH.

Delivered before the Middlesen Hospital Medical Society on Nov. 11th, 1909,

BY SIR HENRY MORRIS, BART., M.A., F.R.C.S. Eng.,

EMERITUS LECTURER ON SURGERY AT THE MIDDLESEX HOSPITAL.

GENTLEMEN, -When, through the honorary secretary, your society paid me the compliment a fortnight ago to ask me to give the opening address of the session, my mind reverted to the past, to the long ago, and at once assumed

the attitude of looking back.

I remembered that in my earliest days at the hospital, in the first years of the "seventies" in fact, I held the office which our chairman holds now, of President of the Middlesex Hospital Medical Society. I recalled with what satisfaction I learnt that this society, founded as it was in 1774, is one of the oldest of the medical societies in London, and I began to reflect upon the vast changes in medical opinion, in professional knowledge, and in curative science which have occurred not only since the birth of this society, but in the much shorter period since the time when I was President. And if I may state in five words the chief cause of those changes, I will make use of the expression of (I think it was) John Donne, a poet and divine in the reign of James I., and say that they are due to "the sacred hunger of science." And if I were asked, "What kind of science?" I would answer, "Physical science which searches after truth by the method of experiment," that science which seeks for knowledge without first asking what direct or tangible benefit is likely to be derived from it. In the fields of research there is nothing to distinguish, at first sight, which are the profitable and which the unprofitable plots, like the interesting Babylonian landmark or boundary stone marked off the ownership of different plots of ground, and which you can now see in the British Museum. But though scientific research may start with no immediate purpose but its own, yet its hope is progress; its creed, that "knowledge is power"; and its expectation that, without asking how, yet somehow its results will ultimately be beneficial to humanity.

Leslie Stephen, in his introduction to his work on "Utilitarians," has written: "The love of truth in the abstract is one of the weakest influences in human nature. Well! Be it so. Still, "the sacred hunger of science" is keenly felt by many, and in some it would seem to be a necessity laid upon them, like the necessity to preach felt by St. Paul. And just as St. Paul exclaimed, "Yea, woe is unto me if I preach not the Gospel," so these eager investigators would in the same spirit cry out, "Yea, woe is unto us if we make not experiments."

It is by means of experiments which can be planned and controlled at the will of the explorer, and especially by experiments on living animals, that so many of the recent changes have been made in our views of the pathogenesis and diagnosis of disease, particularly of fevers and the infective diseases of wounds, as well as in our methods of treatment.

But I would not have you suppose that I regard research by experiment as of recent or modern date. It is not so, not even research by experiments on animals. Hippocrates was the first to lead medicine in the right track. He employed experiment as well as observation, and thereby succeeded in freeing medicine from the fantastic speculations of the pre-Socratic philosophers. He was, moreover, the fountain source or spring of the flowing stream of medical science, whose course, however, was soon to be checked by the dialectical and rhetorical gyrations in the whirlpool of Greek philosophy, by the pitfalls of Galenic Aristotelianism, the shifting quicksands of Scholasticism, and the deadening and paludal morass of the Middle Ages; but it came bubbling out again as little rivulets into the

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sunshine of the Renaissance, acquired force and volume by the Reformation, and flowed onwards unchecked and in full stream through the smooth and level plains beyond the Revolution; there it is bounded only by the horizon, the clouds and darkness of which are steadily being pierced, dissolved, or made to recede by the penetrating rays of the lime-lights of modern methods of research.

Galen, notwithstanding the obstacles he raised, by his mistaken and misleading worship of Aristotle, to the progress of medicine for a period of nearly 1500 years, nevertheless asserted the importance of anatomy—though, unfortunately, he only knew anatomy through the dissection of animals and not of the human subject; and he was the parent of

experimental physiology.

Towards the middle of the seventeenth century Descartes -some of the most learned philosophers and educationists of their time—resorted to dissection of living dogs and other animals to demonstrate the circulation of the blood; and were accused, possibly as unjustifiably as the scientists of to-day, of being indifferent to the cries of their victims.

In other departments of physical science recourse was had in the past centuries to experiments. Bacon, in his "Natural History," describes the importance of making experiments, and indicates a very large number. Pascal, about the year 1648, made most important and decisive experiments on the weight of air, experiments which, according to Sir John Hershel, "tended more powerfully than anything else which had previously been done in science to confirm in the minds of men that disposition to experimental verification which had scarcely yet" (he was writing in 1830) "taken full and secure root."

Boyle, in the middle of the seventeenth century, instituted exact experiments into the relation between colour and heat, and thereby laid the foundation for the union of optics and thermotics; he also advanced the science of hydrostatics, and established chemistry on a real basis as a science capable of dealing with the organic world. Boyle constantly insisted on two fundamental principles—namely, (1) the importance of individual experiments; and (2) the comparative unimportance of the teaching of antiquity on physical science. He inherited, so to speak, these opinions from Bacon—"First to doubt, then to inquire, and then to discover." Boyle's propensity to doubt is evident throughout his writings, and he gave to his essay on crystals the title . Doubts and Experiments Touching the Curious Figures of Salts.

The determination to subordinate old notions to new inquiries was emphasised in Boyle's lifetime by the incorporation in 1662 of the Royal Society, which was formed with the avowed object of increasing knowledge by direct experiment. According to Dr. Paris ("Life of Sir Humphry Davy") the Charter states that the society was established for the improvement of natural science, and that this epithet natural was introduced in contra-distinction to supernatural, because at that period the arts of witchcraft and divination were very extensively encouraged.

In the eighteenth and nineteenth centuries experimental research was very rich in discoveries. Research by experiment has been enormously advanced and extended by chemistry, photography, the improvement in instruments, and other means. Animal chemistry has been of the greatest assistance to the physiologist and pathologist, as have the microtome to the histologist and embryologist, and the

microscope to the biologist and bacteriologist.

The microscope was essential for experiment as well as for observation. By its aid it was ascertained that the organisation of vegetables is nearly as complicated as that of animals, that there is harmony between the animal and vegetable kingdoms, and a close relationship between the physiology of plants and animals. Without the microscope bacteriology would have been impossible, and some of the greatest developments of scientific research would never have been brought about, except by the help of microscopes of high Though the microscope in its crudest form was invented so long ago as 1590, and was exhibited in London in 1620 by Drebbel, it was only by slow degrees that it reached its present state of perfection. Improvements are still in progress, and only the other day a demonstration of a new invention was given at the Academy of Sciences of Paris. It consists of photography, by kinematograph, of microscopic images obtained by side-lights, which constitutes the ultra-microscope. By this combination of kinematograph, microscope, and side-lights, photographs are obtained showing microbes, so small as to be invisible to the eye under the ordinary illumination and microscope, moving in their natural surroundings. By magnifying, the microbes of sleeping sickness are seen twisting about among the red cells of the blood, and are said to appear as large as eels.

Specialism, in spite of certain definite drawbacks, has unquestionably been another cause of advance in medical science. Medical science, in common with industries and other branches of science, has made remarkable progress in accuracy, as well as in extent of knowledge, through the experience and investigations of those who have specialised

in various departments.

In the past one of the great obstacles to the advance of medicine was the tenacity of unproven hypotheses. experimental methods of research the truth or falsity of hypotheses is tested, in many instances very quickly, before they are either accepted as explanations of symptoms or put into practice in treatment. Experiment is like cross-examinait unravels the essential from the unessential, the relevant from the irrelevant; it insists on direct answer to the question asked. By experiments properly controlled we obtain results on which we can reliably base opinion and form absolute beliefs. This certainty, this absolute belief, is a matter of the utmost importance to us in the practice of our profession. Our object in the treatment of disease is to act, and our desire is to act successfully. And this desire to act successfully is the keynote of all actions; it is one of the ultimate facts of human nature. But human nature, as James FitzJames Stephen states, is so constituted that all actions involve belief, and all successful action involves true belief; and to attain to true belief every source of error must be eliminated, every doubt or uncertainty removed.

In the exercise of our curative science we want our results to be as far as possible *certain*. The conditions necessary for unerring action are first to know what should be done, and second to have the mind to do it. We should like in all cases to be able to say with Hamlet:

"Seems, Madam! Nay, it is. I know not seems."

In respect to many diseases and injuries, the safeguards of experimental research have obtained for us this certainty, and we can put our treatment into practice with the full assurance that we are taking the direction of success, though, even so, of course, we cannot always command success, for the reason that we have to war against disease and death, and death we know is the lot of all:

"All that live must die, Passing through nature to eternity."

But our deservedly high appreciation of experimental research must not dull our sense of the great value of clinical and post-mortem observation. The laboratories are so full of promise, such a land flowing with the milk and honey of prospective discoveries—far off it may be, but yet so rich—that there is some risk that they may monopolise attention. The wards and the post-mortem theatre also yield products, not a few and by no means unimportant or insignificant. The acute and minute observation, quite apart from experiments, of trained clinicians and pathologists has resulted in the discovery of many facts of first-rate importance, and the generalisations therefrom have yielded sound and guiding principles of diagnosis and treatment. Thus have become famous the names of Morgagni and Rokitansky, of Sydenham and Boerhaave, of Watson and Murchison, of Hilton and Paget, of Wilks and Gull, of De Morgan and Charles Moore, and many others.

Percussion and auscultation, the stethoscope and thermometer, the ophthalmoscope, the laryngoscope, and other instruments for illuminating parts and cavities of the body have increased the means and the efficiency of clinical examination and diagnosis.

The importance of developing the faculty of observing cannot be exaggerated. Every medical student, every medical practitioner, can and ought to cultivate it. At all times and in all places it can be exercised; whereas experimental research requires special and often elaborate conditions and equipment. Moreover, we all cannot give

up the time from our particular lines of work which experimental research demands, and not everyone is endowed with the qualifications requisite to pursue it successfully; so that many, the majority in fact, must be content to employ the knowledge acquired by the experimental work of others. Observation, it is true, compared with experiment, is very slow, and is like the crawl of the tortoise in contrast with the strides of the ostrich, but it improves with practice, ripens with age, and the coördination of collective observation increases experience and expedites conclusions.

"Experience is by industry schieved And perfected by the swift course of time."

In my recent "Sir William Mitchell Banks" lecture I showed how the modern operations for cancer of the breast have been established by the careful observations, of clinical phenomena, and of the facts of morbid anatomy, made in this hospital by Moore and De Morgan, and which have been confirmed quite recently by Mr. Handley.

Another illustration of the brilliant results of individual and collective observation is the discovery of the association of myxœdema with the loss of the thyroid gland, thence followed modifications in the operative treatment of the thyroid, and the prevention and cure of myxœdema by the administration of thyroid extract. I am, however, aware that these results connected with the thyroid are sometimes, but unjustly, claimed as a triumph exclusively of experimental research.

The enormous strides made by scientific researches afford reason to expect that the so-called systems of medicine such as those associated with the names of Hoffmann, Brown, Cullen, and others, each of which is based upon the idea of inding an explanation for every form of disease, have vanished for all time.

At the present time, however, quackery is rife in Germany in the form of the "natural" treatment (Naturheilkunde), and in this country and America in the form of Christian Science. We are much indebted to Mr. Stephen Paget for his instructive book and his recent address on Christian Science, but there is one aspect which he has not gone into, and on which it is impossible to speak without trespassing beyond the bounds within which it is usual to limit discussion on medical subjects; yet it is with reference to this aspect that I crave your attention for some minutes. The teaching and practice of Christian Science ignore all the physical reality of sickness set aside all the recognised means of curative science, and rely entirely on an appeal to "the source of life, for more life." Its method is to call on the Divine Spirit by means of concentrated thinking, and by thus drawing upon "spiritual force" to remove an idea of duscase, the disease itself being said to have no actual or real existence.

In theory Christian Science healing differs from Faith healing in this: Faith healers do not doubt the reality of disease and suffering, but believe that the Spiritual and Divine force neutralises and counteracts them; whereas the Christian Scientists deny entirely the existence of a body or of pain and sickness, and profess to call down the Divine influence to overcome a false idea—a misimpression. Like the saints of old, Mrs. Eddy and her followers claim the true source of their cures to be the direct action of God. Such a claim, if not put forward in so many words, is de facto a claim to be able to work miracles, and none the less so because they talk and write in psychological manner of the "power of an idea" and the "annihilation of an illusion." A miracle is defined as a plain and manifest exercise by the agency of man (including prayer and contemplation under the term agency), or by God at the call of man, of those powers which belong only to the Creator and Lord of Nature. I purposely omit from this definition any reference to signality. The reason for considering miracles as signs is based on the Greek word $\sigma \eta \mu \epsilon i \sigma_{\nu}$, of which "miracle" is the ordinary translation, and from which the word semeiology, meaning a knowledge of the signs and symptoms of disease, is derived.

The Christian Scientist cannot get away from the fact that, on his own showing, he thus attempts to work miracles. It is to the purpose therefore to criticise the "cult" from this point of view. The miracles of which we have authentic record are (1) those of the New Testament; (2) those of the Old Testament; and (3) the miracles of the Early Christian Church—the so-called ecclesiastical miracles. The miracles attributed to the Roman Emperor Vespasian

² General View of the Criminal Law of England.

are no doubt pure fabrications and Mahomed's miracles read like sleight of hand and jugglery.

The miracles of the New Testament were performed (a) by Christ himself; (b) by the Apostles; and (c) by the Disciples. There is no difficulty in showing that Christian Science departs in four important particulars from the miracle working described in the New Testament. The points of difference I refer to are that the Christian Scientist (1) requires faith or self-confidence in the patient; (2) attributes therefore insufficient importance to the faith or "mental concentration" of the healer himself or herself; (3) refuses to employ any physical means of treatment; and (4) is unable to perform certain acts which, we are explicitly told, could be done by those who worked miracles under the Christian dispensation.

Many of the New Testament miracles were those of healing; those of the woman cured of an issue of blood, the leper cleansed of his leprosy, and the blind men restored to sight by mere touch, were performed by Christ himself on persons who were told their faith had made them whole; those of the widow's son, Jairus' daughter, and the son of "one of the multitude" seen after the transfiguration, were wrought by Christ through the faith of the parents of the afflicted. The centurion's servant was cured of the palsy through the faith of the centurion, which was said to have been greater than any which had been found even in Israel.

I. In neither of these four last-named cases was there any cooperation on the part of the individuals restored to health. In the performance of the miracles wrought upon them they were purely passive agents. Christian Science, on the other hand, requires an effort of contemplation or mental concentration, of will power, or of faith, on the part of the patient to be cured. She cannot, however, appeal to the New Testament for support of this teaching, for besides the instances of the substitution of the faith of another for that of the person who was the subject of the miracle, there were other miracles in which there was no such substitution. Neither the man blind from his birth, nor the nine lepers, nor the man with the legion of devils, are stated to have exhibited faith by prayer or otherwise before or during the accomplishment of the miracle. Nor did any other person do so on their behalf. In the case of the cripple of Lystra, St. Paul, "steadfastly beholding him and perceiving that he had fail. to be healed," cured him. The cripple had heard Paul speak, but he had made no appeal or sign or personal effort to be healed. St. Peter healed the lame man at the gate of the Temple, cured Eneas of Lydda of the palsy, and restored Dorcas, alias Tabitha of Joppa, to life; but there was no cooperation on the part of those treated. The miracles of Philip and Stephen testify apparently to the same fact, for being "full of faith and power" themselves, they "did great wonders and miracles among the people."

Thus, though Christian Scientists are able to refer in support of their own method of "absent treatment" or healing in absentia to the single instance of the centurion's servant, there are many cases recorded in which there was no cooperation or participation in thought-concentration on the part of the patients themselves. Is it not therefore effrontery on their part to ascribe their failures to the patients' defective capability of thinking, or deficient force of will,

or want of faith?

Il. In the cures which were wrought by the Apostles and Disciples the faith of the active agent (i.e., the Apostle or Disciple) was of primary importance—in fact an essential factor for the healing. When an explanation was sought of the failure of the Disciples to cure the epileptic and lunatic boy, the reply was, their unbelief. On the other hand, the 70 disciples who were sent, two and two, into every city and place, were believers. They returned from their journeyings with joy, proclaiming "Even the devils are subject unto us through thy name." Further, there is the reply to the Apostles about the grain of mustard seed and the sycamine tree, when they asked "Increase our faith." Is not the correct argument from analogy, therefore, that when the Christian Scientists fail it is on account of their own deficiencies-of their own lack of power ?

III. Nor can they justify by New Testament teaching their own rejection of every kind of physical aid in their treatment of the sick. In the case of the man blind from his birth. Christ made clay with his spittle, and after anointing the eyes of the blind man with the clay, sent him to wash in the pool of Siloam. Repeated stress is, in the narrative, laid on

the clay and the washing. Again, we are told "God wrought special miracles by the hand of l'aul, so that from his body were brought unto the sick handkerchiefs or aprons, and the diseases departed from them, and the evil spirits went out of them.

IV. It has been held that the power of working miracles was transmitted to the Apostles and Disciples in such a manner that it came necessarily to an end on the death of the last of the Apostles.3 If they dispute this, are the Christian Scientists prepared to base their self-confidence as healers on the only passage in the Bible which it is said gives any support to the idea that miracles are in these days performed, and have been possible throughout all the ages of the Christian Church? The passage is, "And these signs shall follow them that believe. In my name shall they cast out devils; they shall speak with new tongues; they shall take up serpents; and if they drink any deadly thing it shall not hurt them; and they shall lay hands on the sick, and they shall recover."4

If the laying on of hands is part of the healing, how do the Christian Scientists justify their attempts on patients at a distance! And why do they restrict themselves to the exercise of the healing power only, and disregard all the other endowments specified in the text? Do they speak with new tongues? Could they take up serpents or drink deadly things and yet remain unharmed? Would they take, say, concentrated laurel-water instead of claret for dinner, or eat aconite root instead of horse-radish with roast beef? Why do they not give demonstrations in their churches or temples of the impunity with which they can manipulate venomous snakes and serpents ?

When St. Paul, after escaping drowning from shipwreck, was being kindly entertained by the inhabitants of Malta, a viper came out of a bundle of sticks and clung to his hand. The people at once supposed he was a murderer, and that vengeance had overtaken him in spite of his escape from the sea. But when he shook the beast off into the fire and suffered no harm the people changed their minds and thought he was a god. Why do not the Christian Scientists increase the evidences of their power, and improve the estimation in which they are held, by showing in the manner of St. Paul how unmerited are the imputations of manslaughter against them ?

It was foretold that sorcerers and false prophets would arise who would declare signs and wonders, insomuch that if it were possible they would deceive the very elect. Was Christian Science included in this anticipation? When in 56 A.D. the seven sons of Sceva, the Jew of Ephesus, and other "vagabond Jews and exorcists" made trial of their power of healing, the evil spirit answered them by saying, "Jesus I know, and Paul I know, but who are ye?" And then the man in whom the evil spirit was leaped on Sceva's sons and overcame them, and prevailed against them so that "they fled out of the house naked and wounded." There are, not a few, persons who, knowing the fatal consequences attending the practice of the Christian Scientists would witness without disturbance to their bowels of compassion the advent of a spirit which would chastise those presumptuous persons as Sceva's sons were treated.

The Pharaoh of 3400 years ago called together the wise men, the sorcerers and the magicians of Egypt, to practise their enchantments and to cast down every man his rod, and they became serpents. But the rod of Aaron swallowed up the rods of all of them. Would it be altogether a misfortune if modern science or public spirit, or both, like Aaron's rod,

would swallow up the disciples of Mrs. Eddy?

It was commanded in old time to forbid no man to do miracles in the name of the Master, nor would we quarrel with the Christian Scientists for trying their minds on miracles if they did no harm to others thereby. Our repugnance to their presumption is because they mislead the credulous, the ignorant, and the helpless into supposing that miracles will be wrought at their instigation, and thereby persuade, if they do not indeed enforce, their victims to neglect every physical means for their recovery. We are not concerned as medical men with the metaphysics of Christian Science. What we resent is the effect of their teaching and practice in cases of organic and infective diseases, and in severe surgical injuries. It is because of their meddling with medicine, not their muddling with

metaphysics, that our profession, in the interest of sufferers and in the interest also of the general public, opposes their false doctrine and cries out against their cruel and fatal

The miracles of the Old Testament formed part of the Theocratic government of the Jews, and were wrought for the purpose of impressing an ignorant and semi-barbarous people with the idea of the power of the Deity. To us the striking feature about many of them is the thinness of their veil of the marvellous. As miracles they seem beggared of the miraculous. They were, however, quite sufficient to terrify and excite the wonder of a semi-civilised race whose simple rudiments of learning made them as "children" in the condition of "slaves." For instance, Samuel called to the Deity for thunder and rain during wheat harvest so that the people might realise their wickedness; and the thunder and the rain came. This brings back to my thoughts a circumstance related, I think, in "She," or some other book by Rider Haggard. Some one, knowing that an eclipse of the sun was due on a particular date, saved himself from being put to death by publicly foretelling the approaching darkness, and thus leading the natives to fear him as a god or a prophet. There are many nowadays who foretell, like Samuel, what the weather is going to be; such predictions are a part of the news supplied to us by the daily and weekly press. Besides, we offer prayers in churches still for sunshine or showers, and sometimes the rain or the fine weather as the case may be comes as a post hoc, if not as a propter hoc.

Then there is the cure of King Hezekiah, who was "sick unto death" from the effects of a boil, but whose life was saved by his own tears and prayers and through Isaiah, who prescribed "a lump of figs" to be applied to the boil. No one in these days, however, would think it wonderful that a fig poultice should bring away the core of a ripe boil in three days.

There is little to venerate or respect in the miracles of the saints of the second, third, and fourth centuries. miracle associated with the career of St. Ambrose in the fourth century looks like imposture and gullibility. At a time when his influence was on the wane and required vigorous support St. Ambrose had a dream, which led to finding beneath the pavement of the church the remains of two martyrs. The common people crowded to see these venerable relics, and many who were sick were healed by touching the bones. St. Ambrose was in ecstasies over these miraculous cures, and preached eloquent sermons thereon. This was but a poor and vulgar imitation, however, of the miracle of the man who, when about to be buried, was thrown into the sepulchre of Elisha, and came to life immediately his body touched the bones of the prophet.

The tactics of St. Ambrose remind us of the miraculous cures which were worked on the fanatics at the tomb of the Jansenist deacon, François de Paris (Abbé de Paris), in 1730; they also recall the procession of the multitudes one has seen at Lourdes; and the filthy fragments of dressing and the discarded sticks and crutches ostentatiously thrown into the hedgerows near the shrine of miraculous cures, in the South of Ireland. The cemetery of St. Médard in Paris where François was buried became so overrun with pilgrims that the place of the grave was walled up; hence arose the satirical epigram: "De par le Roi defense à Dieu de faire miracle en ce lieu."

All the Ecclesiastical miracles are highly improbable. They resemble those fictitious legends, those mists of error, which have been invented by the imagination of impostors for acceptance by the credulous, to some of which I will in a moment refer.

In B.C. 280 there arose in Alexandria a medical sect known as the "Empirical School." Its members relied solely on tradition, analogy, and individual experience, and rejected all philosophical theories, and all a priori reasoning. The term "empiric" in the present day is sometimes given to quacks-i.e., those who practise medicine or surgery, but who have not received a regular medical training. commonly it is the name applied to qualified men, who rely on tradition and personal experience. By such, anatomy and physiology are considered to have but little connexion with practice, the whole object of the art and science of medicine in their view being to obtain practical results by therapeutical agents, to search out specifics for every malady, and to cure disease without troubling to discover its true pathology and pathogenesis. It was empiricism of this kind which laid our

profession so much open to the charge of charlatanry, and was one of the reasons why it excited the scorn and satire of such men as Petrarch, Montaigne, and Molière.

Empiricism has had its professors in all countries and in all ages since the days of the Alexandrian School. Suctonius relates that the life of Augustus Cæsar was saved by the physician Antonius Musa, who insisted that hot medicines, in his experience, were the only remedies for the disease from which Cæsar was suffering; all the rest of his doctors had thought the same about cold medicines. Herodotus tells that the Lybians professed that persons were prevented from having catarrh for the rest of their lives if the veins of the head and temples had been burned and cauterised when they were four years old. Galen reported a case to prove that leprosy was cured by wine drunk out of a vessel into which a viper had crawled.

Montaigne, the earliest systematic sceptical writer in the French language, published at the end of the sixteenth century an amusing but satirical essay on physic and physicians. He mentions many of the empirical remedies then in use, such as "the left foot of a tortoise, the urine of a lizard, the dung of an elephant, the liver of a mole, and blood drawn from under the right wing of a white pigeon. Montaigne comments at some length on his own sufferings from stone in the bladder. He avoided being treated by physicians, and no wonder, for he adds, "and for us who have the stone, so scornfully do they use us in our miseries" that they prescribe "the excrements of rats beaten into a powder." He learnt the fallacy of the idea that the blood of a he-goat was a remedy for stone by having one killed and finding stones within its body. From Montaigne's own account, however, it is clear they were not urinary calculi but bezoars, which are not uncommon in the stomachs of goats, antelopes, and other animals, and which formerly were esteemed as antidotes to all poisons.

Montaigne illustrates what he describes as "the variety and weakness of the rationale of the profession," by citing the reasons given by one set of physicians why aperitive medicines are proper for persons subject to the stone, and the reasons given by another set why aperitive medicines are dangerous to those same persons, by tending "to create gravel, and to occasion a certain and most painful death." Here in this hospital public opinion has required us to try numerous purely empirical drugs for cancer, such as chian turpentine, condurango root, violet leaves, molasses, and others-all as entirely without curative effect as the repulsive

things mentioned by Montaigne.

Under Arabian and other Oriental influences medicine became mixed up with magic, alchemy, and astrology; and in the Middle Ages it came under the yoke of theological dogma, and was enslaved by superstition. The influence of superstition continued long, and, though scotched, is not even yet killed. The practice of touching as a cure for scorbutic diseases was exercised by all our Sovereigns from Edward the Confessor to the time of Queen Anne, and was especially prevalent in the reign of Charles II. Though it is unfair to the memory of the illustrious physician of Norwich, Sir Thomas Browne, to quote him in illustration of the superstitions which prevailed in his day, without mentioning that in a subsequent work published 12 years later he deliberately attacked them as "Vulgar and Common Errors," it is nevertheless true that in "Religio Medici," published in 1634, he declared his belief in the philosopher's stone, in witches, in palmistry, and in spirits and tutelary angels; and he rated those who denied the existence of witches as atheists and "worse than infidels."

A custom called "La Couvade" formerly prevailed in the south-west part of France, and very widely, too, in other parts of the world, which obliged the husband of a lying-in woman to go to bed and take charge of the baby. he who received the congratulations of his friends, in bed; whilst the mother got up and went about her business in the house, as if nothing had happened. Remains of this custom are said to exist among different races even at the present day-namely, in Corsica, Guiana, Borneo, and elsewhere. The explanation used to be that the father had to expiate original sin; but of late it has been held that he was put to bed to be out of the way for fear that, if he were going about as usual, by some unintentional act he might injure the baby, not physically, but through the spirit.

It was at one time taken for granted in Christian countries, and the view is said to have been sanctioned by Luther, that hail and wind were the works of wizards. Combe, in his "Constitution of Man," relates that in the middle of the eighteenth century the country west of Edinburgh was so unhealthy that every spring the farmers and their servants were seized with fever and ague, and that these visitations were believed to be sent by Providence. After a while the land was drained and the fever and ague disappeared.

Swinburne, in his "Travels through Spain (1775-1776)," tells that the clergy in the latter part of the eighteenth century were on the point of putting an end to the opera because they attributed the want of rain to the influence of that ungodly entertainment.

In 1760 the physicians of Madrid opposed the cleansing of the streets of the city, as they considered the smells emitted from them were wholesome. The argument was that "the air being sharp and piercing it was extremely probable that bad smells made the atmosphere heavy, and in that way deprived it of some of its injurious properties." But Spain was a particularly backward country, for Townsend during his journey through Spain in 1792 found that the leading physician of the country doubted the truth of the circulation of the blood, which Harvey had proved 150 years before. Even in the beginning of the nineteenth century there was not a lecture room for practical instruction in the colleges of either Madrid, Barcelona, or Cadiz.

As long as it was forbidden to question the teaching of the Church physical science made but slow progress, solentific investigation was under great restraint, and scientific investigators were frequently punished as heretics. As long as periodic attacks of fever and ague were believed to be visitations sent by God it was heresy to make efforts to prevent them. As long as a lengthy period of drought was regarded as a Divine punishment for indulgence in ungodly amusements it was conceivable that the closure of the theatres and opera houses might bring down the gentle rain from heaven as well as the drop curtain of the stage. But as soon as fever and ague disappeared with effectual drainage, it was possible to realise that the cause of these diseases was the stagnant state of the land, and not the vengeance of an offended Deity. And when the rainfall. which at one time makes the corn grow, and at another ruins the crops before they can be garnered up by the farmer, is ascertained to be a necessary consequence of other antecedent occurrences, and its variations are brought under known laws of Nature, then probably the prayer for rain will be expunged from our Prayer Books and Church Services.

In 1853 a severe epidemic of cholera spread over this country and was very destructive in Scotland. The clergy. supported by the people of Scotland, applied to the Home Secretary to know if the Queen would appoint a day for a national fast, which was the most effectual way in their judgmen of propitiating the Deity to stay such a terrible pestilence. This view was in accord with the superstitious fancies as to the origin of disease then prevalent in Scotland, and which were once almost universally cherished alike by Pagans, Catholics, Protestants, and Presbyterians throughout the world. Lord Palmerston, the Home Secretary at the time, had the courage to set at defiance such narrow notions. On behalf of the English Government he informed the Presbytery of Edinburgh "that the affairs of this world are regulated by natural laws, on the observance or neglect of which the weal or woe of mankind depends," and he advised that it was better to cleanse than to fast, and that under the circumstances activity was preferable to humility. He urged that efforts should be made to destroy the causes of disease by improving the dwellings and other conditions of the poor. If this were done he doubted not that all would go well, otherwise pestilence would be sure to revisit them, "in spite of all the prayers and fastings of a united but inactive nation." The action of Lord Palmerston showed the triumph of common sense over prejudice; of practical wisdom over ignorant helplessness; of science over the old theological, as distinct from religious spirit, which formerly made martyrs of scientific men by persecution and sometimes by death.

In the half-century which has elapsed since the correspondence just referred to between a member of the British Government and the heads of the Scottish Presbyterian Church, science has made a progress unparalleled in any previous period. At that date the continued fevers, and

diphtheria, erysipelas, pyæmia, septicæmia, and other septic diseases were ever present mysteries. Their immediate causes were unknown, their treatment tentative and uncertain, their prophylaxis of the most general and miscellaneous character. To-day all is changed. The cause of cholera is sought for amongst the microbes, and the majority of infective diseases have been proved to be due to the invasion by specific organisms, which come from without and multiply within the body. Prevention and treatment, immunity and cure, have been, thanks to experiment, placed upon a definite and sure foundation. The very microbes which cause the disease are utilised, directly or indirectly, as the means of protection against and palliation of it.

But although the irrational opinions formerly entertained in regard to the origin of disease in particular, and to the phenomena of nature in general, are well-nigh extinct. and although the views of science and of religion (as distinct from the theological view) are well in accord as to the uniformity and order of the material world, differences still arise in reference to the complex nature of man and the relation of the mental and the material parts of him. It is too much to expect that all opposition to science and research have ceased and that superstition is got rid of altogether.

Though the struggle between theology and science is probably over and plague and pestilence, as well as earthquakes and famine, are now universally admitted to be the natural effects of other antecedent material events, research by experiment is at the present time being hotly resisted by a band of no doubt well-meaning persons whose intentions are good but whose methods are tortuous. This band having, by way of exciting prejudice, stigmatised experiments on living animals with the name of vivisectionas though all instead of a mere fraction of a unit per cent. of them were cutting experiments—has, under the assumed banner of humanity, moved a great charitable fund for the benefit of the sick poor to exclude from its bounty any direct or indirect assistance to medical education or research, and has been the cause of the appointment of a Royal Commission on Vivisection, whose report we are at this moment eagerly awaiting, though without fear or misgiving as to the

Within the last few days 7 we have read (to quote the words of Lord Curzon's letter to the Times on Nov. 4th) of an "alleged interview between a notoriously hysterical journalist and the spirit of the illustrious departed, to which publicity has been given," as a political manœuvre in favour of an unpopular Budget. We have had at the same time the opportunity of following a trial of, and a verdict with damages of £1000 against, a hypnotist, in support of whom persons were found to bear witness to his marvellous cures and to his indifference to the dangers of the "Cage of Death." The judgment of Mr. Justice Darling on this case deserves careful perusal. There is also to be seen in the latest issue of a journal whose statements carry much weight with many of its numerous readers the following extraordinary editorial admission: "We have no difficulty in believing that ulcers that have a malignant aspect may be healed by the hope that comes from a potent suggestion. have ourselves known of more than one case in which every clinical sign of malignant disease of the stomach was present, and in which a cure was effected by means that could only have derived their potency from suggestion.

One of the results of "looking back" is that we realise how phases of opinion and cycles of thought, as well as epidemics of disease, are prone to recur. It is possible for the oldest amongst us to recall periods at which mesmerism, bypnotism, thought-reading, table-turning, and faith-healing were temporarily in vogue, and then passed away again out of favour or notice. Just now there is a phase of opinion—entertained, too, by some honourable and distinguished men—that there is scope and reason for the exercise of "Suggestion" as a remedial and curative agent; and it has been seriously put forward that the already vastly overburdened medical curriculum should be still further charged by the addition of "a sound psychological training." so that every medical practitioner shall be able to

⁷ It is well known that the number 13 is omitted in the enumeration of cabins on board ship and of rooms in hotels; but an astonishing instance of present day superstition is Lord Crewe's statement in the House of Lords that an alteration was made in the Irish Land Bill "in order to change the number of the Congested Districts Board from 13, which was regarded as unlucky." (Observer, Nov. 28th.)

employ "mental therapeutics" and to engage in "the scientific practice of suggestion."

Surely it behoves the leaders of medical thought and opinion to walk most warily in this direction. A committee to make a careful scientific investigation of the nature and subsequent history of the cases asserted to have been cured by Christian Science, by hypnotism, and at Lourdes, might make a valuable contribution as to the questions involved; but I venture to think it would be highly undesirable to combine "the practice of suggestion" with the ordinary practice of our profession. Such a course seems to offer encouragement to those outside the profession to make arrogant pretensions to curative powers, and might possibly lead to unfounded accusations and regrettable indiscretions even within the profession itself, especially if the character of the cases which are regarded as proper subjects for this treatment be remembered. Even if it should come to be decided that a set of persons should be properly trained to practise treatment by suggestion, I am not quite sure that the doctor should have more to do with the treatment than merely to examine and pronounce whether the case is suitable for its employment.

I will conclude by repeating what I have previously said in the course of this address, namely, that all actions involve belief, and all successful action true belief, and that to arrive at true belief in medicine we must go through scientific scepticism to knowledge, through doubt to certainty, and replace empiricism by experiment and superstition by research.

A FURTHER CONTRIBUTION TO THE SURGICAL TREATMENT OF PUERPERAL PYÆMIA.

BY ERNST MICHELS, F.R.C.S. ENG., SURGEON TO THE GERMAN HOSPITAL.

In 1903 I reported a case of severe puerperal pyæmia in which, following Trendelenburg's suggestion and example, I tied the left ovarian vein, preventing in this way the further propagation of the septic process and obtained a rapid and complete recovery in an apparently hopeless case. Since that time I have had two more cases of this kind under my care and will report them quite shortly.

CASE 1.—The patient, who was 23 years of age, was admitted into the German Hospital on Oct. 25th, 1908. She had been confined on Oct. 11th; two days later she began to feel ill, and on the third day she had a severe rigor. rigors recurred very frequently; treatment by intra-uterine douches brought no improvement. On admission the temperature was 105° K., the pulse was very rapid, and the patient was very ill and slightly delirious. The uterus was soft and very little enlarged, and the os was permeable; there were no discharge, no laceration, and no swelling in either broad ligament. The abdomen was soft; there was no rigidity, no distension, no vomiting, in fact no sign of peritoneal irritation. Some shreds of placental tissue were removed from the uterus, and its cavity was washed out with lysol; after this the temperature came down to 100°. On the following days, however, severe rigors recurred, during which the temperature rose to 106.40 and 107°, and even in the interval between the rigors the patient was very seriously ill. I had no doubt in my mind that this was not an infection of the purely pyemic type, and that general septicæmia was largely responsible for the condition. But bearing in mind the result of my first case I thought it right to prevent as far as possible the further entrance of septic matter into the circulation. On Oct. 29th (18 days after delivery), under spinal anæsthesia, the patient having had an injection of scopomorphine first, the abdomen was opened in the middle line. There was no peritonitis; the left ovarian vein was felt as a thick cord completely blocked by a soft thrombus rising from the broad ligament. Its peritoneal covering was divided and the ligature was applied as high as possible, but I was doubtful whether it was really placed above the central end of the thrombosis. The right ovarian vein-which was also thrombosed, although to a much smaller extent-was treated in the same way. From a small incision through the posterior peritoneum in the middle line the two internal iliac veins were exposed but, as

they did not show any signs of disease, were not isolated or Of the further course of the case I have only to state that the operation failed to bring about the desired relief. For a short time the patient was distinctly better, but soon she began to complain of pain in the right knee and in the left elbow. On Oct 31st she had a fresh rigor. Undoubtedly septic matter continued to enter into the circulation, and, as I attributed this to the ligature of the left ovarian vein having been placed too low down, I exposed the vein once more by a retroperi-toneal incision, isolated it with great difficulty from the ureter, the parts being all matted together and almost indistinguishable, and placed another ligature just below the termination of the vein. This ligature, however, cut through, and pus escaped from the central end, but no blood. There could be no doubt that the infection had spread beyond the reach of practical surgical measures. Within the next few days the signs of severe septicæmia and pyæmia increased markedly; the right knee-joint was found to be full of pus and had to be opened (Nov. 3rd); from Nov. 5th rigors recurred every day, and the patient died on the 12th, 32 days after her confinement. The necropsy showed the large glandular organs in a state of fatty degeneration; some of the inguinal and iliac lymphatic glands were suppurating. The right ovarian vein was occluded above and below the ligature by a healthy thrombus; the two internal iliac veins were free from thrombosis and quite patent. The case presented undoubtedly some of the worst features of puerperal infection; in addition to the pyæmia there were also obviously signs of septicemia.

CASE 2.—The next case was more satisfactory. patient, who was 38 years of age, had had six children. The history of her last pregnancy remained somewhat obscure, as for some reason details were concealed from us as far as possible, but we were able to ascertain that there had been an early abortion on April 5th or 7th, 1909, hæmorrhage continued until April 10th, and from that date daily recurring rigors set in. The patient was admitted on April 15th, with a temperature of 99° F. and a pulse-rate of 72. She looked very ill and anæmic. The uterus was only slightly enlarged, and at its right side, filling up the right broad ligament, was a hard swelling of the size of a small apple, immoveable and very tender. A few hours after admission a severe rigor occurred, the temperature rising to 104.60 and the pulse to 124. This being the fifth or sixth rigor since the commencement of the illness, it was decided to lose no time, and on the following day the abdomen was opened. The right broad ligament was found distended by large coils of thrombosed veins; laterally the thrombus extended well up behind the peritoneum along the interior of the ovarian vein. The peritoneum over the ovarian vein was incised; the vein was ligatured some distance above the thrombus and its peripheral end was excised, together with the whole of the right broad ligament and its venous plexus. This part of the operation caused considerable difficulty, as the tissues were very friable, so that all ligatures cut through, and to stop the continuous oozing from the lateral wall of the uterus and from the floor of the pelvis I had to amputate the uterus. The left ovarian and the two internal iliac veins were healthy and required no ligature. A small strip of gauze was placed into Douglas's pouch and another over the central stump of the ovarian vein. The abdominal wound was closed in the ordinary way. The patient made an excellent recovery. The temperature for three days remained between 99° and 101 2°, but no rigors occurred, and from the fourth day the pulse and the temperature were The wound healed by first intention, and the normal. patient left the hospital well and strong on May 15th.

When I reported my first case only very few instances of this operation had been recorded, and the number of successful cases was lamentably small. Only one patient besides my own case had been saved by the operation. In the course of the last few years, however, by the work of several surgeons, some more experience has been gained, and the operation appears in a more favourable light. Bumm, in Berlin, has had fairly good results, and is now a strong advocate of the principle of the operation—viz., the localisation of the septic process by ligature of the great venous trunks coming from the pelvis. Among English-speaking surgeons Cuff, Bland-Sutton, Lendon and Moore in Australia, and chiefly Dr. Whitridge Williams have performed the operation, and

have recommended this form of treatment. Altogether I have been able to collect 64 cases (including my own 3), in which one or several of the large pelvic veins were tied for puerperal pyæmia, and of these 64 patients 29 were saved. This means a mortality of 55 per cent., but, the numbers being so small, I do not think much will be gained by grouping the cases after statistical principles, particularly as we have to do with an illness of which hardly two cases are alike. To form an opinion of the value of the operation one has to study the individual cases, and one may obtain in this way some guiding rules in what class of cases the operation might be undertaken with some chance of success, and how it should be done.

We ought, of course, first to ascertain what is the mortality in cases of puerperal pyæmia not treated by operation. found it extremely difficult to obtain a satisfactory answer to this question. In most statistical tables no sharp distinction is made between deaths from puerperal pyæmia and from other kinds of puerperal sepsis, and one has to rely to some extent on the personal impressions of those who have watched a fair number of these cases, and these impressions are somewhat contradictory. While Bumm places the mortality at more than 80 per cent., Olshausen thinks this an exaggerated estimate, and estimates a mortality of about 55 per cent. There is, however, a general consensus that the disease, although often very protracted, is a very fatal one, and one in which recoveries are rare, and that all forms of treatment hitherto at our disposal are disappointing. mortality of 66 per cent. is, in my opinion, certainly not too low an estimate, and this corresponds with Whitridge Williams's view.

Which class of cases, then, should be selected for surgical interference! All those who have studied the subject agree that in the very acute cases of puerperal pyæmia the chances of success are exceedingly small; in these cases which are due to infection by a particularly virulent type of streptococcus the infection is not propagated along the venous system only; the coats of the veins are quickly pervaded by the cocci and infection spreads along the lymphatic vessels and within the great serous cavities, so that a ligature of the venous trunks can shut off only a very small proportion of infectious matter. On the other hand, Bardeleben has shown by a very interesting series of experiments that if the veins are entered by streptococci of somewhat attenuated virulence, the vascular wall, particularly the endothelium. offers a powerful resistance to the cocci; they are unable to penetrate through the walls of the veins, and their only way of spreading lies within the lumen of the vessels. It is in this class of infection by an attenuated virus that ligature of the infected vessel has its best chance. If by ligature and division of the vessel the cocci are prevented from migrating further they succumb to the resisting powers of the endothelium and of the leucocytes. Clinically it may not be quite easy to distinguish between these two types of infection, at all events in the commencement of the illness. Where the clinical signs of septicæmia prevail and the rigors, which are so prominent and occasionally for some time the only symptom in puerperal pyæmia, are hardly more than a temporary accentuation of the morbid condition, the chance of localising the process by ligature of the veins is very small; on the other hand, patients whose condition in the intervals between the rigors is satisfactory, whose pulse remains good, should have the operation done without much delay. In these cases the decision to operate is often facilitated by the appearance close to the side of the uterus of a hard, tender swelling, formed by the thrombosed veins; it indicates a more or less localised lesion, and, at all events, gives a clue on which side the operation would have to be done.

When Trendelenburg originated this method of treatment he chose the retroperitoneal route to reach the thrombosed veins and in my first case I followed his teaching. I was agreeably surprised to find the operation technically a comparatively easy one; there was no difficulty whatever in exposing the internal iliac and the ovarian vein and to isolate the latter from the ureter; but the conditions were very different in my second case, when, not satisfied with my transperitoneal ligature, I tried to expose the ovarian vein behind the peritoneum close to its opening into the renal vein. On that occasion I found the parts all matted together and very difficult to distinguish one from another. Other surgeons

have found the same difficulty, have even failed to find the trunk of the ovarian vein, and have had the misfortune to injure the ureter, and it seems that in the majority of cases the retroperitoneal operation is more difficult and dangerous than the transperitoneal method. Moreover, the retroperitoneal operation gives access only to one side, and in some cases would have to be done bilaterally. The transperitoneal operation offers the one great advantage: that the extent and the localisation of the disease can be made out at once; with the patient in Trendelenburg's position, the broad ligaments, and emerging from them the ovarian veins, may be identified and dealt with without any difficulty, and a small incision into the parietal peritoneum of the posterior abdominal wall will expose the internal iliac veins. These latter, however, if thrombosed, and in the presence of some periphlebitis, may require a great deal of careful dissection before the ligature can be passed round. A case has been recorded (Haeckel) in which it was found impossible to isolate the internal iliac, and the ligature had to be placed on the common iliac vein. The case was not successful, but the nutrition of the leg did not suffer, and Bumm thinks it permissible to tie the common iliac vein in cases in which the thrombus extends very high up into the internal iliac. Bardeleben, in a successful case, was unable to isolate the vein from the artery, and had to include the artery in the ligature without any untoward results. These two modifications may sometimes be preferable to prolonged attempts at isolating the internal iliac vein.

Theoretically it would seem advisable to tie all four great pelvic veins, the two internal iliac and the two ovarian—and also a very frequently found median iliac vein—so as to exclude all possible channels for the spread of infection. But a fair proportion of cases have been recorded in which, after ligature of two or even of only one of the pelvic veins, a good result was obtained. It is the great advantage of the transperitoneal operation that all four veins can be completely exposed and examined, but it seems sufficient if the ligature is applied to those which are actually diseased, particularly in cases which could not stand prolonged dissection, and they will be the majority. The ovarian veins should be ligatured as near as possible to their point of termination.

Latzko in Vienna has tried several times, and once with success, to approach the diseased veins by the vaginal route. It is impossible to withhold one's admiration for the great skill and dexterity with which this must have been done, but I believe very few surgeons will be inclined to follow his example. View and space are necessarily limited and haemorrhage or any other complication could be controlled only with great difficulty.

Ligature of the veins, or, better still, double ligature and division has proved sufficient in most of the successful cases, but it may well be questioned whether the results could not be improved by excision of the diseased vessels or, in cases where, for some reasons, the retroperitoneal route is chosen, by slitting them open and evacuating their septic contents. In my two successful cases I acted in this way, and I cannot help thinking that the unexpectedly rapid recovery was due to this more radical procedure. Prochownik in Hamburg operated in the same manner and had a very satisfactory result, marred only by a septic infection of the abdominal wall. I admit there is a certain amount of danger attached to this method; the peritoneum may be infected, or the hæmorrhage may be considerable and may necessitate, as in my third case, removal of the uterus. But it is undoubtedly in accordance with our general surgical principles to remove the septic focus wherever and whenever possible. Some further experience is required to show whether this extended operation is really advisable. I would advise in such a case drainage of the abdominal wound. Several otherwise successful cases have been retarded in their convalescence by septic infection of the abdominal wall. The loose flaccid layers of the abdominal wall after pregnancy seem to be particularly favourable to the spread of infection, and the small precaution of drainage is likely to be well repaid.

That there is a certain amount of danger in the operation cannot be denied. In the transperitoneal operation the possibility of a general peritoneal infection ought to be borne in mind, but we should be able to guard against this just as we are able to protect the peritoneum in operations for a gangrenous appendix. It has also been said, and with

justification, that patients suffering from puerperal pyremia are bad subjects for any operation; if we decide to operate earlier this argument is likely to become less important.

It is naturally with some diffidence that one recommends an operation which so far in 55 per cent. of the cases has been unsuccessful, but I would appeal to anyone who will take the trouble to study the individual history of those cases who recovered after the operation. They were all very seriously ill and seemed to be going down-hill rapidly, and I believe I am not saying too much if I state my opinion that the very great majority of them would have died without surgical interference. And among the many failures we find the very first operations which were done tentatively and hesitatingly -often after too long a hesitation. Moreover, a good many cases are included in the list in which, from the nature of the infection, a good result could not possibly be anticipated. By making a careful selection of cases suitable for the operation and by operating at an early stage much could be done to reduce the mortality. Dr. Whitridge Williams has lost only one patient among his five operations, and thinks that in future the mortality should not exceed 10 per cent., at least in cases where thrombosis is limited to the ovarian veins.

It is evident that this form of treatment is still on its trial and that many questions remain which will only be answered by a much more extensive experience, but I think the following may be suggested as a good working rule for the present. 1. In cases of puerperal pyæmia an attempt should be made to localise the septic process by ligature of the great pelvic veins (ovarian and internal iliac and possibly median iliac). 2. The very acute cases of puerperal pyzemia are not suitable for this operation, but the more chronic cases which are due to infection by an attenuated virus promise a good success, provided the operation is not delayed too long. 3. The veins should be exposed by the transperitoneal route in preference to the retroperitoneal or vaginal way. 4. All the four great venous trunks should be exposed and examined, but isolation and ligature seem necessary only for those veins which are actually found diseased. 5. Further experience is required to decide whether the results can be improved by excision of the venous trunks and plexuses in preference to simple ligature.

the venous trunks and plexuses in preference to simple ligature.

Literature (in chronological order).—1. Freund: Hegar's Beiträge zur Geburtschülfe und Gynikologie, 1898, Band i., p. 397. 2. Bumm: Chirurgische Behandlung des Kindbett-Fiebers. Graefe; Sammlung zwangloser Abhandlungen. 1902. Band iv., p. 4. 3. Trendelenburg: Die Chirurgische Behandlung der Puerperalen Pyämie, Münchener Medicinische Wochenschrift. 1902. p. 533. and a Review of Surgical Progress, Journal of the American Medical Sciences, 1906. p. 82. 4. Sippel: Die Operative Behandlung der Puerperalen Pyämie. Zentralblatt für Gynikologie, 1902. p. 361. 5. Michels: The Surgical Treatment of Puerperal Pyæmia, The Laxoer, 1903. vol. i., p. 1025. 6. Opitz: Uber Heilungs-Aussichten und Behandlung der Puerperalen Pyämie, Deutsche Medicinische Wochenschrift, 1904. p. 910. 7. Bumm: Operative Behandlung der Puerperalen Pyämie, Berliner Klinische Wochenschrift, 1905. p. 824. 8. Haeckel: Unterbindung der Venæ Spermaticæ, &c., Deutsche Medicinische Wochenschrift, 1905. p. 1702. 10. Opitz: Deutsche Medicinische Wochenschrift, 1905. p. 1702. 10. Opitz: Deutsche Medicinische Wochenschrift, 1905. p. 2008. 11. Rosthorn: Ibid., 1905. p. 897. 12. Cuff: Journal of Obstatrics and Gynacology of the British Empire, 1906. p. 317. 13. Friedemann: Münchener Medicinische Wochenschrift, 1905. p. 2018. 14. Herff: Winkel's Handbuch der Geburtshülfe, vol. iii., p. 339. 15. Lehnhartz: Medicinische Kinik, 1906. p. 1813. 14. Herff: Winkel's Handbuch der Geburtshülfe, vol. iii., p. 334. 17. Bardeleben: Streptococcus und Thrombose, Archiv für Gynikologie, 1907. p. 1. 18. Fromme: Münchener Medicinische Wochenschrift, 1907. p. 505. 21. Lendon: Australasian Medical Gazette, 1907, p. 120. 22. Moore: Intercolonial Medical Journal, 1907, p. 386. 23. Seltz; Die Operative Behandlung der Puerperalen Pyämie, Volkmann's Klinische Vochenschrift, 1908. p. 308. 25. Berkofsky: Deutsche Medicinische Wochenschrift, 1908. p. 308. 25. Berkofsky: Deutsche Medicinische Wochenschrift, 1908. p. 309. p. 26

HUNTERIAN SOCIETY.—The last day for sending in essays for the silver medal of this society will be Dec. 31st. The medal is awarded for the best essay embodying the results of original observations by a general practitioner.

THE TREATMENT OF NÆVI AND OTHER CUTANEOUS LESIONS BY ELECTRO-LYSIS, CAUTERY, AND REFRIGERATION.¹

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Ever since I took charge of the electrical department of the London Hospital the treatment of nævi has been a very important feature of the work, and the number of cases to be treated has steadily and rapidly increased. In a period of six years some 2000 cases have been treated by myself, and during that period the methods employed were electrolysis, puncture with a fine galvano-cautery, and the high-frequency spark. In one case, involving the left mamma of a female child, I used pieces of sterilised magnesium ribbon plunged into the growth and left there. I hoped by this method to avoid destroying the mammary gland, and so far as one could judge the result was satisfactory; but, of course, it is impossible to be sure of this until the child reaches puberty. I am convinced that this method of treating næveid growths has a definite value, but I am also of the opinion that for routine hospital practice it is not suitable.

Electrolysis. - While I used this agent very freely at first, latterly I have reserved it for the cavernous type of nævus, for which I find it the most satisfactory of all that have been proposed. While excision is an ideal method from a theoretical point of view, I am sure surgeons will admit that the method is frequently followed by recurrence—at least I often have cases referred to me for electrolysis in which this has followed excision of the original growth. Possibly also surgeons have had to excise a recurrence following an electrolysis by myself, but if so, they have been polite enough not to tell me of it. In this, as indeed in all methods of treating nævi, the secret of success is to know when tostop. It is better to do less than enough and to finish on a subsequent occasion than to risk an unsightly scar through trying to make one operation do all that may be necessary. It is, no doubt, good policy, even advisable under certain conditions, to make one operation suffice, but when this is done, even with the greatest care, there is no little risk of the resulting scar being less elastic and more noticeable. On the other hand, by adopting a less vigorous plan of campaign and giving full time between the operations for the effects of each to be developed, I have had the most satisfactory results in cases of such severity that the outlook seemed wellnigh hopeless.

One case in particular—a deep, cavernous nævus, involving the left side of the face from orbit to chin-was treated by electrolysis, piecemeal, for nearly two years, during which period the child was anæsthetised no less than 16 times. The result was better than I dared to expect. The face was very nearly symmetrical, and while the affected side was mostly scar-tissue it was soft, pliable, and elastic; every trace of nævoid tissue had disappeared, so far as one could tell. For this method of treatment I always use the bi-polar needle designed by Dr. Lewis Jones. Mine has fairly stout platinum needles, which are heated to redness in the bunsen flame before and after each insertion. They are allowed to cool before being pushed in, except when dealing with scartissue, which is usually very resistant. Here much time is saved if they are inserted while still hot. I have never seen any bad results from this, and what would be a matter of considerable difficulty otherwise becomes quite easy.

I generally use a potential of 10 volts, corresponding to six or eight Leclanché cells, and this is turned on to the needles before the latter are placed in position, the skin itself forming an excellent rheostat.

Cautery puncture.—In my experience the majority of cases can be satisfactorily dealt with by means of a fine galvano-cautery. It has the merits of efficiency, simplicity, and economy of time. Its chief value is in the treatment of capillary and stellate navi, and even those of the cavernous

¹ A paper read before the Electro-Therapeutical Section of the Royal Society of Medicine on Nov. 19th, 1909.

Obviously, to get the best result, our aim must be to destroy as little normal tissue as possible; all we require is to set up a simple fibroplastic inflammation, which will cause a clotting of the blood in the nævoid vessels, and these in turn will become obliterated by the resulting new-formed

fibrous tissue and its subsequent contraction.

In treating a capillary nævus I first ascertain by inquiry and inspection if the growth is spreading, and if it is my first efforts are directed towards preventing this progressive increase in size. This I do by making a series of punctures, about one-eighth of an inch apart, along the nævo-cutaneous margin, so that the influence is exerted as much in the healthy skin as in the nævus itself. If the nævus is a small one, say less than three-quarters of an inch in diameter, probably nothing more will be required, and except in the large ones this is a very convenient point to stop for the first application. The growth is now safe against spreading, and it sometimes happens that the vessels feeding it are so seriously inter-fered with by what has been done that after a period of two or four weeks the growth has undergone a reduction in size as well as in depth of colour. In such a case it is obvious that there will be less to do to finish it off, and in this way we conform to the principle of destroying as little of the original tissue as possible. With the larger capillary nævi it is, of course, advisable to go over the surface as well as the margin. The punctures should be from one-eighth to a quarter of an inch apart, and, in my opinion, should go right through the whole thickness of the skin. In nearly all cases the cautery should be quickly withdrawn the moment the sense of resistance, which the skin gives, is lost. This prevents the action of the cautery extending too far.

My reasons for insisting on going right through the skin are two: in the first place it is otherwise impossible to be sure that the nævus will be affected right through its entire thickness, and secondly, because it is much less painful afterwards. You can easily understand that if you are making a lot of punctures into, but not through, the skin a number of them will be burns of the third degree—which are

intensely painful as you well know.

After a nævus has been treated in this way the immediate result is a pink scar with a somewhat pitted surface, the pits corresponding to the individual punctures. As time goes on the surface becomes paler and more uniformly smooth. In the case of children seen about 12 months afterwards the area is soft, smooth, and elastic, and as to colour scarcely to be distinguished from the surrounding skin. The pitting left by the punctures is still present, but not very noticeable. tends to become less perceptible as time goes on, but slight traces can be found years afterwards.

The high frequency spark ("fulguration").—The only class of nevi that are beneficently influenced by this method is that comprising what is generally called the "port-wine applicable where the growth only involves the superficial layers of the skin. The method of procedure is akin to that described as "falguration" and practised to some extent on the continent for malignant growths, but any ordinary highfrequency apparatus is sufficiently powerful for our purpose.

I have now treated about 20 cases by this method, some of which have had several applications. The milder ones have been cured to all intents and purposes; the more severe ones The milder ones have have been improved to an extent which is roughly inversely proportional to the severity of the original lesion. The method of making the application is familiar to everyone and so need not detain us.

From my own experience I am of the opinion that the narrower the spark-gap and the closer the metal point electrode is to the skin the more superficial is the effect produced, the more does the thermic effect predominate over the electrical effect, and the changes are produced more rapidly. I am also of the opinion that under such conditions we are more frequently troubled with keloid changes in the scar; this I attribute to the thermic effect, because I feel sure that the

disagree with me in this. It is merely a record of my own personal observations. I find, however, that any highfrequency application made with the electrode close to the skin surface, and long enough to produce at least some destruction of tissue, is very likely to be followed by keloid The minimum distance of the electrode from the changes. skin should be about three-quarters of an inch. It takes a longer time to get the desired reaction, but the effect penetrates more deeply and is less likely to be followed by keloid' With such an interval between the changes in the scar. electrode and the skin, the application is so painful that a general anæsthetic is almost always necessary, and the troubles of the anæsthetist are not made lighter by the objectionable noise, which seems an unavoidable part of the procedure. Ether must not be used on account of the risk of the vapour catching fire from the spark—this has happened once to my personal knowledge, owing to an assistant accidentally filling the usual chloroform bottle with ether.

While I consider the high-frequency spark a valuable means of treating "port-wine stains," I have almost entirely discarded it for the new method I now propose to show you. As a result of the experience I have had with the foregoing methods in this work, I look on no case as too severe to make some serious effort, especially in female children, to remove an unsightly birth mark. Practically every case can be vastly improved, while the less severe ones can be cured to all intents and purposes. With care and not attempting to do too much at one time, unsightly scarring is avoided, and deformity from cicatricial contraction kept

within the narrowest possible limits.

Refrigeration.—The methods so far described have been those employed by me almost exclusively up to midsummer of the present year. At that time Dr. Geyser of New York called on me and asked me if I would try a method employed by him for nævi and various superficial conditions that in his hands had been remarkably successful. This I put into practice forthwith, and the method is so free from the objections common to most others, and the results are so satisfactory, that I now treat more cases with it than by all the other

methods taken together.

The process is one of refrigeration and is carried out by means of the local application of solid carbon dioxide. This is obtainable in iron cylinders, containing some 20 or 30 pounds of the liquefied gas, at a pressure of over 20 atmospheres. It is obtained from the combustion of coke and finds its chief use in the mineral water industry. When the liquefied gas is allowed to escape into the atmosphere the sudden expansion causes a prodigious lowering of temperature, and it appears in the form of a white semi-solid snow. By collecting this in a suitable receptacle it can be formed at once into a comparatively hard stick or crayon, not unlike an ordinary candle in appearance. Also, it can be compressed into a mould of any desired shape or size, and subsequently cut to any form with a knife. The temperature of the frozen gas is -79° C. (110° F.).

Of course, making use of low temperatures in treatment is by no means new. On the continent cases of lupus vulgaris have been successfully treated by ethyl chloride spray. Later liquid air was tried, and I understand that two or three months ago a demonstration on the use of liquid air in dermatology was given in this room by the late Dr. Radcliffe Crocker, whose recent demise we all lament. While liquid air possesses the quality of intense cold to a degree far surpassing anything we know of, it is extremely difficult, even impossible, to use it in an efficient manner. Its liquid form is responsible for this, making it difficult to control and impossible to make use of that most important adjunct-pressure. Whatever be the agent we employ for the freezing process, the principle involved is of course the same, but that is not to say that the different agents are equally advantageous in practical use.

The point I wish to emphasise about solid carbon dioxide is that it is a solid and yet sufficiently soft that it can be moulded or cut to any convenient size or shape. Also, for the same reason, it enables us to use as much pressure as we wish and thus freeze the tissues to any desired depth within reasonable limits. A further point to be remembered is that our freezing agent maintains a constant temperature. As the tissues give up their heat to the crayon the surface of the latter becomes gaseous and escapes into the atmoscars following heat burns are more prone to keloid changes sphere. At ordinary atmospheric pressures carbon dioxide than those from other kinds of injury. Probably some will at -79° C. is a solid, at -78° C. it is a gas. The surface in contact with the part under treatment is thus being constantly renewed.

To say that the crayon is "in contact" is probably not literally correct. It is more likely that it is kept apart from the part under treatment by a thin layer of gas. For this reason, it is possible to hold a small piece loosely in the hand without discomfort. Also, if a flat disc of solid CO_2 be placed upon a level sheet of plate glass, slightly warmed, the disc can be seen to be in constant motion, and if one end of the glass be raised the disc slides down the slope with rapidity out of all proportion to the degree of inclination. It will be seen that some pressure is necessary to get any effect at all, but owing to its rigidity we can make as much pressure as may be necessary.

It is this matter of pressure that gives CO2 such a great advantage over other refrigerants. The solid gas evaporates very slowly. A crayon five inches long and one inch in diameter will last from one to two hours if left in an ordinary room. Wrapped in cotton wool it loses about half its weight in a period of four hours. such a crayon I have made over 30 applications, a piece about one and a half inches by half an inch remaining.

Dosage. - As with any other new agent, so with this-we have much to learn. There is no reason, however, why the question of dosage cannot be reduced to almost mathematical accuracy here. As we have seen, the temperature of our crayon is a constant one. Hence

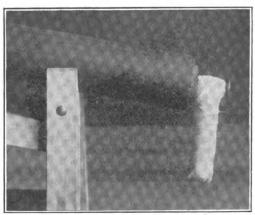
firmly pressed down, so as to drive the blood out of the part, or at least arrest the circulation. The average duration of the application will be about 40 seconds. If there is bone immediately beneath, a shorter time will do. If on a soft place such as the thigh or abdomen, it should be a little longer. A "port-wine mark" is best treated with a moderate degree of pressure, depending on the depth of the lesion. For a cavernous nævus the end of the crayon may be the same size or slightly smaller than the area of the growth. A long application with deep pressure should effectually freeze the whole mass. In any given case the time and pressure of the application will be decided by the conditions present.

The diseases curable by this agent are numerous, and, I fancy, will be of great interest to dermatologists. As I have

said, I now use it for nævi more than all the other methods I have mentioned taken together. It is very successful for moles and other blemishes; it seems to have a favourable influence on lupus erythematosus, and I have successfully treated patches of lupus vulgaris. It answers excellently for warts. In the treatment of the latter, a long application is necessary on account of the poorly conproperties of the I do not time the ducting growth. application: after trimming the crayon to the size of growth, I apply it with firm pressure until a narrow zone of healthy tissue around the base is frozen. If we stop before this the result will not be satisfactory. In the keratoses accompanying X ray

dermatitis, brief applications

Fig. 1.



the only variable factors in Showing towel secured to valve with bandages and ready for filling.

Fig. 2.



Before operation. dosage are time and pressure. There is no difficulty about the measurement of time, and a holder with a spring inside, which is adjustable, would solve the latter point. I doubt, however, if this will be necessary—but it is easy to see how the depth and intensity of the subsequent reaction could be regulated with almost absolute certainty.

I am always adverse to the use of any appliances that tend to efface the personal equation entirely, and in this case no very great experience is required to make the necessary pressure one's self. To come to practical details, take the case of an ordinary capillary nevus of moderate size, less than one inch in diameter in any direction. I trim the crayon roughly to the shape of the nævus, and I prefer



Fig. 3.

Three weeks after operation.

answer exceedingly well. The list of diseases to which this agent is applicable will probably be extended very No doubt within the next year or so dermatologists will have much to tell us on this subject.

The preparation of the solid carbon dioxide. - The first requirement is obviously a cylinder of the compressed and liquefied gas. A large cylinder is much the more satisfactory. It should be mounted on a stand at a convenient height and with the stopcock on a lower level than the opposite end, so that the liquid gas covers the inner orifice of the valve. next procedure will depend on whether we have a large or a small number of applications to make. In it to be slightly larger. It is now applied to the nevus and any case we shall require an ordinary cylindrical

ruler about an inch in diameter and a hand-towel. The latter is folded into three, lengthwise, and rolled around the ruler as tightly as possible. The ruler being withdrawn, we have a hollow porous cylinder, in one end of which we place a short, loosely fitting cork. If we have a large number of applications to make, we take an ordinary bandage and bind around the towel a few turns and apply its open end over the cylinder outlet. The bandaging is now continued in such a way as to secure the towel to the valve and make as tight a joint as is possible to do by bandaging. I find two ordinary bandages sufficient. The gas cylinder is now turned so that the valve is pointing downwards and the valve opened, allowing the space within the towel to become filled with the soft CO_2 snow, which later becomes solidified, and this is continued until it is packed firmly. (Fig. 1.)

The fixing of the towel and the management of the valve require a certain amount of practice, but it is the easiest method of getting a large firm crayon. After the valve is closed the bandages are removed, the towel unrolled, and the crayon secured with a turn or two of lint. It is now ready for use. If we require enough for one or two applications only, instead of binding the towel to the cylinder valve we hold it in place with one hand while we open the valve with The towel becomes filled with the soft snow, and we cut off the gas as soon as it begins to blow off around the We now place this snow in a metal or vulcanite tube of the desired shape and size, and pack it down hard with a suitable rammer, using a mallet if a particularly hard crayon is wanted. No matter how hard we pack it it at once frees itself, and can be pushed out quite easily. The tubes for moulding can be of any shape or size. The square one is used for doing large areas without leaving intervening spaces untreated, as would be the case if a round applicator were used.

Effects of the application.—On removing the crayon after an application the depression made by it remains; the frozen surface is pure white and hard, like a piece of china. The process of thawing occupies about the same time as the application, and the depressed tissue gradually returns to its normal place and colour and is found to be covered with moisture of condensation. Reaction sets in immediately within a few seconds the treated area is of an appreciably firmer, brawny consistency, and in two or three minutes perceptibly swollen. A wheal develops, with acute hyperæmia, within half an hour, and a vesicle frequently within an hour, but this may take longer or not develop at all in the case of a very short application. An application of 30 seconds or longer will almost certainly be followed by scarring. A very intense superficial destruction is obtained by a second application immediately after the tissues have thawed out from the first one.

With regard to the after-treatment, this is very simple. Boric acid ointment is what I use almost invariably. If a blister forms the fluid is carefully let out, and this may have to be done a second or even a third time. Within a few days a crust forms which should be allowed to come off of its own accord. The treated area is completely recovered in about a fortnight. The surface is then perfectly smooth and of a delicate pink colour, which gets paler as time goes on. The ultimate result is a pale, soft, pliable, and elastic scar which is as good as, or better than, any produced by any other caustic agent, or even radium. Like radium, and unlike the cautery or other caustic agent and electrolysis, there is no immediate destruction of tissue; the results are achieved by a reaction set up in the tissue itself, and we have a complete range of effect, from a simple mild hyperæmia which clears up in a few hours to a complete necrosis. Unlike radium. it is cheap, and instead of waiting days or weeks for a reaction we get this within a few hours. I predict that it will displace radium for many of the purposes for which the latter is now used.

I show some results obtained. In a photograph they do not differ greatly from those treated by other methods, and no good purpose would be served by showing a number. (Figs. 2 and 3.) These are typical of the results. In the majority of cases a single application lasting from 30 to 60 seconds is all that is necessary. If the cure is incomplete a second one can be made as easily as the first.

The application is practically painless, and no anæsthetic is ever necessary. I have had children who never moved or cried during the application. The majority do make a noise, but this is more because they are held still than of the pain. In the remaining three cases the children

It is a curious fact that many adults voluntarily say, "It is beginning to hurt now," at about the twenty-fifth second. The "thawing out" is more painful and uncomfortable than the freezing. With regard to time, two or three cases can be finished off while one is being anæsthetised for electrolysis or cautery. I have treated 30 cases within an hour and a half.

I have not yet seen any keloid in the resulting scars, nor have I had an opportunity of examining the changes that take place in the frozen tissue. It is quite possible that at this very low temperature changes other than those following ordinary frost-bite would be found. Ordinary frost-bite lasting no more than 60 seconds does not produce anything like the same degree of reaction that we get with solid carbon dioxide. With the fixation and rigidity which occur just below freezing point, followed by the expansion of the frozen liquid part of the tissues, which must take place with this extreme lowering of temperature, it is conceivable that the cells are mechanically injured, the reticulum broken down, and the cell-wall burst, just as a bottle full of water is fractured after being left outside on a frosty night. This would at least account for the immediate and profound reaction that occurs after application. This, however, is conjecture, and I shall be glad to have the views of others regarding this question.

To say that solid carbon dioxide is merely a caustic, as some have asserted, is not quite correct. All caustics, strictly so-called, destroy tissue immediately—e.g., the actual cautery, and various chemical substances—but CO does not do so. After the part has thawed out, the whole of the treated area is still living, as evidenced by the intense reaction which sets in. Local death may occur later, owing to inflammatory stasis; but this is the result of a vital reaction, and not an immediate result of the application of the irritating substance.

In conclusion, I wish to apologise for such a lengthy paper, but I am sure it will be agreed as to the value and importance of this interesting and fascinating substance as a therapeutic agent. Personally, I look upon solid carbon dioxide as the most important addition to the dist of physical agents employed in therapeutics since that of radium, and, as I have already stated, I predict that it will be found to compete successfully with radium in the treatment of many superficial lesions.

Upper Wimpole-street, W.

THE INFLUENZA BACILLUS THE CAUSE OF AN EPIDEMIC OF BRONCHO-PNEUMONIA.

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AND

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THE cases which came under the personal observation of one of us were five in number and embraced all the children in one family, but there were also two other children in an adjoining house who suffered from pneumonia at the same time. The history of the five cases is as follows:—

In October, 1908, one of us was asked by Mr. R. Clayton Morris to see the children of a certain Mrs. A who were suffering from pneumonia. All five children, their ages varying from 12 months to 9 years, were in bed in one room, three of them dangerously ill with pneumonia and the other two less seriously. The previous history was that all had been strong and well with the exception of the oldest, a girl aged 9 years, who was said to have had tuberculous peritonitis some years ago and had made a good recovery from it. The history of the onset of the illness was as follows. The first of the children to fall ill was a boy aged 7 years, who sickened on Oct. 12th, and was quickly followed during the next two days by the other four children. They became feverish and ill without any definite rigor, although most of them vomited at the commencement of their illness, and two of them—namely, the first two—commenced with pains in the limbs and sore throat and were supposed to have influenza. In the remaining three cases the children

simply became feverish and rapidly developed lung symptoms. None of them had herpes labialis. One of us saw the children on the third day after the onset of symptoms (Oct. 14th) and the condition of matters was tragic in the extreme. All of them had bronchopneumonia involving both lungs, and three of them had temperatures of 102° F. or over, a pulse-rate of over 140, and respirations over 70 per minute. The two worst, the boy aged 7 years and a girl aged 2, were unconscious, and the boy evidently had not long to live. The boy was too ill to be moved, but the two younger girls were admitted to hospital, leaving the baby and the oldest girl, who was not very ill, to be nursed at home, as the mother's resources were somewhat limited. The pneumonia was of bronchopneumonic rather than of lobar type, the dulness and tubular breathing not being so extreme and extensive as in pneumococcic pneumonia. The boy never rallied at all and died on Oct. 15th, the fourth day of his illness. The girl aged 2 years died on the fifth day of her illness, gradually sinking in spite of all that could be done, and the other three children recovered, the two older girls somewhat rapidly and the baby after three weeks' illness.

An endeavour was made to ascertain the nature of the micro-organism causing the condition, both by taking cultivations from the organs of the boy who died on Oct. 15th and by cultivations from fluid obtained by exploratory puncture of the consolidated lung from the children in hospital; but no organism was isolated until the organs from the child who died in hospital were carefully investigated. The ears of the children were carefully examined, but suppurative otitis media was not the cause of the severity of the symptoms. In the case of the girl who died in hospital there was some congestion of the left membrana tympani two days prior to her death, but no suppuration, although at the necropsy pus was found. Clinically the remarkable feature of the cases was the suddenness with which all five children were attacked and the severity of the pneumonia in each case.

Necropsy. - A post-mortem examination was performed by one of us on the body of the girl, aged 2 years, who died in hospital, on Oct. 19th. The body was that of a well-developed and well-nourished child. Rigidity was present but not marked. There was some lividity of the lips. There was nothing of note in the heart. Both lungs showed a recent acute fibrinous pleurisy; both showed irregularly distributed purple areas scattered over the surface with intervening paler areas, the typical appearances in lobular pneumonia. On palpation numerous solid nodules could be felt. On section the lungs appeared congested with more darkly coloured solid nodules scattered through their substance. The bronchi contained some secretion and their mucous membrane was congested. The bronchi contained some The bronchial glands were enlarged and congested. The peritoneum showed chronic inflammation, evidenced by thickening of the capsule of the liver and spleen. liver and the kidneys showed fairly well-marked cloudy liver and the kidneys snowed rain, non swelling, and the spleen was slightly enlarged, and, on Malnighian bodies. The vessels of the brain were congested and there was some excess of cerebro-spinal fluid. Both middle ears contained pus.

The surface of one of the lungs was seared, an incision was made with a sterile knife, and portions of the fluid exuding from the lung substance were inoculated into broth and blood agar. No growth was observed on the first day, but after 48 hours minute, discrete, translucent colonies were visible on the blood agar. The broth also showed some turbidity. On examination the organism was found to be a very minute bacillus, although at first it had the appearance of a coccus. The organisms occurred singly or in pairs, endto-end. They stained fairly readily with ordinary stains, but dilute fuchsin gave the best results. The Gram reaction was negative. The organism did not grow well on broth or agar, but on blood agar the growth was fairly profuse, the colonies being barely visible to the naked eye after 48 hours and did not become subsequently much larger. They were most numerous at the margins of the blood streaks. It was found that subcultivation every week or ten days was sufficient to keep the cultures alive. In this way the organism was kept growing for five or six months. After some months, however, microscopic examination of the growth showed very remarkable appearances. The bacilli were on an average larger, some were thin, and others thick and club-shaped;

filamentous forms were not infrequently observed. Soon after the organism was isolated a strong emulsion of it was made in normal saline and injected into the ear vein of a rabbit. The animal did not develop any symptoms at all. At first we had little difficulty in concluding that the germ was the influenza bacillus. Later on, when the involution forms appeared, we had som doubt as to its identity, but when we found that such forms have been frequently described in connexion with old cultures of the organism, notably by Grassberger, the fact merely confirmed us in our original conclusion. We are indebted to Dr. C. J. Lewis for assisting us to classify the germ.

Microscopic sections of the lung showed the usual appearances of a capillary bronchitis and broncho-pneumonia, and sections stained with dilute fuchsin showed minute bacilli in small numbers in alveoli and bronchi similar to those cultivated.

Pathologically the chief points of interest in the cases are the epidemic nature of the disease and the occurrence of the influenza bacillus as the only organism present in the lung in one of the cases. From the occurrence of the cases at one and the same time, and from the fact that cultures upon ordinary media failed to show any growth in the other fatal case, one may fairly conclude that the causal germ in all the other cases was the influenza bacillus. The occurrence of this germ in broncho-pneumonia has long been recognised, and the fact that it is not infrequently the only organism present in the lungs is emphasised by Fraenkel.² The main point of interest in the present instance is therefore the occurrence of the influenza bacillus as a cause of a number of cases of broncho-pneumonia arising so obviously in connexion with one another as to warrant the term epidemic.

EIGHT CASES OF EXTERNAL ANTHRAX.

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CASE 1.—A man, aged 23 years, a willower, was admitted to hospital at 5.45 P.M. on April 12th, 1906. On April 9th the patient noticed a sore on the left upper eyelid. On the 10th the eyelid was swollen and he was not able to open the eye; there was no pain. On the 11th the left side of the face began to swell, and on the 12th he saw his medical attendant who advised him to go to the infirmary. admission the temperature was 101.2° F. and the pulse was The left upper eyelid was swollen and covered with vesicles; there was a red inflammatory zone just below the eyebrow. The left side of the face was swollen and brawny as far as the angle of the jaw; there were no enlarged glands, no soreness of the throat, and no history of vomiting or shivering. Owing to the position of the pustule it was decided not to excise it. At 9 P.M. 40 cubic centimetres of Sclavo's serum were injected subcutaneously. On April 13th the temperature was 101.43, the pulse was 104, and the respirations were 22. The left side of the neck was swollen. 40 cubic centimetres of serum were injected subcutaneously, and also, close to the pustule, 10 minims of carbolic acid solution (5 per cent.). The evening temperature was 103.4° and the pulse was 106; the patient vomited four times during the day. On the 14th the temperature was 103.40 and the pulse was 110. I injected 30 cubic centimetres of serum and also 10 minims of carbolic acid solution. There was no improvement in the condition of the patient. On the 15th the temperature was 102°, the pulse was 104, and the respirations were 20. The right side of the face and neck was swollen and the left cheek was covered with vesicles; 10 minims of carbolic acid solution were injected. On the 16th, at 1.30 A.M., the right eye was closed and the cedema now involved the chest as far as the nipples. I made four incisions, two on the forehead and two on the left side of the face. At 10 A.M. the temperature was 100° and the pulse was 108; the œdema of the face was less; 40 cubic centimetres of serum were injected. On the 17th the condition of the patient was much improved; there was eversion of the left upper eyelid owing to cedema of the conjunctiva.

Grassberger: Centralblatt f
 ür Bakteriologie, Band xxiii., 1898, S. 353.
 Fraenkel: Spezielle Pathologie und Therapie der Lungenkrankheiten.

The temperature was 100° and the pulse was 108, on the 18th falling to 99° and 100 respectively. There was also on the 18th considerable diminution in the cedema of the face, neck, and chest. I injected 20 cubic centimetres of serum; the left cornea was clear. On the 19th the local and general condition of the patient was much improved. I incised the swollen conjunctiva; the temperature was 100.4° and the pulse was 100. On the 20th there was a rash all over the body; he complained of pains in the back, thighs, and right elbow. I prescribed aspirin, 10 grains, thrice daily. The temperature was 99° and the pulse was 112; 20 cubic centimetres of serum were injected. On the 21st the temperature was 101.4° and the pulse was 110; there was a large slough on the left upper eyelid. The cedema of the face, neck, and chest was considerably diminished. On the 22nd the temperature was 100.80; the pains were not so severe and the rash was disappearing. On the 23rd the temperature was 99° and the pulse was 80. The patient's condition was much improved and he was evidently out of danger. On May 2nd he was photographed; the slough on the eyelid and the swollen conjunctiva are well shown (Fig. 1). On May 14th the slough was removed; and on June 12th, the ulcer having healed, I

and on the 31st he was shaking wool which had passed through the willow-machine. On the evening of the 31st he felt a "sore place" on the right side of the neck; there was no swelling. On Nov. 1st he went to work at 6.30 A.M.; the right side of the neck was swollen; he had no pain. During the day the right side of the face began to swell, and about 10 P.M. he saw his medical attendant, who sent him to the infirmary. On admission the temperature was 100.4° F., and the pulse was 108; the tongue was clean. On the right side of the neck, about 2 inches below the lobule of the ear, there was a well-developed anthrax pustule. There was cedema of the right side of the face and neck. No enlarged glands could be felt. There was no history of vomiting, sore-throat, or shivering. On Nov. 2nd, at 12.30 A.M., under chloroform, I excised the pustule and injected 40 cubic centimetres of Sclavo's serum. The boy slept well during the night. At 10 A.M. the temperature was 101° and the pulse was 96. The face, neck, and upper part of the chest were very edematous. The patient was drowy. At 6 P.M. the temperature was 102°, and the pulse was 112. He vomited once. At 11 P.M. I injected 40 cubic centimetres of serum. On the 3rd the temperature was 100.6° and the pulse was 110. The boy vomited twice. incised the scar and removed the thickened conjunctiva. The face, neck, and chest were very much swollen; the

FIG. 1.



Case 1.—Slough on the eyelid and swollen conjunctiva before operation.

The lids were brought together with Pagenstecher's thread, right side of the neck and face was hard and brawny and The patient was discharged on July 14th. Fig. 2 (reproduced from a photograph taken in September, 1906) shows the result of the operation.

CASE 2.—A married woman, aged 32 years, a weaver, was admitted at 10.45 A.M. on June 1st, 1906. On May 27th she noticed a "heat lump" over the left eyebrow, on the 29th there was some swelling around the sore, and on the 30th she complained of pain below the left ear, and was unable to open the eye. She consulted her medical attendant on the 31st and was advised to go to the infirmary. On admission the temperature was 100° F. and the pulse was 110. About half an inch above the left eyebrow there was a typical malignant pustule; the forehead, eyelids (left) and left side of the face and neck were cedematous. Two enlarged glands were felt below the left ear. She did not complain of sore-throat; there was no history of vomiting or shivering. Under local anæsthesia (cocaine and adrenalin) I excised the pustule and injected 40 cubic centimetres of Sclavo's serum. The cedema disappeared rapidly and the patient felt quite well in a few days. On June 10th, by undercutting the skin all round the ulcer, I was able to bring the edges almost together. This patient left the hospital on June 13th. I saw her on March 20th, 1909, and the scar was scarcely visible.

CASE 3.—A youth, aged 18 years, a wool-shaker, was admitted at 11.30 P.M. on Nov. 1st, 1906. On Oct. 29th and Case 4.—A girl, aged 14 years, a hanker, came to the 30th this boy was "packing sheets of wool" for the willower, infirmary on March 4th, 1907. On Feb. 27th she noticed "a





Case 1 .- Result after operation.

covered with vesicles. The patient was very restless and had difficulty in swallowing. At 6 P.M. the temperature was 101.20, and the pulse was small and rapid. At midnight I made four incisions and injected 20 cubic centimetres of serum. On the 4th the boy's condition was very bad; the temperature was 97.6°. I was unable to count the pulse. At 7.30 P.M. the temperature was 99 · 8°, the pulse was 130, he had difficulty in swallowing, and the breathing was stertorous; he vomited several times. 20 cubic centimetres of serum were injected. On Nov. 5th the temperature was 100 · 6° and the pulse was 130; there was very little change in the ædema. There was a thick cloud of albumin in the urine. At 6 P.M. the temperature was 101 · 20 and the pulse was 136; the boy was restless and had great difficulty in swallowing; 40 cubic centimetres of serum were injected. On the 6th at 4 A.M. the boy was very restless; the pulse was quick and irregular. I changed the dressing and injected liquor strychninæ (5 minims). At 6 A.M. the nurse came to my room and said that the boy was much worse. When I reached the ward he was dead. No post-mortem examination was made, the coroner being satisfied with the bacteriological report from the Public Health Laboratory, Wakefield. Figs. 3 and 4 are reproduced from photographs taken, one six months before the boy's fatal illness and the other on Nov. 4th at 2 P.M.

sore" on the front of the right forearm. She saw a herbalist on March 1st and was told to apply poultices. On admission there was a well-developed malignant pustule on the front of the right forearm about four inches above the wrist and the forearm was swollen as far as the elbow. The temperature was 100° F. and the pulse was 84. Under an anæsthetic the pustule was excised and 40 cubic centimetres of Sclavo's serum were injected subcutaneously. The local and general condition of the girl improved rapidly, and she was made an out-patient on March 23rd. She was discharged on April 27th. This girl came to the hospital on March 21st, 1909, and on the forearm there was a thin depressed scar about the size of a florin.

CASE 5.—A schoolboy, aged 13 years, was admitted at 11 A.M. on August 23rd, 1908. The following history was obtained. After school hours the boy usually "took the to one of the men employed by a hide and skin merchant, and he generally spent the afternoon helping the men in the warehouse. On August 20th he noticed a "heat spot" on the left side of the face. On the 22nd his face began to swell and he felt cold. On admission the tongue was clean; the temperature was 100.6° F., the pulse was 108, and the respirations were 24. The pustule was on the swollen, and on the front of the forearm, about 3 inches left cheek close to the angle of the jaw; the left side above the wrist, there was a typical anthrax pustule. There of the face and the upper part of the neck were swollen. were several bulke on the forearm; no enlarged glands were

three-quarters of an inch in length and half an inch wide, surrounded by an extensive ring of vesicles. The right side of the face and neck was swollen and the right eve was closed. This was the largest malignant pustule that I have seen. At 3 P.M. 40 cubic centimetres of serum were injected subcutaneously and a boric acid fomentation was applied. The pustule was not excised. There was no reaction after the serum. The local and general condition of the patient improved rapidly and he felt quite well in a few days. He was made an out-patient on Sept. 12th and was discharged on Oct. 3rd. In reply to a post-card he came to the infirmary on March 18th, 1909. The scar, thin and depressed, was scarcely visible.

CASE 7.—A man, aged 44 years, a farmer and butcher, was admitted at 3 P.M. on Oct. 4th, 1908. About ten days before admission he received a scratch on the front of the left forearm. On Sept. 28th one of his cows died suddenly, and he skinned and cut up the carcass the same day. The meat was sold to the "neighbours" and the hide to a fellmonger. On admission the tongue was furred, the temperature was 103.3° F., the pulse was 92, and the respirations were 24. The whole of the left upper extremity was swollen, and on the front of the forearm, about 3 inches

Fig. 3.



Case 3.—Reproduction of photograph taken six months before fatal illness. At 8 P.M., under an anæsthetic, 80 cubic centimetres felt. He complained of headache and "cold shivers": of Sclavo's serum were injected under the skin of the abdomen. The pustule was not excised. At 10 P.M. the temperature was 101.6°. On the 24th the temperature was 99.40 and the pulse was 88; the ædema was much less and the boy's general condition had improved. On the 25th the pulse was 80, the temperature was 97.8°, and the respirations were 18. He complained of slight pains in the back and limbs and there was a rash on the chest and abdomen. The cedema of the face and neck was considerably diminished. The boy was made an out-patient on Sept. 2nd, and he was discharged on Oct. 16th. In reply to a postcard he came to the infirmary on March 18th, 1909; at the angle of the jaw

Case 6.—A man, aged 55 years, was admitted at 1 P.M. on August 29th, 1908. This patient had not worked for several months, but his wife was a "condenser-minder" in a wool mill. The following history was obtained. On August 25th the patient washed a blouse usually worn by On his wife to protect her clothing whilst at work. On the 26th he noticed a pimple on the right side of the face close to the eye, and on the following day his face was swollen. On admission the temperature was 98.6° F. and the pulse was

there was a thick scar about a quarter of an inch long.





Case 7.—Reproduction of photograph taken Nov. 4th, at 2 P.M., shortly before death.

there was no history of vomiting. At 6 P.M. 40 cubic centimetres of Sclavo's serum were injected and the arm was placed in an izal bath. The pustule was not excised. On the 5th the temperature was 103.4°, the pulse was 92, and the respirations were 24. The arm was much worse; there were numerous bullæ on the forearm, and a few on the upper arm. There was no vomiting; the urine was free from albumin and sugar. At 12.30 P.M. 40 cubic centimetres were injected (10 cubic centimetres intravenously). At 5 P.M. I made three incisions along the front of the forearm and one in the back of the hand. The cut tissues were of a greyish colour and gelatinous. The temperature was 104° and the pulse 110 (10 P.M.). On the 6th the temperature was 100.40 and the pulse was 104. The upper arm was incised and 30 cubic centimetres of serum were injected. He was rather better. On the 7th the temperature was 99.8° and the pulse was 88; the patient was better in every way. On the 8th there were signs of delirium tremens; the pulse was 80 and the temperature was 98°. I prescribed bromidia, one drachm every three hours. At 11 PM. a quarter of a grain of morphia was injected. On the 9th at 1.30 A.M. the patient got up and pulled the 82. Over the right zygoma there was a necrotic patch about bandages and dressing off. He became very violent and after a struggle I injected half a grain of morphia into the left leg. He slept for several hours. On the 10th the temperature was 98° and the pulse was 70. The addena of the arm was considerably diminished, but near the pustule a large area of skin showed signs of sloughing. The general condition of the patient was excellent. On removal of the gangrenous patch it was seen that some of the flexor tendons were going to slough. He would not consent to have the ulcer skingrafted and he was made an out-patient on Oct. 31st. There is an ugly puckered scar just above the wrist and considerable impairment in the mobility of the fingers and hand.

As stated before, the carcass was sold to the neighbours at reduced prices, and probably over 100 persons partook of it. The patient and a butcher who assisted in dressing the carcass contracted external anthrax on the forearm, and one woman who handled the raw meat developed a malignant pustule on her face, but no case of intestinal anthrax was recorded. A second cow contracted the disease and was cremated in the orthodox fashion. The most probable source of infection was the dust from a willow machine in a mill being carried by the wind to the field in which the cows were pasturing. The butcher and the woman were treated

by Dr. Leslie Milne, Mirfield, and both recovered.

CASE 8.—A man, aged 52 years, a rag-grinder, was admitted at 9 P.M. on March 13th, 1909. The following history was obtained. He was working on a "blend of merino and wool," and on March 9th he noticed a pimple on the front of the right forearm, a few inches above the wrist. On the 11th the sore was larger and the forearm was swollen; he went to work as usual. He vomited once on the 12th and noticed a "red ring" around the sore; there was some increase in the swelling. On admission the temperature was 100.6° F., and the pulse was 116; about 3 inches above the wrist there was a well developed anthrax pustule; the forearm was swollen as far as the elbow; no enlarged glands were felt. He was perspiring freely. About 9.20 P.M. a swab was taken for bacteriological examination. On the 14th the temperature was 100.8°, and the pulse was 80. There was no change in the local condition. At 4 P.M. Sclavo's serum-40 cubic centimetres-was injected subcutaneously and a fomentation was applied to the forearm. The temperature at 5 P.M. was 101.80 and at 7.30 P.M. a second swab was taken for examination. On the 15th the temperature was 99.20 and the pulse was 82. The general condition of the patient was good; there was no change in the local condition. At 1 P.M. a third swab was taken. On the 16th the temperature and pulse were normal. The swelling of the forearm was much less. At 12.20 P.M. a fourth swab was taken. The patient left the hospital on the 23rd and was made an out-patient. On March 18th I received the following report from the Public Health Laboratory, Wakefield: "Re Specimens VI., Nos. 31, 32, 35, and 36. The culture obtained from Specimen VI., No. 31, received from you on Sunday, the 14th March, was inoculated into a guinea-pig and caused death 24 hours later, anthrax bacilli being recovered from the blood. I failed to find any anthrax bacilli in the specimens received 15th March (32), 15th March (35), 17th March (36)."

Remarks.—Before Sclavo published the results of his trials of serum-therapy, the treatment usually recommended in cases of external anthrax was excision of the necrotic patch and of the infiltrated tissues around, followed by the application of pure carbolic acid or the actual cautery. Since 1899 several cases have been treated successfully in Italy with serum alone, and during the last few years this method of treatment has been carried out in England, combined with excision or alone. Since 1905 nine cases of cutaneous anthrax were treated in the General Infirmary, Dewsbury: in four cases the pustule was excised and serum was injected, one case was treated with serum and three injections of carbolic acid solution, and four cases with serum alone. During the same period three cases were treated by private practitioners in Dewsbury: in two cases the pustule was excised and serum was injected; one case was treated with serum alone. Of the 12 cases one was fatal—8.3 per cent.

Case 1 was a virulent type of the disease; the patient received 190 cubic centimetres of serum in eight days, and his recovery must be attributed to it. In Case 3 the boy walked into the ward and undressed without assistance. After excision of the pustule cedema increased so rapidly that I regret not having treated the case with serum alone. Dr. Legge¹ states that "examination of the notes on 64 cases treated in St. Bartholomew's Hospital and Guy's Hospital shows that in 10 ordema increased after excision, and in a small number of the deaths in London hospitals generalisation of the disease followed so quickly after excision as to raise suspicion that they were connected." Case 7 was a very malignant type of the disease and the patient owes his recovery to Sclavo's serum, of which 110 cubic centimetres were administered in two days.

I am indebted to the visiting staff of the infirmary for permission to publish these cases.

Dewsbury.

LOCAL SEPSIS AS A FACTOR IN RHEU-MATISM AND GOUT.

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THE microbic hypothesis of the origin of gout, rheumatism, and rheumatoid arthritis appears to be generally accepted in the recent literature of the subject. The distinction between the various forms of these diseases tends to disappear as it becomes more recognised that the many intermediate types shade off so gradually into each other that no sharp dividing line can be drawn between them. Radiography lends its support to this view. The plates of the various types are hardly to be differentiated without knowing the previous history. Elsewhere our views as to the probable foci of infection have been explained, but a brief recapitulation may be useful. Our attention was called to the possibilities of an original septic cause for the above maladies some time ago, and since then we have made it a routine practice to examine every such case thoroughly for any possible local sepsis. In every case such a condition has been found. In the majority of adult cases pyorrhœa alveolaris is the most common initial lesion, tonsillar sepsis to a lesser degree, but still not infrequent. Nasal disease has also been found, but is very rare in comparison with the previous two in adults; but in children adenoids and septic tonsils are the prevailing septic foci. Not one single case of rheumatism or gout has been found without some accompanying local sepsis. Of course, this has long been realised in an inverted way, for "rheumatic tonsillitis" and "gouty gums" are among the most ancient of medical terms.

As stated above, there are various situations where the sepsis may originate. Most of them are well recognised and no description is needed either of their appearance or potentialities -most, but curiously enough not the one to which we believe the majority of cases occurring in adult life can be traced, i.e., pyorrhœa alveolaris. This paper will therefore deal principally with this form of septic infection. We wish it to be clearly understood, however, that it is not supposed to be either the sole source of infection in every case of these affections nor to give rise only to these particular diseases. On the contrary, it is allowed nowadays to be of the utmost importance in the anæmias and in many This, however, is well derangements of the digestive tract. recognised, while we venture to think that its rôle in the

diseases here discussed has been overlooked.

The types and signs, therefore, of this particular infection may be briefly described. The term "pyorrhœa" has been used for the sake of brevity and convenience to indicate any form of oral sepsis. Strictly speaking, it should connote the presence of pus. Actual pus, however, is by no means invariably present. Pyorrhœa, then, used in a general sense, in this paper may indicate any of the following types. 1. The superficial inflammation around the teeth in ill-kept mouths, which, once restored to a healthy condition, can be kept in order by the patient's own efforts. 2. Pockets

¹ The Milroy Lectures on Industrial Anthrax, March 7th, 9th, and 14th, 1905, by T. M. Legge, M.D. Oxon., D.P.H. Cantab. See THE LANCET, March 25th, 1905, p. 765.

2 Clinical Journal, February, 1909.

between the gum and tooth and osteitis of the bony sockets found on examination in apparently well-kept mouths. A characteristic odour can nearly always be detected in these cases. The patients themselves frequently complain of some alteration in, or loss of, taste, and of tenderness or aching of varying intensity due to exposure of dentine. 3. The genuine pyorrhæa, acute or chronic, where true pus can be squeezed from around the necks of infected teeth. 4. Dry osteitis, with absorption and recession of gums, which very frequently merges into 3. 5. Any combination of the

The formation of pockets of pus, leading to recession of gums, is invariably secondary to pyorrhea and is due to the absorption of the supporting bone by chronic infective osteitis. Spongy and bleeding gums, and pus which can be expressed from the sockets, are all typical symptoms of this condition. Frequently the patient does not complain of toothache and many of the cases have quite good teeth. Caries is very often entirely absent. The exciting cause of pyorrhea is not clear; possibly it is sometimes due to the tooth-brush as generally used. This is never surgically clean, and the stiff bristles must often lead to wounds of the gum around the tooth. Few people realise that no brush will clean the interstices of the teeth where food lodges and decomposes. Floss silk is the only means of removing this debris.

If we grant, then, that chronic sepsis may be a determining factor in the onset of a rheumatic or gouty attack, there are two questions which arise: 1. Is a chronic sepsis always present in these cases? 2. May a chronic sepsis exist without rheumatism or gout? To the first the answer, in our experience, so far is Yes. To the second, Yes, also. Until the bacteriology of the mouth is better known we cannot tell whether this may be due to a variation in the organisms or to soil resistance. have an analogy in the case of diphtheria, where the Klebs-·Löffler bacilli may exist in the air passages without giving rise to any symptoms. The next question is whether the attack consequent upon oral disease is due to absorption viâ the intestines or to local extension $vi\hat{a}$ the gum and bone. It appears to be possible in both ways. A very frequent result of the first cleaning of a septic mouth is an attack of rheumatism. It is not an invariable result, but seems to depend a good deal upon the amount of injury to the soft tissues in the cleaning manipulations. tend to disappear after the first few treatments. observers have noticed the correlation between diseases and pyorrhœa but have not found it in every This may be due to the fact that it is quite unusual to find members of the dental profession who recognise the condition at all. Therefore it may be missed in a case where, to those who know how to look for it, there is abundant evidence of its presence. Again, it may be that the septic focus does not exist in the gums but in the nasal cavities or the naso-pharynx. In women, as Dr. W. P. Herringham has recently reminded us, the sepsis may be found in a chronic uterine or vaginal discharge. His paper is most suggestive, and this possibility should never be overlooked in a female patient.

In the treatment of these diseases it is obvious that our attention should first be directed to the septic trouble. Once this has been discovered, if early enough, or before general symptoms have developed, we may hope to benefit the case immensely. If, on the other hand, it is only noticed after years of illness, though it may, and should, be removed, yet we cannot hope as a general rule to do more than arrest the progress of the disease and alleviate pain. For, consider, if we grant that an inflamed joint is due to the fact of an organism settling there, there are two possibilities in the future history. One is that the germ, after setting up inflammation, dies, and no further trouble occurs unless a fresh invasion takes place. The other possibility is that the acute inflammation caused at the first onset dies down because of the attenuation of the virus or from other causes, but the microbe, having effected a lodgment, bides its time and multiplies locally, causing chronic irritation. In the first case we may evidently do good by checking the chance of fresh invasions; in the second only general treatment or surgical interference can be of any avail. Vaccines, except in cases where an unmixed infection is present, do not appear to be of much value. The answer, therefore, to those who hastily

deny the possibility of this hypothesis and line of treatment is that there are the above modes in which the diseases may differ, and, once the second has taken place, cure, though possible, is only remotely probable, while in the first it is both possible and probable.

One great, possibly the greatest, difficulty is the length of treatment the gums require. Patients cannot realise that it is often practically impossible to cure the condition without removing teeth in order to isolate and render accessible for cleansing purposes those remaining. A so-called "cure" takes place by the dropping out of the teeth; but frequently the bone remains in a more or less diseased and inflamed state even when the mouth is edentulous. There can be no question that it is important, if only for the sake of the digestion and general health, to improve this local condition as far as possible, even though it may be too late to cure the gouty or rheumatic symptoms.

Let us now examine the various types of the rheumatic and gouty groups with the septic conditions found (see table).

These cases are not "selected" in any sense of the word. The trouble in some is of recent origin, in others of old standing. Nearly all, after thorough local treatment, have found themselves better in health than they have been for years. The treatment of some of these cases throughout has been entirely confined to the local cause of infection without general treatment. In others, general treatment has been concurrent with the local treatment. The local treatment adopted has been very careful cleansing of all teeth, gums, and pockets, avoiding as much as possible injury to the soft tissues. In cases where efficient drainage of pockets could not be obtained, extraction has been done, as it is much better to leave a tooth isolated, especially if it has a good opposing tooth for mastication, than to have a number of teeth on either side with foul septic pockets. In the very septic cases, when there was no hope of the teeth becoming firm under treatment, extensive extraction has been carried out.

In all cases of extraction, before operating, all the teeth and pockets have been, as far as possible, very carefully cleansed. This is a most important point, as very serious infection of bone and general septicæmia may follow extraction of septic teeth. In every case citric acid (3 drachms to the pint) dissolved in a warm solution of carbolic acid (1 in 40) is used as an antiseptic and astringent for the cleansing of the pockets. All the tartar is removed and the teeth and gums are swabbed round with the warm solution. Wisps of cotton wool soaked in the solution are carefully passed into any septic cavity by means of a sterile platinum probe. The process is very tedious, as it takes about an hour to clean a mouth thoroughly. About six visits are usually required for obtaining a good result. General and local improvement is generally marked after the first two or three visits. It is of interest to note that on the following day, subsequent to the local treatment, the symptoms are frequently worse, due to slight unavoidable injuries to the local tissue and consequent increase of local infection.

Having cleansed the mouth satisfactorily, and so removed the septic infection, it must be borne in mind that, except in cases of complete extraction or isolation of teeth, there must always remain pockets and sites for the accumulation of septic matter and subsequent re-infection. It is futile trying to make oneself believe that the pockets are cured, particularly in the great spaces between molars, consequently the patient must learn to clean the gums and the spaces between the teeth besides using the toothbrush; in other words, must begin for the first time to try to obtain a clean and healthy mouth. If in childhood it could be taught that it is absolutely essential, besides cleaning the enamel of the teeth, to clean the gums and spaces between teeth at night, the prevalence of septic and unhealthy mouths among cleanly and educated people would be avoided.

It is not suggested that local treatment is the only desideratum in every case of rheumatism or gout. In acute gout colchicum, and in rheumatism salicylates, must also be exhibited, while for the local conditions much may be done by means of radiant heat and electricity. These, however, are all directed to the relief of symptoms and do not strike at the root of the matter. Let us now go into a more detailed examination of a few selected cases.

Some Cases, with Details of Treatment.

CASE 1.—The patient, a man, aged 45 years, was seen on June 24th, 1909. He complained of general debility, rheumatism, and excessive tenderness of the feet whilst and after walking; in fact, he was unable to walk more than 400 yards without a stick. As regards local sepsis, there was pyorrhea, with large pockets between the molars. Five or six of the back teeth had been lost. His mouth was treated, as explained above, six times in three weeks, an hour at a time being given to the process. The condition was then distinctly better, but he still complained of pain on walking. On July 19th the lower right wisdom tooth was removed. Very large pockets existed between

it and the 12-year old molar. Marked improvement followed, and in a week he was able to walk a couple of miles without any pain. Another tooth had to be removed, but on Oct. 12th, in all a period of about three and a half months, he reported that he was practically well, felt better than for years past, and could walk five or six miles with ease. No other treatment of any kind except cleansing of the mouth was employed.

CASE 2.—The patient, a man, aged 35 years, complained of lumbago, rheumatism in the arms and legs, and general debility. He also showed signs of neurasthenia with vertigo and dizziness. Eustachian catarrh was present. As to local sepsis, there was pyorrhœa; the lower left molars were loose and badly infected. After careful cleaning with carbolic they

Gout.

No. of case.	Age in years.	and the	Septic focus.			
1	50	Acute attack in right tarso-metatarsal joint, great toe. Has had many attacks. This one followed three days after the commencement of a carbuncle on the neck.	Well-marked pyorrhæa.			
2	33	Has had three attacks in past two years : two in right great toe, one in extensor brevis of right foot.	Pyorrhæa.			
3	71	Repeated attacks, especially in great toe joints, for last 20 years. Has also had eczema.	,,			
4	48	Repeated attacks. Last in right great toe.	Supra-tonsillar recess full of pus. Tonsils also septic.			
5 .	29	Several attacks. Very susceptible to lead-poisoning,	Bad pyorrhæa			
6	56	Repeated attacks. Also rheumatic.	Pyorrhoa. Some artificial teeth Plates very foul.			
		Acute Rheumatism.				
7	20	Rheumatic fever 9 years ago.	Bad pyorrhœa.			
8	49	Rheumatic fever 8 months ago. Double mitral disease.	Very bad pyorrhœa.			
9	65	Rheumatic fever 3 times in 25 years. Another attack recently.				
10	5	Repeated attacks of subscute rheumatism, temperature running up to 105:5° F., pains in knees and ellows. Systolic bruit at apex.	Hypertrophied tonsils and adenoid			
11	3 0	Acute rheumatism.	Pyorrheea.			
		Rheumatoid Arthritis.				
12	62	Synovitis in right knee some years ago. Now has fluid in left knee; some crackling on movement.	Bad pyorrhæa.			
13	55	Knee painful and creaks on movement.	Marked pyorrhoa.			
14	53	Has had gouty symptoms in fingers. Slight eczema. Right shoulder and arm have been painful for one year.	Very marked pyorrhæa.			
15	50	Fall on right shoulder five weeks ago. Muscles wasted, much creaking.	Pyorrhæa.			
16	62	Rheumatoid arthritis of right shoulder.	***			
17	60	Sciatica. Rheumatoid arthritis of right hip.	Very bad pyorrhœa.			
18 .	44	Pain in right shoulder since a fall. Rheumatoid arthritis.	Pyorrhœa.			
19	2 6	Right shoulder painful and creaks.	Bad pyorrhæa.			
20	42	Rheumatoid arthritis in several joints for some years.	Pyorrhea.			
21	26	Rheumatoid arthritis, specially in fingers and elbows. Much deformity.	Acute tonsillitis 18 months ago.			
22	65	Neuritis in right arm, knees stiff and painful, crackling on movement.	Marked pyorrhæa.			
23	37	Always having rheumatic pains. Left knee painful, crackling on movement.				
24	61	Lumbago. Sciatica. Joints creak on movement.	"			
		Various Allied Disorders.				
25 :	113	Rheumatism in ankle. Occasionally complains of "rheumatics" in calves.	Tonsils septic.			
26	25	Stiffness of right side of neck.	Hypertrophic rhinitis.			
27	38	Sciatica and lumbago.	Pyorrhea.			
28	48	Rheumatism and sciatica. Neuritis in right arm.	Very bad pyorrhæa.			
29	34	Rheumatism in right shoulder.	Pyorrhæs.			
30	58	Neuritis. Rheumatism in arms and knees.	"			
31	50	Lumbago and neuritis.	11			
32	44	Rheumatism.	Bad pyorrhœa.			
33	32	Neuritis and sciatica. Acute lumbago.	Pyorrhoa.			
34	33	Sciatica, repeated attacks.	Enlarged and septic tonsils.			
35	46	Lumbago, sciatica, and neuritis.	Pyorrhea.			
3 6	50	Rheumatism for many years. Sciatica.	Bad pyorrhoa.			
37	56	Rheumatic pains in fingers and joints.	Pyorrhea.			
38	29	One attack of (?) gout at 13. Occasional muscular rheumatism. Tonsillitis 14 days ago.	"			
39	57	Pains in arm and shoulder of right side for three months. Several quinsies.	Very bad pyorrheea.			
40	36	Rheumatism in wrist two years ago. Temperature 100°2° F. Laid up for a fortnight.	Bad pyorrhoa.			
41	32	Rheumatism and lumbago.	,,			
42	45	Has always been rheumatic. Sciatica of the right leg.	••			

were removed. Subsequently the remaining teeth, with the exception of the lower canines, which were fairly firm and could be kept clean, were extracted also. No other treatment was adopted. As a result, all the symptoms originally complained of disappeared. A temporary denture was given in the last week in August, with which he was able to eat well. In October he had gained a stone in weight.

Case 3.—The patient, a married woman, aged 60 years, had very bad attacks of muscular rheumatism and lumbago, with great difficulty in walking. She suffered from anæmia and there was general weakness. She was very susceptible to influenza, which usually lasted about three weeks. As to local sepsis, there was very bad pyorrhæa, only 15 teeth remaining. Six visits were made for cleansing, during which time the general health improved. All the teeth were removed in February except the lower canines. As a result there had been no rheumatism since, while there was a gain of one stone in weight.

Case 4.—The patient, a man aged 40 years, had rheumatism in the right shoulder and was unable to play golf in consequence. He had had electrical treatment for a year. As to local sepsis, there was bad pyorrhea, although the mouth was carefully kept. It was non-purulent in type, but with many pockets between the molars. Four visits were made of 14 hours each. The last visit was in June. In October the patient wrote to say that he has had absolutely

no pain since the last treatment.

These cases are quoted to show that in certain cases cure is possible. We do not wish to suggest for a moment that the same result will occur in all, but the larger number of our cases have shown such definite improvement that we feel sure that early recognition of the source of infection is the main factor in the achievement of success. By more careful attention to the points that we have mentioned, either as a routine of life or on the first symptom of an attack, we feel sure that the number of cases of these illnesses could be limited to an extraordinary extent. It is much to be hoped that the younger generation of dental surgeons will realise that their art is not purely a mechanical one, but that they can do much towards preserving their patients from the so-called gouty and rheumatic diatheses. At present we have not succeeded in establishing a connexion between the types of pyorrhœa and the nature of the accompanying disease.

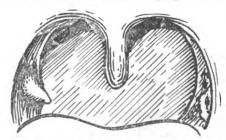
Clinical Rotes :

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

ABNORMALITY OF THE RIGHT TONSIL.

By Norman Patterson, M.B., Ch.B. Edin., F.R.C.S. Eng., assistant surgeon at the hospital for diseases of the throat, nose, and ear, golden-square, etc.

THE patient, a woman aged 45 years, came to the hospital complaining of a peculiar appearance which she had accidentally noticed in the throat. She had never had any discomfort. She had been subject to epileptic fits, but never



remembered having had any pain or hæmorrhage from the throat after recovering consciousness. On examination a pointed process was seen projecting downwards and inwards from the right tonsil, as is shown in the accompanying illustration. When palpated it was felt to be a bony projection tipped with cartilage. It could be traced

upwards towards the point at which the styloid process takes origin from the skull. On the left side, although no projection could be seen, what was evidently an elongated styloid process could be felt on pressing the tonsil outwards. The illustration shows both styloid processes to be abnormally long. It is difficult to say whether the condition is congenital or due to a fracture of the right styloid process having occurred during an epileptic seizure.

Queen Anne-street, W.

EYELASH AS A FOREIGN BODY IN THE ANTERIOR CHAMBER.

BY J. B. PIKE, M.R.C.S. Eng., L.R.C.P. EDIN., HONORARY SURGEON TO THE LOUGHBOROUGH GENERAL HOSPITAL.

A BOY, aged 13 years, attended as an out-patient at the Loughborough Hospital on May 6th, 1907. A small healed wound was found at the outer edge of the cornea of the right eye. There had been slight reaction, but this was subsiding, the injury being a fortnight old. A dark line was seen lying obliquely across the pupil and inner part of the The ophthalmoscope showed this to be a foreign body. The boy stated that the injury was caused by a branch of a hedge swinging back and striking the outer part of his eye. I thought some small thorn spicule might have penetrated. On the following day with general anæsthesia I made a small incision at the inner sclero-corneal junction with a Graefe knife, and by means of an iris hook and forceps removed the foreign body. At the same time a small iridectomy was done. The foreign body under a low microscope power proved to be an eyelash. Two years after this the vision is found to equal 6/6, with or without a small correction for hypermetropia and astigmatism.

Loughborough.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION.

Exhibition of Specimens.—Rupture of the Uterus.— Leukoplakic Vulvitis.

A MEETING of this section was held on Nov. 11th, Dr. H. MACNAUGHTON-JONES, the President, being in the chair.

Dr. A. E. GILES showed: (1) A specimen of Ovarian Adeno-Carcinoma weighing 18 pounds, removed from a widow aged 60 years; and (2) a case of Kraurosis of the Vulva of an advanced type, in which a small nodule of carcinomatous growth was just beginning.

Dr. T. G. Stevens showed a specimen of Adeno-Myoma of the Vaginal Wall, consisting of two tumours, one situated on the anterior and the other on the posterior vaginal wall. Both contained cystic spaces lined by columnar epithelium, and he thought from their position and structure that they must be derived from displaced Wolffian tubules. He also showed a specimen of Fibromyoma and Pregnancy with extensive thrombosis of all the veins of the capsule and

necrobiosis of many areas of the tumour.

Mr. H. J. Paterson read a short communication on a case of Rupture of the Uterus treated by suture of the rent per vaginam and drainage. The patient, a iii.-para, after premature rupture of the membranes was found to have a prolapsed pulseless cord. Delivery was effected by traction on the foot without difficulty, but on introducing the hand into the vagina after delivery it passed into the abdominal cavity. On admission to the Temperance Hospital the patient was profoundly collapsed. The vagina was full of blood clot, and a coil of intestine was felt protruding through a large rent in the vaginal vault, through which the fist could be easily passed into the peritoneal cavity. The left parametrium was involved in the tear, and there was free bleeding from two large vessels. These were secured by ligature. Further examination showed that the cervix and lower uterine segment were torn through for four inches, but as the uterus appeared firmly retracted no attempt was made to define accurately the upper limit of the tear. The torn edges of the cervix and

lower part of the uterus were approximated by three catgut sutures. A large rubber drainage-tube was passed into Douglas's pouch and the torn edges of the peritoneum and the vaginal wall were drawn together round it by a purse-string suture. The patient was much collapsed at the end of the operation, but continuous saline proctolysis was maintained for 60 hours, and she ultimately made a good recovery. Mr. Paterson said, as far as he knew, this method of vaginal suture and drainage had not been adopted in any of the recorded cases of rupture of the uterus. He thought that some writers laid too much stress on the difficulty of controlling hæmorrhage and nature's ability to deal with internal hæmorrhage. Suture when possible was to be preferred to hysterectomy, and the cases recorded seemed to show that some of them had recovered in spite of hysterectomy rather than on account of it.

Dr. COMYNS BERKELEY and Dr. VICTOR BONNEY read a paper on Leukoplakic Vulvitis and its Relation to Kraurosis Vulvæ and Carcinoma Vulvæ. The authors pointed out that leukoplakia and kraurosis were two distinct diseases, which could be identified quite easily both from clinical observation and a pathological examination of the tissues affected. The authors based their paper on the series of 24 cases which they had operated upon and 75 which had occurred in the practice of their colleagues at the Middlesex Hospital and Chelsea Hospital for Women. The authors pointed out that leukoplakia can be differentiated clinically from kraurosis: 1. By its appearance, which is quite different from that of 2. By its distribution, in that it never affects kraprosis. the vestibule, orifice of the urethra, or vagina, whereas in kraurosis these areas are always affected; and whilst in the latter disease the outer surface of the labia majora and the skin of the thighs and the perineum in their neighbourhood are never affected, in the former disease it is often involved. 3. By the symptoms, for whereas the striking and often the only symptom of leukoplakia is pruritus, this symptom is absent in kraurosis, whilst dysuria and dyspareunia are most marked. 4. By its relation to carcinoma. Leukoplakia is often followed by carcinoma of the vulva, and in every case of this disease which the authors had seen leukoplakia had been present, whilst kraurosis had no relation to carcinoma. 5. By its histological findings. It will be seen that in leukoplakic vulvitis there occurs a diffuse thickening of the epithelial elements with a marked tendency to downgrowth, as exhibited by long interpapillar processes. The underlying connective tissue is at first the seat of a lymphocytal aggregation, which leads on to a diffuse fibrosis with a total disappearance of yellow elastic fibres in the zone immediately underlying the epithelium. In kraurosis the epithelium is abnormally thin, especially over the red patches seen in that disease. Polymorphonuclear leucocytes and massive aggregations of plasma cells are seen, whilst lymphocytes are comparatively sparsely represented. The connective tissue becomes the seat of an atrophic shrinkage, but except at the points of massive plasma cell proliferation, no disappearance of the yellow elastic tissue occurs. The authors lastly discussed the relationship of leukoplakia to carcinoma, including multiple carcinoma of the vulva, recurrences of the growth, and glandular metastases. With regard to treatment, the authors were strongly of the opinion that all the cases of leukoplakic vulvitis should be treated by excision, because this disease in their experience had been so commonly followed by carcinoma. The paper was illustrated by a series of micro-photographs demonstrated by the epidiascope. Dr. GILES said that there was no evidence in any case of kraurosis which had come under his notice of a history of either syphilis or tubercle, but he regarded the condition as an atrophic one incidental to the general atrophy affecting the pelvic organs at the menopause. Dr. AMAND ROUTH agreed that the authors had brought forward very strong arguments in favour of their contention that leukoplakia and kraurosis vulvæ were essentially distinct conditions, capable of easy clinical differentiation. If their contention were correct all modern text-books were wrong, for without exception they described the two conditions under one name-kraurosis vulvæ. According to the authors, in leukoplakia, pruritus was the main, often the only, symptom, neither the vestibule nor the urethral orifice was ever attacked, but the disease tended to spread over the inner thighs, perineum and anus, and there was no tendency to contraction of the vaginal orifice.

Epithelioma of the vulva very often followed this condition. In kraurosis vulvæ, on the other hand, there was no pruritus. and dyspareunia was the main symptom. The vestibule and urethral orifice were always attacked, the thighs, perineum. and anal region never. The vaginal orifice always became contracted, and carcinoma never developed on the vulva in kraurosis. He described a case, however, to prove that if leukoplakia and kraurosis were not two stages of the same disease, they sometimes co-existed. As regards treatment. he had found that the continued application of equal parts of unguentum hydrargyri and unguentum zinci or unguentum plumbi acetatis almost always relieved the pruritus and made the tissues softer and pinker, but the condition was apt to recur. He had not seen any case with a definite history of syphilis. -Dr. T. W. EDEN said that there was nothing inherently improbable in the idea that leukoplakia was a condition antecedent to epithelioma, for this sequence had been recognised for long in the tongue. He could hardly follow the authors in their recommendation to excise all patches of leukoplakia, since this condition was not at all uncommon, while the malignant transformation described in the paper was comparatively rare.-The PRE-SIDENT said that the last edition of his text-book was open to the criticism of Dr. Routh, for although the views of many authorities were epitomised, there was no mention of leukoplakia. The two conditions were dealt with under the one term, kraurosis. His experience led him to regard discharge—both uterine and vaginal, and senility, as important factors in the etiology. No patient he had treated had he known to suffer from carcinoma subsequently. He believed in free excision of the "washleather" areas, though not to the exclusion of other therapeutic measures such as the application of pure carbolic acid and the use of a 5 per cent. solution of nitrate of silver. He also recommended adrenalin, the use of lanolated ichthyol ointment, and yellow oxide of mercury, with emollient baths, followed by the application of the nitrate of silver. He quoted two cases cured by excision and transplantation of sound skin, combined with the use of the remedies mentioned. He believed that while nothing save excision would suffice in certain cases, yet in others cure could be effected without resource to this severe measure.—Dr. BERKELEY, in reply, said that the discussion of the paper had mainly had reference to two points—namely, the ease or otherwise of the diagnosis of these two conditions and the question of the treatment of leukoplakie vulvitis by excision. In reality the two diseases were easy to diagnose, and it was their marked difference which had drawn his and Dr. Bonney's attention to this subject. With regard to treatment, they were convinced that the proper treatment was to excise the diseased areas. He had had the unusual experience of operating upon 18 cases of carcinoma of the vulva all associated with leukoplakia, and at least three of these had been subjected to prolonged treatment for the leukoplakia. He saw no reason why leukoplakia and kraurosis should not occur in the same

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Exhibition of Cases and Specimens .- Strangulation of the Small Intestine.

A MEETING of this section was held on Nov. 26th, Dr. J. PORTER PARKINSON being in the chair.

Dr. A. E. GARROD showed a case of Multiple Peripheral Neuritis in a girl, aged 8 years, who was quite healthy until March, 1909, when she passed involuntarily a stool containing several ounces of blood. This was preceded by an attack of abdominal pain. A similar attack occurred in May, and several others later. When admitted to hospital on Sept. 16th she was a well-nourished child; good mental condition; marked loss of power in both upper limbs from deltoid downwards, and double wrist drop; muscles of lower limbs weak; no tremor; sensation unimpaired; other systems normal. Electrical reaction showed muscles of all extremities with reaction of degeneration (except flexors and special muscles of thumb and little finger). Blood examination: red corpuscles, 4,984,000; hæmoglobin, 94 per cent.; white cells, 10,500. No cause for the condition was discoverable. -Dr. G. A. SUTHERLAND regarded the case as one of special interest, and thought a certain positive diagnosis was not possible.—Dr. E. I. SPRIGGS referred to two similar cases shown at the last meeting.

Dr. ROBERT HUTCHISON showed two cases, one a Female Child, aged 9 years, with Cirrhosis of the Liver. There had been swelling of the abdomen for one year; no previous illness of importance. Two still-births preceded this child. There were snuttles as a baby. The liver was enlarged and irregular, and the spleen considerably enlarged. There was some ascites; the child had a cirrhotic facies. Dr. Hutchison took the view that the condition was due to syphilis and stated that a positive Wassermann reaction had been obtained. The other case was one of Unidactyly in a male, aged 13 weeks. The small digit only was present on both hands and both feet. The child was otherwise normal. The child's father, two uncles, and an aunt were similarly affected, as also the grandfather and his brother. A daughter of the father's sister also exhibited the condition.—Dr. PARKINSON, Dr. C. W. CHAPMAN, Dr. SUTHERLAND, and Dr. GARROD discussed the cases.

Mr. O. L. Addison showed a case of Congenital Enlargement of One Limb occurring in Brother and Sister, aged 9 and 5 years respectively. The boy's arm, shoulder, and hand were enlarged, and there was one inch increase in length. In the girl the enlargement was in the left leg, which was an inch and three-quarters increase in length. The calf was relatively larger than the thigh, and was hotter than the rest of the limb.—The cases were discussed by Dr. F. PARKES WEBER, Mr. J. P. L. MUMMERY, and Dr. GARROD.

Dr. R. C. JEWESBURY exhibited a specimen of an Infantile Heart showing Nodules on the Endocardium. The specimen was from a child, aged 4 months, who died from bronchopneumonia. No cardiac lesion was detected during life. Post mortem, a large number of wart-like nodules were found, especially on the mitral and aortic valves, a few also on the other valves and on the septum of the foramen ovale. Microscopical sections through the nodules showed a connective tissue substratum supporting a layer of epithelium. There were no signs of recent or previous inflammation. There was nothing to suggest that the nodules were "vegetations,"and it was stated that the condition occurred normally in the infant heart.—Dr. SPRIGGS regarded the nodules as hypertrophy of the little nodules usually seen in infants' hearts.

Dr. H. D. ROLLESTON (for Dr. CARPENTER) exhibited a specimen of Compression of the Trachea by the Enlarged Thymus. The specimen was removed from a child, 10 months old. who died after an illness of less than 24 hours, which began with quick breathing and sickness. The temperature reached 103°F. and the respiration rate 80. During life there were recession of the intercostal spaces and embarrassed breath-The specimen showed a large thymus pressing on the trachea, which was much narrowed from before backwards. The lungs showed evidence of death from asphyxia. The liver and spleen showed some fatty change but the other organs were normal. The case was shown as positive evidence that an enlarged thymus may cause death. He also showed a Microscopical Section from the Liver of a case of Icterus in an infant. The specimen showed a normal condition of the liver.

Mr. MUMMERY read a paper on a case of Strangulation of the Small Intestine by a Band in a child, aged 15 months. The child had acute obstruction, which developed suddenly, and was operated upon within nine hours of the onset of symptoms. A tumour, which was thought to be an intussusception, was distinctly felt in the right side of the abdomen. The child had been operated upon for intussusception when five months old. On opening the abdomen a loop of small bowel was found acutely strangulated by a narrow band. The band was divided and the abdomen closed. The child made an uninterrupted

HARVEIAN SOCIETY OF LONDON.

Discussion on Angina Pectoris.

A MEETING of this society was held on Nov. 25th, Dr. C. BUTTAR, the President, being in the chair.

Dr. ALEXANDER MORISON read a paper on the Nature and Treatment of Angina Pectoris. He remarked that if the term were used comprehensively as applying to all forms of cardiac pain the condition was not rare, but if limited to classical cases, usually without valvular disease, he could had never seen a case. Dr. Morison, however, would treat pathology of angina pectoris was properly understood.

the condition more comprehensively, and defined angina pectoris as a painful affection of the heart as a whole, dependent upon disorganisation in the anatomical character or disorder in the physiological function of one or more of the factors in cardiac action, and associated in some cases with a fear of impending death. He gave a short abstract of 10 cases as supplying the data upon which he rested his conclusions regarding the nature of the affection, instancing cases both of dextral and sinistral radiation of the pain. The conclusion he arrived at was that the character and situation of the conditions which originate angina vary, and that the heart, if like other viscera, endowed with low sensibility to handling and other modes of external irritation under normal circumstances, may, in the presence of lesion of its internal surfaces or severe stimulation of its nervous endowment by compression or otherwise, reveal evidences of sensibility as well marked as do other viscera in their interior under circumstances which may be regarded as analogous. He argued that even the commencement of referred pain in a peripheral portion, such as the arm, in no way invalidated the belief that intra-aortio or intracardial nerves were not also the seat and site of referred pain. In speaking of treatment, he divided his remarks into a consideration of the treatment (1) of the attacks, and (2) of the conditions which provoked the attacks, and pointed out that the majority of cases of so-called vaso-motor angina with valvular disease tended to subside without accident so far as the attack was concerned. This was not so with non-valvular cases, which might rapidly terminate fatally, and required, not merely the use of nitrites, but also of morphia, atropine, and general anæsthesia for relief and to avert death. At the close of his remarks Dr. Morison showed a patient upon whom thoracostomy had been performed with benefit for cardiac pain. An account of this case has already appeared in THE LANCET of July 4th, 1908, and Nov. 20th, 1909.

Sir CLIFFORD ALLBUTT said that to properly understand the nature of angina pectoris it was necessary to consider cases that were not complicated. He considered that the cause of uncomplicated cases of angina pectoris was disease of the aorta above the valves, and he thought that the distribution of the radiating pain depended largely on the part of the aorta affected. He thought that there was a pain arising from the heart itself, and situated in the præcordial area, which was quite distinct in character from the pain of a typical anginal attack. He insisted on the importance of early specific treatment in cases of angina pectoris.

Sir R. Douglas Powell considered that cases of typical angina pectoris were due to atheroma and thrombosis of the coronary arteries. He would not class as "angina' mere aortic pain following exertion. He considered rise of arterial blood pressure an important factor in the causation of angina pectoris, and gave instances of cases in which the development of mitral regurgitation had caused relief from anginal attacks.

Sir LAUDER BRUNTON thought that the pain of angina pectoris was partly due to contraction and he compared the pain to the contraction of a distended bladder. He considered that there was a sensory nerve-supply to the heart, and cited the results of experiments on animals in support of this. He thought that the pain of angina pectoris was due in some cases to increase of arterial blood pressure; in other cases spasm of the coronary arteries was an important factor. He laid stress on the importance of careful regulation of exercise in angina pectoris and also on the advisability of rest after a meal.

Dr. JAMES MACKENZIE thought that the symptoms of angina pectoris should be carefully understood and that the distribution of the pain should be carefully investigated. He thought that irregularities of the heart were important, and also that great exhaustion of the heart muscle was usually present in anginal attacks.

Dr. D. B. LEES said that many of the attacks of so-called angina pectoris were not really typical. He thought that a very important confirmatory physical sign was a dilated aorta, and emphasised the importance of a careful examination by percussion. He considered that excessive indulgence in tobacco-smoking was a very important factor in the causation of angina pectoris. He said that investigation of the nerve understand the fact mentioned by Stokes of Dublin that he plexuses about the aorta was very necessary before the

Dr. E. H. COLBECK considered that "pain in the heart" was the main factor in the symptoms of an anginal attack. He thought that any theory of explanation of the condition must account for the fear of impending death.

Sir JOHN BROADBENT said that there was a great deal still to be learnt about the etiology and pathology of angina pectoris. He thought that most attacks were due to a spasm of the vessels induced by cold and exertion.

Dr. W. BEZLY THORNE thought that distension of the heart was the true cause of angina pectoris. He spoke of the presence of tender areas at the apex beat, over the third left costal cartilage, and over the lower part of the sternum. He advocated the use of blisters here in the treatment of the condition.

Dr. W. EWART considered that the influence of respiration on angina pectoris was not sufficiently taken into account. He thought it was possible that spasm of the diaphragm might in certain cases account for some of the pain present in an anginal attack.

NORTH LONDON MEDICAL AND CHIRURGICAL Society.-A meeting of this society was held at the Great Northern Central Hospital on Nov. 11th, Dr. James Crabb, the President, being in the chair.—Dr. Thomas J. Horder showed a case of Hæmophilia occurring in a child, aged 19 months, who had shown a tendency to bleed excessively since birth. The parents, who were first-cousins, showed no history of hæmophilia on either side. The patient had one brother and one sister, the latter, aged four years, being a hemophiliac.—Mr. G. B. Mower White showed a case of Hæmophilia, the patient being a boy, aged 13 years, who had been admitted to hospital with a swelling of the knee-joint of four months duration. The swelling had come on after a slight twist, and was found to consist of blood-stained synovial fluid. The blood when withdrawn did not coagulate for three-quarters of an hour, and the clots which were formed were small and shreddy. The boy was not anemic and his blood-count was It was stated that when he was an infant a cut on his head bled for three weeks, and that after the extraction of a tooth he continued to bleed for a week. He had had occasional attacks of pain and swelling of both knee-joints, and it had been noticed that he bruised quickly and over a large area after a blow. His family history showed nothing of interest.—Dr. C. M. Hinds Howell showed, for Dr. Horder, a case of Atrophy of Some of the Muscles of the Neck in a child, aged 7 years. The condition had begun a year ago during an acute attack of tonsillitis. The sterno-mastoids and trapezii were wasted and there was weakness of extension and rotation movements. Passive movements were fairly free. There was cervical scoliosis with the convexity to the left, and a skiagram by Dr. Lewis Jones showed a slight malposition of the axis with regard to the atlas. On attempting to rotate the head or to open the mouth widely the platysma was thrown into strong contraction. There was no wasting or weakness of the muscles of the extremities, and all the deep reflexes were present though diminished. There were no electrical changes in the mastoid muscles. -Dr. Hinds Howell and Dr. T. J. T. McHattie showed a woman who had been under observation for nine months suffering from Cerebral Symptoms of a Mixed Functional and Organic Nature, such as rendered a diagnosis of the actual lesion a matter of great difficulty. There had been constant headache, sickness, and giddiness, which had persisted in spite of treatment since last December, and had followed a blow on the head from a saucepan. Combined with these symptoms there were nystagmus, tinnitus, and nerve deafness on the right side, and complete loss of the power of smell and taste on the same side. The patient complained of almost total blindness in the right eve. though both disc and fundus were normal. and when tested with a prism applied to the right eye she was found to have 6/18 vision and to see double. There was distinct weakness of the lower facial muscles on the left side and of the muscles of the limbs on the right side. There was right partial hemianæsthesia, crossing the middle line by about 1 inch, as well as loss of sense of position of the limbs. Her reflexes were brisk, the plantar reflex on the left side was flexor, while that on the right side could not be obtained. Her gait at present was normal, though there had been a tendency to drag the right foot. When standing with her eyes shut she

tended to fall to the left. Dr. Howell was of opinion that the symptoms were mostly of a functional nature, though he thought that a tumour in the right temporosphenoidal region might account for the deafness and the loss of power on the left side of the face. -Mr. Mower White said that the case reminded him of a man whom he had seen some years ago, and who was found wandering about, anæsthetic on the left side, and unable to speak. He was sent into a lunatic asylum. The functional nature of his complaint was discovered when it was found that, his right hand being held, he was able to button up his coat with his left anæsthetic hand. Playing in a cricket match he was bowled with the first ball, exclaimed "D—," and from that moment was well.— Dr. McHattie showed a man, aged 63 years, in whom there was Motor Aphasia, combined with paralysis of the face, arm, and hand, and partial paralysis of the leg on the right side. The patient was able to repeat one or two familiar words, could sing in correct time, could read, and, though somewhat dull mentally, was obviously able to understand what was said to him. The onset had been gradual, and Dr. McHattie thought that it had probably been caused by a thrombosis of the middle cerebral artery, involving the cortex in the region of Broca's convolution. - Other cases and specimens were shown by Dr. B. G. Morison and Mr. Ernest H. Shaw.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCO-LOGICAL SOCIETY.-A meeting of this society was held at Sheffield on Nov. 19th, Dr. J. W. Martin (Sheffield), the President. being in the chair. -Dr. A. Donald (Manchester) read notes of a case of Wertheim's operation for Advanced Cancer of the Cervix, which was followed by uramia. 4 ounces of urine were passed on the first two days, and none at all on the third; on the fourth and fifth 62 and 120 ounces respectively were passed, and the patient appeared to be making good progress. On the sixth day coma set in, and death occurred a few days later. At the post-mortem examination the right kidney was found to be the seat of old cystic disease and to contain but little secreting tissue, whilst the left ureter had been constricted by a ligature. The left kidney was engorged but appeared to have been healthy before the operation -Dr. H. Briggs (Liverpool) recorded a case in which he had removed a Pyosalpinx, on account of pelvic pain of a month's duration, from a 2-gravida who was two months pregnant. The operation was performed three weeks ago, and the pregnancy was apparently undisturbed. Dr. Briggs also gave the details of a case of old-standing, Left-sided Pyosalpinx, for which the patient had refused operation three years previously. She improved and bore two children, but during the last nine months several attacks of pelvic pain had occurred. Recently the left ovary and the tube, which contained pus, had been removed.—Mr. Percival E. Barber (Sheffield) read the notes of a case in which he had performed total abdominal hysterectomy for Placenta Prævia Centralis. The patient, a 4-gravida, had been losing blood for a week before admission to hospital. Vaginal examination caused profuse hæmorrhage, which necessitated plugging the cervix and vagina. When Mr. Barber saw the patient she was blanched and apparently moribund; the pulse-rate was 140. The uterus. containing a dead full-time child, was removed. Two pints of saline were infused intravenously. The patient made a good recovery.—The following specimens were shown: -Dr. D. Lloyd Roberts (Manchester): A Uterus which he had removed for Malignant Disease of the Corpus. It was found to contain a fibroid polypus the base of which was invaded by glandular carcinoma arising from the neighbouring endometrium. The apex of the polypus was quite free from malignant disease. The patient was a multipara, aged 65 years, who had ceased to menstruate at 50 years. For three months there had been almost constant hæmorrhage, with, on three occasions, floodings accompanied by severe pain.—Dr. J. E. Gemmell (Liverpool): A Sarcoma of the Mesentery which clinically had simulated an ovarian cyst with long pedicle.—Dr. W. E. Fothergill thought the microscopical appearances were those of a perithelioma. -Mr. R. V. Favell (Sheffield): A round cell Sarcoma of the Vagina, removed from a single woman, aged 25 years. The hard nodular growth was easily enucleated and removed with its covering of vaginal wall.—Mr. P. E. Barber: A full-time Ectopic Gestation Sac, which had been successfully removed from a multipara, aged 34 years. Soon after the commencement

of the period of nine months' amenorrhœa she had experienced a sudden attack of right-sided pelvic pain with a feeling of faintness; this was not accompanied by external hæmorrhage. The fœtal movements, which had been very violent and painful, had ceased six weeks before admission. There was no history of spurious labour pains. The sutures of the softened feetal head could be easily felt through the thin abdominal wall and the state of affairs was readily diagnosed. The sac, which was largely extra-peritoneal, was removed entire with the body of the uterus, to which it was intimately united. The left appendages were normal. The right could not be discovered either at the operation or on later examination of the specimen. The right round ligament ran into the sac. The placenta, greatly thickened by blood clot, was attached to the back of the uterus and to the tissues at the base of the right broad ligament. - Mr. Barber also showed a Uterus with a Right Tuberculous Pyosalpinx and a Left Tuberculous Tube-ovarian Swelling. A nodule of caseating material enlarged the right angle of the uterus around the interstitial portion of the tube.—Sir William J. Sinclair showed Long Sea-tangle Tents suitable for the induction of labour. The tents were six or seven inches in length. Similar ones had already been used with good results in several cases.

MIDLAND MEDICAL SOCIETY .-- A meeting of this society was held on Nov. 17th, Mr. Frank Marsh, the President, being in the chair.—Mr. William Billington showed a child, $2\frac{1}{2}$ years old, all of whose nails resembled claws. The child was the sixth of a family of seven, the rest of whom were normal. The family history was negative. The fingers and toes were perfectly natural and showed no trophic disturbance. Each nail closely resembled the claw of a dog, being raised, almost black in colour, very hard, and projecting some distance beyond the extremity of the digit. - Mr. C. A. Leedham-Green showed a young woman with a large intermittent Hydro-nephrosis of the Right Kidney. Some six years previously the left kidney was removed for advanced pyo-nephrosis. At that time there was no evidence of any trouble on the right side. Gradually a hydronephrosis had developed in the remaining kidney and was slowly destroying it. The pressure of the fluid was causing such atrophy of the glandular tissue that signs of renal inadequacy were becoming manifest. A radiograph was shown, clearly indicating the size and relation of the cystic swelling. For the purpose of the radiography a catheter had been passed up the ureter and the cyst distended with a solution of collargol.—
Dr. O. J. Kauffman showed a case of Syringomyelia of seven years standing in a girl aged 15 years. The symptoms were muscular atrophy of the right hand, forearm, and deltoid. and spastic paralysis of the legs, left hemianæsthesia up to the level of the third cervical segment, coupled with hemianalgesia and thermanæsthesia in the same area. Tactile anæsthesia, analgesia, and thermanæsthesia were present in the right arm, though the right leg and the right half of the trunk showed no distinct anæsthesia. The right pupil and palpebral fissure were smaller than the left, and there was very marked kyphosis of the cervicodorsal region coupled with scoliosis below. No trophic joint lesion was present, but there was a great tendency to almost painless sores on the right limbs and the right buttock. The onset and progress were absolutely gradual and without the slightest history of pain at any time.— Mr. F. Victor Milward showed a case of Rupture of a Branch of the Superior Mesenteric Artery in a man aged 49 years. The hæmorrhage was excessive but the pulse-rate was never more than 70. Great difficulty was experienced in locating the torn vessel, and five pints of normal saline solution were infused into the internal saphenous vein. Ultimately recovery was uneventful. -Dr. Smallwood Savage showed a large Hydrocephalic Feetus which had caused an obstructed labour. The patient was admitted into the Birmingham Maternity Hospital with the body and limbs of the feetus hanging outside the vulva, but the large head, reaching 3 inches above her unbilicus, obstructing the complete delivery. An incision was made over the cervical spine, a trocar and cannula were inserted into the brain, and 3 pints of cerebro-spinal fluid were withdrawn. The collapsed head was then delivered with ease .- Dr. Thomas S. Short showed a specimen of a Thoracic Aortic Aneurysm with a sac measuring 6 inches by 5, taken from a man aged 56 years. It had exerted pressure on the

trachea and œsophagus and eventually caused death by rupture into the right pleural cavity. The acute symptoms had existed for ten days only, and throughout the whole history of the case there had been a complete absence of pain.—Mr. J. Hall-Edwards exhibited a new apparatus for electrical treatment and massage (netama). Its chief novelty consisted of an interrupter which could be regulated to make and break the current at measured intervals. It was claimed that the current was directed more deeply into the tissues than usual and that the muscle-contractions were stronger. The strength of the current could be regulated with precision.—Other cases and specimens were shown by Dr. J. G. Emanuel, Dr. J. E. H. Sawyer, Dr. J. Douglas Stanley, Dr. Charles E. Purslow, and Dr. H. Beckwith Whitehouse.

MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.-A meeting of this society was held on Nov. 5th, Mr. A. E. Maylard being in the chair.—Dr. W. S. Syme showed a patient with Polypus of the Vocal Cord. Dr. S. J. Cameron described an operation devised to facilitate the Removal of the Appendages in Chronic Salpingitis, and showed illustrative drawings.—Mr. H. Rutherfurd showed three interesting specimens illustrative of Gangrenous Hernia from cases of Richter's Hernia, Inguinal Hernia, and Obturator Hernia.-Dr. G. A. Allan read notes on two cases of Dextrocardia. The first was the case of a patient suffering from mitral disease, in whom it was found that the apex beat was situated in the sixth interspace, seven inches to the right of the midsternum. The liver, stomach, and spleen were found to be likewise transposed. The patient died, and at the necropsy a transposition of the viscera implicating the thoracic and abdominal organs in every detail was found. The second case was that of a patient with left hæmopneumo-thorax, in whom the cardiac dulness and pulsation were found to be displaced to the right of the sternum. patient recovered, and in six weeks the heart had regained its normal situation. The cause of the hæmopneumothorax was not obvious. There had been no injury and no evidence of phthisis or other pulmonary disease could be discovered. The condition came on suddenly when the patient was enjoying apparently good health.—Dr. W. K. Hunter showed Blood Films from a case of Acute Hæmorrhagic Leukæmia. The patient, a woman, aged 22 years, dated her illness from a bleeding from the gums four weeks previously. A fortnight later blood appeared in the urine and had persisted. There was no history of blood in the motions or of bleeding into the skin. On admission to hospital the patient looked very ill; the temperature was 100° F., the pulse was 120; the skin and mucous membranes were pale; there was bleeding from the gums; the breath was offensive; there were a few bluish markings on the skin like slight bruise marks; the urine resembled blood serum. There was no enlargement of the liver, spleen, or lymphatic glands; the heart apparently was normal; there was slight dulness at the left base, with scanty moist rale; no expectoration. Blood condition: red corpuscles, 2.680,000; white corpuscles, 59,375 per cubic millimetre; hæmoglobin, 45 per cent.; a little poikilocytosis; many nucleated red cells, about 2 per cent. of white cells. The great majority of the white cells were medium-sized mononuclear cells with fairly well stained nucleus and less deeply stained plasma. In a proportion of these cells (with Leishman's stain) the plasma had a rather leaden tint; in others were granules stained the same tint as the cell nucleus. In films stained with methylene blue only these granules stained blue. There were no typical "large lymphocytes "-i.e., cells with large pale nucleus and rim of darker stained plasma—only an occasional neutrophile marrow cell. Differential count: polynuclear cells, 4 per cent.; small lymphocytes, 15 per cent.; mononuclears, 79 per cent.; neutrophile marrow cells, 2 per cent. The patient lived eight days after this blood count, having been ill apparently about five weeks in all. Of special interest in the case were: (1) the hiematuria, a rare symptom in leukæmia; (2) the preponderance of mononuclear cells, which were neither typical large lymphocytes nor neutrophile marrow cells, a feature which made it doubtful whether the case should be classed as a lymphatic or a myelogenous leukæmia. Dr. Hunter referred to a similar case reported by Fiessinger and Pierre-Louis Marie in La Tribune Médicale of Jan. 16th, 1909. Dr. J. Wyllie Nicol showed Wax Casts made from patients suffering from various skin diseases. The casts were

made with the assistance of Mr. A. Kirkpatrick Maxwell, who did the colouring.

United Services Medical Society.—A clinical meeting of this society was held at the Royal Army Medical College on Nov. 10th, Sir Alfred Keogh, K.C.B., Director-General, A.M.S., being in the chair. — Captain C. C. Cumming, R.A.M.C., showed a case of Heat Stroke invalided from India. The onset was sudden and after an interval of 36 hours' unconsciousness the patient was found to be suffering from inability to speak distinctly or intelligibly or to walk or use his arms. At present there is no impairment of the general functions or of sensation. His speech is slow and deliberate, the words being slurred to a certain extent. There is incoordination to a slight amount in both upper and lower limbs, and he is unable to maintain his balance without some slight support. There is no loss of memory or brain power. Major W. S. Harrison, R.A.M.C. commenting on the case, remarked on its resemblance to one of disseminated sclerosis, from which, however, it differed in the steady improvement that it showed. He pointed out that the man was not conscious of any impedient to his speech, a symptom that was present even when the speech was quite unintelligible.—Captain Cumming then showed a case of Splenic Anæmia. The patient had been invalided on account of enteric fever in 1902, and the enlargement of his spleen dates from that period. Towards the end of that year he had an attack of hæmatemesis and syncope, the spleen being much enlarged. Similar attacks occurred in 1903, and again after a long period of freedom in 1907, and at the beginning of last year. At present the spleen is enlarged to within one inch of the umbilicus and is tender in the axillary line. The red cells are reduced to 3,000,000 and the hæmoglobin 50 per cent. His last severe attack of hæmatemeeis was in April last, since when there has been decided improvement.—Major Harrison pointed to the nontropical origin of the case, which was a characteristic example of Banti's disease. Malaria and kala-azar were excluded by the absence of parasites, and there was in addition none of the leukopenia so marked as a rule in the latter disease.—Captain J. C. Kennedy, R.A.M.C., described a case of Phagedenic Ulcer of the Larynx. The symptoms were not well marked as regards the larynx till within a few days of death. The previous history was one of high fever and enlargement of the liver and splcen. No parasites were present in the smears made from a liver puncture. post-mortem examination showed erosion of the tip and edges of the epiglottis, with sloughing in the region of the left vocal cord. A large bacillus was found invading the tissues at the base of the ulcers, possibly the cause of the disease. It was found impossible to subculture this organism. Resemblances were pointed out between this case and theulcerous rhinopharyngitis of Leys, as well as the sloughing phagedæna of the tropics mentioned by Manson. - Major C. G. Spencer, R.A.M.C., showed a case of Fracture of the Cervical Vertebræ, unrecognised at the time of occurrence, and only revealed by a subsequent X ray photograph 10 days after the accident. There was then some rigidity in the cervical region, but no tenderness or deformity. At present there is still some rigidity of the neck, and an area of impaired sensation on the posterior surface of the lower third of the forearm.—A discussion followed, in which Fleet-Surgeon V. G. Thorpe, R.N., and Lieutenant-Colonel R. W. Wright, R.A.M.C., took part, chiefly as to the advisability of early operation in serious cases of spinal fracture. Skiagrams of the case were

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Nov. 26th, Mr. C. Gordon Watson, the President, being in the chair.—Dr. B. G. Morison related the following three cases of Melena Neonatorum:—1. On the morning of the fourteenth day after the birth of a healthy child the diaper was found to be "full of blood," and almost immediately after the child died. The post-mortem examination showed that the gall-bladder contained some bloodclot as well as dark bile. The stomach contained bloody mucous fluid. The small intestine was entirely filled from end to end with dark bloody fluid, which escaped on puncture. The suprarenals were not distended and looked pale, but on opening them a little dark blood was found in both. Microscopically they showed extreme congestion of the medulla but no actual extravasation of blood. The capillaries in the medulla were widely dilated and the appearance suggested some possible interference with the normal blood

return from the organs. It did not suggest an acute condition, but rather one of some standing. 2. When born the child was of a dirty-brown colour, "like a penny," and the penis and scrotum were blue as if from subcutaneous hæmorrhage. There was bleeding from the cheeks; the skin was cracked in the flexures and bled easily. Brown material was vomited and black stools were passed which were occasionally mixed with a little pure blood. The child rapidly wasted and died on the twelfth day. Post mortem there was ecchymosis of the mesentery and mesenteric glands, ileum, and hepatic flexure of the colon. The suprarenals were rather larger than normal and in each there was a thin layer of dark blood in patchy arrangement. Microscopically they showed marked congestion of the medulla with blood free among the cells, infiltrating in places up to the cortex. 3. A healthy child, went on well for a week, then had hæmatemesis and passed dark "coffeeground" motions, which continued till death on the fourteenth day. Post mortem the mucous membrane of the intestine showed venous congestion from the anus up to the stomach. The suprarenals seemed rather large, and microscopically were engorged with blood. The question arose whether melæna neonatorum was merely part of a general hyperæmia which overflowed in the alimentary tract or whether it could have exercised a causal influence in the latter occurrence. Dr. W. Langdon Brewn showed some Pathological Specimens.- Mr. J. Houston Porter read notes of a case of Pneumothorax which had been twice operated on.—Dr. D. Ross read a short paper on the Relationship of Calculus to

SOUTH-WEST LONDON MEDICAL SOCIETY.—A meeting of this society was held on Nov. 18th, Dr. L. S. McManus, the President, being in the chair.—Dr. Victor Bonney read a paper on the Prevention and Treatment of Puerperal Sepsis.—A discussion followed.

Rebiews and Aotices of Books.

Naval Hygiene. By James Duncan Gatewood, M.D., Instructor in Naval Hygiene, U.S.N. Medical School, Washington, Medical Inspector, U.S.N. Prepared by direction of the Bureau of Medicine and Surgery, and published by permission of the Navy Department. With eight coloured plates and 105 illustrations. London: Rebman, Limited. 1909. Pp. 477. Price 25s. net.

Sir John D. Macdonald's "Naval Hygiene" appeared in 1881 and Romeril's little "Sanitation in the Mercantile Marine" in 1898. No other book on this subject has recently appeared in English. It is well the lacuna should be so worthily filled as by this account of the hygiene of the United States Navy. To direct our efforts for the prevention of disease we must first know what diseases there are to be prevented, so the author first discusses the relative prevalence of the diseases which occurred in the United States Navy from 1895 to 1905. Unhappily, he rarely states the crude figures, but only ratios, so it is difficult to find out with exactly how large a mass of facts he is at any time concerned. He has evolved a very valuable method by which to express the full damage done to the service in any one year by a single disease, or by all, assembling into one number the loss of service in that group per 1000 men daily from its sickness, deaths, and invalidings all together. As the deaths and invalidings are probably distributed evenly throughout the year, and one invaliding on March 31st means 9 months lost, another on Sept. 30th 3 months lost, average for the two 6 months lost, the service loses on the average for each man dead or invalided half the work it should have got out of him. Thus the total loss of service in any one year by the deaths and invalidings is their number × 6 months = half the number × 1 year. In short, to the sick daily per 1000 add half the deaths per 1000 and half the invalids per 1000, and the sum will be the total waste in that year daily per 1000 men from whatever disease or group of diseases we are at the

moment considering. Though most valuable and a great advance, this method is not final, for invalidings are given the same weight as deaths, vastly more important though these latter are to the nation if not to the navy.

In the United States Navy the greatest loss is by venereal disease, of which it is stated that it "takes more of the strength of nations than all wars and accidents," and is "accountable for more than 25 per cent. of all the damage from disease." The importance of intoxication as a predisposing cause is noted, alcohol being "not only a sexual stimulant, but a paralyser of the inhibitory control of the will." Very successful preventive measures taken on U.S.S. Wilmington in China in 1906 are reported (p. 46). Tubercle is the next most frequent cause of loss of service (8 per cent.); it occurs mainly amongst recruits. For prevention he recommends: (1) the zealous (author's italics) search for the bacillus in sputum; and (2) the immediate removal from the ship and invariable ultimate invaliding of every case.

The second chapter, Air, is the most important in the book, as this section must be in every book on the hygiene of ships. As an example of the author's treatment of the subject we may quote (p. 195) his account of the objects of ventilation: "The continuous and more or less systematic removal of air in a closed space by a properly distributed supply of air in good condition with the object of securing dryness, making up deficiency in oxygen, and removing, or sufficiently diluting, gaseous material derived from occupants and stores, over-heated air, products of combustion and particulate bodies that may be present." The excreta of man himself are, he recognises, the primary exciting causes of diseases. The impurities to be removed are carbonic acid, moisture, smells, and dust, often microbic; for air is fouled by excreta from lungs, mouth, intestine, skin, and by particles rubbed off clothing and bedding, all the conditions on board ship being complicated by dampness off the decks. The de Chaumont standard of ventilation after due consideration is the one adopted by him in a very thoughtful piece of work.

This book is too large and its contents are too various to make it possible to follow the author throughout with criticism or appreciation. We must be content to set down some of his salient points so as to indicate the scope of his industry.

For gun-deafness Elliott's ear-plugs are recommended as more efficient than plasticine, though more apt to be mislaid. The manufacture of distilled water is very clearly described. Mere traces of chlorides are due to priming and of no hygienic importance, but much chloride means leakage of unboiled cold sea water into the distiller (or condenser) tubes, and a great risk, especially in dirty harbours. Drinking water is almost never taken on board United States ships, and as all water is distilled, filters would only be a danger. 7½ gallons of water are asked for per man per day and 15 are wanted in ships with laundries. The need for frequent washing of hands is stated, and it is discussed whether, though a ship is not a hotel, soap and towels might not be provided conveniently for general handwashing, since the cleaner men and ships get to be, the less serious will be the consequences of wounds in action. Trough closets, with seats for 5 per cent. of crew, are prowided with constantly running sea-water. Discharges from the water-closets now often go to an automatic steam sewage discharger which blows them out of the ship. Every drain pipe should have a connexion for steam blow-through and disinfection; chemical disinfectants should not be needed. Sea-bathing should not occur in dirty harbours, nor with temperature of sea below 70° F., nor for more than 20 minutes at any one time. Reliance is placed on sulphur and formaldehyde for gaseous, perchloride of mercury for all other disinfection on ships. Sulphur is used as a culicide against yellow fever (5 pounds per 1000 cubic feet), and

against plague to get rid of rats and with them their fleas. For other diseases formaldehyde is used.

There is a full and lucid account of the principles of dietetics, and mention is made of the complications that had to be met in contriving the varied and popular diet scales of the United States Navy, but the section on meat inspection is too brief to be valuable, and its plates are useless. Alcohol is stated to be a genuine food, but here of less value than sugar, which, besides, produces no subsequent depression. It is further noted that alcohol is popularly no more employed for its food value than is castor-oil; both have some slight food value, but neither is ever used except as a drug. It is pointed out that the expenses and profits of "tenant" canteens come out of the money the men spend on food, chiefly money contributed to them by the State in commutation for rations they do not desire. Hence commutation for all but the higher ranks has been abolished in the United States Navy, which, by the way, issues no ration of alcohol.

The examination and selection of recruits are minutely and usefully discussed. The United States Navy recruits men between the ages of 17 and 35 years, with varying standards, for four years, and if satisfactory and still physically fit they may re-engage within four months of discharge. In 1907-08 17,852 so entered for the first time; of those discharged 57 per cent. (4077) rejoined. The American Service uses the Holmgren test and fingerprints. The author points out that sickness-, invaliding-, and death-rates vary directly and materially with the number of recruits received, and that the morbidity of two navies can hardly be usefully compared unless the proportion of recruits involved is in each case stated. would add that to make such comparisons of value, or comparisons with the health conditions of the male populations of their own country, it is essential that the incidence of diseases should be classified in age groups and the numbers at each age stated, but that is rarely or never done nowadays.

The book is well illustrated, yet wants more diagrams. In preparing a new edition the table of contents should be paged and its headings be printed throughout the book in bold type; 150 pages is too long for the unbroken featureless flow of a chapter. Some misprints are to be corrected. On p. 405, π is not 3 4116. It must be tuneful sometimes on an American ship of war if (p. 468) the potatoes are "pealing." But when we read (p. 154) that "wind taughtens the anchor chains" we gather this is not a misprint, but a different usage, and recall the old yachteman's puzzle, "If all the ropes in a ship are 'taught,' who teaches them?" To sum up, this is a good book, full of facts hitherto unstated or unattainable, and even if at times a little prolix, welcome for its sound and original opinions. It should be in the hands of all naval medical officers and ship surgeons, though its weight-4 pounds-will sometimes bring it to harm in the study hours of an afternoon. We congratulate Dr. Gatewood on his excellent achievement in a too poorly occupied field, and the United States Navy Department and Medical Bureau on their wise encouragement which made it possible thus clearly to state the influences which secure the health of those valuable and costly men, their sailors.

A Test-book of Practical Therapoutics. By HOBART AMORY HARB, M.D., B.Sc., Professor of Therapoutics in the Jefferson Medical College of Philadelphia. Thirteenth edition. With 122 engravings and 4 coloured plates. London: Henry Kimpton. 1909. Pp. 958. Price 21s.

This is an expensive book which has appeared in an English edition 13 times, twice in Chinese, and once in Korean. Although this is not the first time we have reviewed it, its value and its emendations warrant another

full notice. The work is not a handbook of therapentics on the usual lines; it does not give arranged tables and lists of drugs in such a manner that the composition, manufacture, chemical relations, and uses of any article can be found at once. On the other hand, it is not a theoretical work on the physiological action of drugs. Half the volume is devoted to a survey of drugs treated alphabetically. This is not an ideal arrangement, as it destroys the view of the proper chemical relations of the substances under consideration; but it has the advantage of ready reference. It is clear from the adoption of this arrangement and from other points of evidence that Professor Hare intends this work to be useful to those with limited chemical and medical knowledge, who are yet obliged by circumstances to undertake the rôles of physician or surgeon, that is, missionaries, deaconesses, nurses, or apothecaries. To such persons, who would probably also be forced to content themselves with a limited library, this compendium will be very useful. It will be not only useful for everyday references, but forms a broad, balanced, scholarly encyclopædia of medicine written by one who knows his subjects (not subject) and the needs of those for whom he writes.

The next section of the book comprises a hundred pages on remedial measures other than drugs. This section is on the whole very well done, but it attempts too much. Spinal anasthesia is not a safe procedure to adopt when the operator is dependent upon the instructions of a book and the aid of a picture, even if the picture is a beautiful half-page illustration of a gentleman sitting on a stool undergoing the administration. Less risk will be incurred by the student who attempts to apply leeches in accordance with the very bad wash drawing on p. 560. The illustration is quite worthless; no one could apply a leech from looking at it, unless he knew how to apply a leech previously; and no reasonable guide is afforded by the picture as to the proper field of the industries of the leech. Some warning might have been given as to the difficulties of ascertaining which is the "head end" of the leech, and so save the student from the pitfall so graphically described by H. S. Leigh-

"Perchance, reluctant being, I have placed thee wrong side up, And the lips I have been chiding are the furthest from the cup."

Is it any use to try to instruct readers as to the proper method of administering a course of "Weir-Mitchell" rest cure in two pages? Anyone who had to depend upon two pages of a book for their knowledge of a procedure fraught with so many difficult points and responsibilities had better leave it alone for his own credit and the patient's weal. It is not safe advice to say, "Be the symptoms what they may, as long as they are dependent upon nerve strain, this 'cure is to be resorted to, and if properly carried out is often attended with surprising results." If such an important procedure is undertaken in this airy fashion the results will occasionally be surprisingly disappointing to both patient and adviser. But there is no more difficult task in the compilation of books on modern therapeutics than the just estimation of the value of modern methods. In his selection of these methods Professor Hare has shown great judgment.

We would suggest that Professor Hare in a subsequent edition should revise the chapter on feeding the sick. There is no use in the elaborate tables of nutrient values which range from beef or codfish "as purchased" to "beef or codfish" as edible portions, with equivalent statistical estimations of "bluefish" and "shad," "oysters in shell," "cow's milk," "oleomargarine" or "lemons," and a little more attention might have been paid to the recipes for cooking. One recipe for "mulled wine" says: "Boil some spices—cloves, nutmeg, cinnamon, or mace—in a little

water, and add as much of this decoction as is necessary to flavour a wineglassful of sherry or any other wine. If claret is used it will require more sugar than if a less sour wine is employed." We trust we may not encounter "mulled wine" prepared by the inexpert from this recipe. And the author gives us the amount of fats, carbohydrates, and mineral matters in a "red Rhine wine" (which can hardly be procured in England, and still less, we should say, in America).

300 pages are devoted to "Treatment of Disease." This is also arranged alphabetically, and in consequence many of the "diseases" are merely symptoms. This part is carefully written, sound in selection, and not too condensed in style. Many of the illustrations are of moderate value; the coloured plates are of fine quality, but the cost of their production is not justified by their practical worth.

Medical Inspection of Schools. By A. H. HOGARTH. M.B., B.Ch. Oxon., D.P.H., Assistant Medical Officer (Education), London County Council. London: Henry Frowde and Hodder and Stoughton. 1909. Pp. 360, including appendices and index. Price 6s. net.

In this interesting and valuable volume the author gives an exposition of the medical inspection of school children and an account of the methods which are, or which he thinks should be, adopted. The insight gained in his work for the London County Council enables him to describe and to comment on the work in other places, both in this country and abroad, in a useful manner. But, as might be expected from the well-known views of the author, a large part of the book is given over to a discussion of the question whether school medical officers should be independent officers, or whether they should be (or work in conjunction with) officers of the public health service-a question of subsidiary importance from the point of view of many likely to be attracted to the volume by its title. Dr. Hogarth is so strongly persuaded that the school medical officer should be independent, that in perusing the earlier chapters we cannot avoid the impression that both sides of a difficult question are not receiving adequate treatment. On p. 97 there is a table which must have taken considerable trouble to prepare. It gives a list of subjects in relationship with the public health ranging from quarantine to elementary school teachers' superannuation, and of value from many points of view, but in a work purporting by its title to deal with the medical inspection of schools the introductory sentence, which states that the table "illustrates the present condition of medley and chaos," does not do justice either to the performances or the expectations of those who regard school inspection as a legitimate development of the public health service. The sentence immediately succeeding is as follows: "In this incongruous and uncompromising medley school hygiene has to take its place as the newest branch of State medicine." We would suggest that Dr. Hogarth when revising his work for subsequent editions should very materially modify Chapter VIII .. rendering it more instructive and less controversial. "The organisation of a central department of State Medicine" is not essentially a subject to be dealt with in a volume the title of which indicates that it has to do with the medical inspection of schools.

The chapter on administrative routine, though not improved by the effort which is constant through the book to maintain the position that school medical officers should be independent, is of great interest. It contains details of inspection, of registration, of the action taken in connexion with infectious diseases, of special schools, medical certification, annual and other reports, and so forth. The chapter on treatment embodies much valuable matter and would be improved by amplification, and space could easily have been found if topics less germane to the central subject had been

more briefly treated. School clinics and the difficulties connected with their establishment are dealt with in Chapter XV., and the case for their establishment is well stated, as also is the description of the necessary building and furnishing. The cost set forth on pp. 252 and 253 seems heavy and is likely to deter the more parsimoniouslyminded authorities from putting their ratepayers to expense in the matter, but there is not yet sufficient evidence to show exactly what the absolutely necessary amount of expenditure in any given locality should be.

We shall not follow Dr. Hogarth into the more controversial part of his book, but he certainly gives those who desire to do so considerable opportunity. On p. 117, advocating the appointment of medical practitioners as school medical officers, he points out that "a local doctor has a great opportunity of getting into touch with teachers and parents," as it should be part of his duty to "give lectures to the teachers, and arrange conferences at the school for the parents." In this regard Dr. Hogarth attaches little importance to the fact that local practitioners appointed to schools in this manner have an advantage over their fellow practitioners in gaining the good opinion of the people in the locality, and it is probable that at times this advantage might operate unfairly. The question is by which section of the medical profession can the public be best served in the matter of medical inspection of school children, and where should the emoluments of the service be directed. The conditions of urban and rural practice are different, the interests of all members of the medical profession are not identical, and in the consideration of these difficult matters Dr. Hogarth takes a very decided line. We cordially approve of the open way in which he gives views to which he has a perfect right, but it would have been well had he gone more fully into the other side of the question; no general law can, we think, at present be laid down for all the county areas, and good work is being done under both systems.

There is a vast amount of useful information contained in this book and Dr. Hogarth is to be congratulated upon his performance. But those who are looking for a guide to their labours as medical school inspectors ought to know that in his work they will find a good deal of matter which will be of no service to them in their routine, though it may supply them with food for considerable thought upon the whole educational question in connexion with personal hygiene. The book is one which should be read in a critical spirit, as it is important that the reader for some time to come should retain an open mind upon several of the questions upon which Dr. Hogarth makes very decided, and sometimes premature, pronouncements.

The Law Relating to Poisons and Pharmacy. By W. S. GLYN-JONES, Barrister-at-Law. London: Butterworth and Co. Price 10s. 6d. net. 1909. Pp. xxxvi. +410.

THE restrictions with which the legislature has from time to time bound the sale of poisons deserve study by all publicists, whilst the laws which govern the practice of pharmacy, which is an integral part of the art of medicine, should be understood by all medical practitioners. We have, therefore, read Mr. Glyn-Jones's work with the greatest interest, and welcome it as a handy compendium of the statutes, charters, and leading cases dealing with the subjects included in its title.

Free trade in poisons was only abolished in 1851, when in consequence of numerous cases of poisoning the Arsenic Act was passed, restricting and controlling the sale of all colourless poisonous preparations of arsenic, or, as chemists prefer to call it now, arsenium. In the following year the first Pharmacy Act received the Royal Sanction, but

the sale of poisons, providing only for the registration and protection of the title of pharmaceutical chemist. The Pharmacy Act of 1868, however, made it an offence for any person not registered as a pharmaceutical chemist, or chemist and druggist, to sell or keep open shop for the retailing, dispensing, or compounding of certain substances scheduled by the Act as "poisons," and this provision, with some additions made to the schedule from time to time, remained in force in its entirety until April 1st last, on which date the Poisons and Pharmacy Act of 1908 came into operation. Section 2 of this Act provides for the granting by local authorities of licences to persons other than registered chemists, enabling them to sell the poisonous substances referred to in the section for use for specified purposes in connexion with agriculture and horticulture. The reason for this somewhat retrograde enactment was the inconvenience which it was alleged had been suffered by farmers and gardeners owing to the restriction of the sale of poisonous material to registered chemists and druggists in districts where there were no such qualified tradesmen within easy reach.

The Schedule of Poisons has also been recast by the 1908 Act, but is by no means free from ambiguities, and the author of this work has drawn up a list of substances which he considers are comprehended by its terms, and which should at least serve as a guide. He points out, however, that such phrases as "poisonous vegetable alkaloids" involve questions of fact which can only be determined upon the evidence of medical experts. The term "poisonous" being a relative one, the difficulty arises in arriving at the degree of toxicity necessary to bring any particular alkaloid within the schedule. Probably the alkaloids specifically named in the schedule may be taken as a guide, and the expression, "All poisonous vegetable alkaloids not specifically named in the schedule," be taken to mean alkaloids ejusdem generis (as to toxicity) with those specifically named.

With regard to medicines supplied by medical practitioners to their patients which contain scheduled poisons we are reminded that these are only exempt from the provisions of Section 17 of the Pharmacy Act, 1868, if such medicines be labelled distinctly and legibly with the name and address of the seller (i.e., the medical practitioner) and the ingredients thereof be entered with the name of the person to whom it is sold or delivered, in a book to be kept by the seller for that purpose. We cannot recall any case in which this section has been enforced against any medical practitioner not keeping an open shop, nor does the author quote such, but it is hardly satisfactory that it should be so habitually ignored. The book contains an interesting discussion as to the meaning of "acting as an apothecary," and enunciates rules as to when what is known as "counter-prescribing" comes within the meaning of this phrase. Although the author has a somewhat arid legal style we can commend his work to all who are interested in forensic medicine.

LIBRARY TABLE.

Three Voyages of a Naturalist. By M. J. NICOLL. Second edition. Illustrated. London: Witherby and Co. 1909. Pp. 246. Price 7s. 6d. net.—The demand for a second edition of this excellent book of travels within 18 months of its first publication proves that a large number of readers appreciate a well-written account of foreign parts. Mr. M. J. Nicoll was chosen by the Earl of Crawford to accompany him as naturalist on three of the trips in his steam-yacht Valhalla. Lord Crawford states modestly in his introductory note that he took Mr. Nicoll with him that "he might bring back something for the Natural History Department of this in no way restricted the practice of pharmacy or the British Museum." The choice was amply justified, and as the results of Mr. Nicoll's work 500 skins of birds were brought home, of which no less than eight were specimens new to science. The whole book is fresh and delightful to the general reader, and to none more than to those whose lot confines them to cities in the dark, short, and bad days of winter. For it is glorious to read of sunshine and mountains and palm trees, and barrier reefs covered with water so clear that everything is seen as in a glass tank. To the medical reader the book appeals especially in the account of Easter Island and its present and past inhabitants. Cases of elephantiasis were seen in Tutuila Island, one of the Samoan group, where the natives believe that the disease arises from the bites of mosquitoes and say that nearly 25 per cent. of the inhabitants are affected. The stegomyia fasciata was found on Pitcairn Island and also in the Society Islands, but, fortunately, these mosquitoes do not seem to be infected yet with the yellow fever parasite. The three voyages were, one round Africa in the winter of 1902-03; a second to the West Indies in the succeeding winter, visiting the Great and Little Cayman Islands: the third, a voyage round the world in 1905-06. The book is illustrated with 56 plates, four sketch maps, and many text illustrations. It is also provided with a good index.

Air and Health. By RONALD CAMPBELL MACFIE, M A., M.B., C.M. London: Methuen and Co. Pp. 345. Price 7s. 6d. -This unnecessarily bulky volume gives an account of the properties of the atmosphere as they affect health. It is one of a series of books entitled the "New Library of Medicine," which is presumably issued to instruct a non-medical public in various aspects of public health, or in certain conditions of health as they may be controlled or influenced by the State. The volume before us is a plea for fresh air, with which no one can quarrel. There are many besides the members of the medical profession who have to preach the value of fresh air. Some of them have no accurate knowledge of physics or physiology, and have neither the time nor the necessary books to formulate for instructional purposes the slight general impressions which they may have. Such persons are clergymen, schoolmasters and schoolmistresses, nurses, health visitors, mill-owners, superintendents of mines and of indoor labour generally: to these Dr. Macfie's book will prove very useful despite its shortcomings, which no doubt have their origin in the intended scope of his work. The author has had assigned to him the difficult task of translating scientific pronouncements into a language understanded of the people. There are few writers who have this gift, even if they have a sound knowledge of the scientific facts upon which their subject is based. The general information in this volume on the chemistry of air, the physiology of respiration, temperature, and humidity, takes the form of compilations, on the whole not well expressed; they might with advantage be considerably compressed. Some of the problems considered are of a highly complicated nature, such as that of relative humidity, and it is doubtful if a reader of small scientific knowledge would carry away much information from the chapter headed "Humidity and Thermolysis." The latter word is never defined, and is introduced in an entirely haphazard way on page 87. The ignorant beginner would learn far more from a few pages of a well-written, small text-book, such as Balfour Stewart's volume on "Elementary Physics." If Dr. Macfie fails in the arrangement and matter of his introductory chapters it is because, perhaps, he has not been accustomed to elementary teaching on these subjects. When he comes to the practical application of scientific knowledge to ventilation and the evils of foul air he expresses himself well, and avails himself in an interesting manner of the detailed labours of others. The chapters on impure air, trade emanations, dust, and ventilation are excellent and

readable. The remarks on fresh air and the abolition of "colds" are very sound and wholesome. Dr. Macfie's personal experience as superintendent of a large sanatorium for tuberculosis renders his pages on open-air treatment a valuable closing chapter. He gives a picture of the difficulties and opposition which the early pioneers—Bodington (1840) and Henry MacCormac (1855)—encountered, in spite of the courage with which they advocated in vain a system which is now adopted over the whole world. More credit might be given to these two Englishmen, who were really the original priests of the cult of the open window.

Food and Health. By ARTHUR E. POWELL, Lieutenant, Royal Engineers. London: Methuen and Co. 1909. Pp. 266. Price 3s. 6d.—This is an ex-parte exposition of the usual stock arguments in favour of vegetarianism. There is a chapter in which it is sought to condense the teaching of Dr. Haig and others on the degradation products of nitrogenous katabolism. Another chapter consists of "snippets" from all sorts of authors, selected presumably because they support the practice of vegetable feeding. These include such high authorities as "Lieutenant Low in the Food Journal, 1873" (sic), the Panama Star and Herald, and Oliver Goldsmith. The last respectable essayist as an authority on the food of the ancient Britons is funny. In the same chapter is a quotation from Miss Anna Kingsford to the effect that "even the rich people in this province take meat only on fête days." Those who know Brittany, the province mentioned, will know this to be quite incorrect. Lieutenant Powell spoils his own cause, a cause with which we have no quarrel, by attempting to support it by disquisitions on the ethics of killing animals. Then he drags in a chapter on so-called Christian Science and its congeners. Meat. alcohol, tobacco, tea, coffee, and all drugs come under the same ban, and leave the reader wondering at the gallantry of the lieutenant in making so many attacks on such slender equipment.

A History of the Oxford Museum. By H. M. VERNON, D.M. Oxon., and K. D. VERNON. Oxford: At the Clarendon Press. 1909. Price 1s. 6d. net. Pp. 127.—The authors of this little book tell us that its beginnings arose out of the Jubilee celebration of the museum held in the Sheldonian Theatre last year. Nearly all valuable work which has been accomplished in this world derives its value in great part from the struggles and trials which have accompanied its inception and progress, and the Oxford Museum is no exception to this rule. Dr. Vernon and his collaborator trace the study of scientific subjects in Oxford from the modest beginnings of that which is now the Royal Society in 1645 to the present day. From that date until the foundation of the museum in 1855 science, to quote the eloquent words of the Vice-Chancellor at the Jubilee celebration, was in the condition of the cavedwellers among primitive man. "Her teachers, like those of the early Church, wandered about in 'caves and dens of the earth." But the work went steadily forward until "the cockatrice's den," as one worthy don of the old school called the museum, has grown into the present fairly well equipped building. We say fairly well, for there is still plenty of room for more apparatus. It is easy to be wise after the event, but if the fabric of the museum were now in course of erection there is no doubt that the Gothic style would not be the one chosen. We have always thought it a pity that Ruskin and Woodward, thorough artist as the latter was, did not choose a design taken from Tudor or Jacobean architecture. This style with its enormous windows would have given every opportunity for one great desideratum of a museum or laboratory-namely, light, although in the laboratories the characteristic ornamented ceilings would have required modification to avoid the

collection of dust. But as the Gothic style was adopted nothing could have been carried out with more of the feelings of the mediæval craftsman than the decorations by Woodward and O'Shea despite the heavy handicap under which they laboured owing to the vagaries of the Delegates' Council, Convocation, and the contractors. All these difficulties and the way in which they were overcome, more or less, are set forth in Dr. Vernon's interesting little book, a book which we counsel those interested in the progress of science at Oxford to read.

Laboratory Notes on Industrial Water Analysis. By HELEN H. RICHARDS. First edition. New York: John Wiley and Son. London: Chapman and Hall. Pp. 48. Price 2s.-This is a capital manual written for the use of the engineer. The directions are quite sensible, and are embodied in a well-planned series of laboratory exercises. These exercises relate to such practical considerations as the hardness of water, the tendency to form scale, the presence of iron, alkalies, of oxygen dissolved, of any action upon metals, and so forth. The book concludes with a number of tables giving useful data. The author is careful to point out that in a number of cases the questions at issue can only be dealt with by the expert chemist. There remain, however, certain simple cases which the engineer with the clear instruction set before him in this book should be able to decide for himself.

Reports and Analytical Records

THE LANCET LABORATORY.

PYOCYANASE.

(Odol Chemical Works, 59, and 63, Park-street, London, S.E.)

Pyocyanase was referred to in an interesting paper by Dr. Eug. Piasecki on "The Bacteriological Investigations on Some Modern Mouth Disinfectants," published in THE LANCET of Nov. 6th, 1909. Pyocyanase is prepared according to the method of Emmerich and Loew from several weeks old cultures in fluid media of the pyocyaneus organism under special conditions. The liquid is carefully sterilised and keeps for a remarkable time; it is selfpreserving. Pyocyanase, in fact, represents the enzymes derived from the bacillus pyocyaneus, and amongst these ferments is a germicide not only fatal to the bacterium itself, but to many other species. This fact suggested the use of the sterilised culture in internal disinfection. Its germicidal action is certainly remarkable, judging from the bacteriological experiments made with it. Pyocyanase has been employed in a number of diseases, as, for example, diphtheria, scarlet fever, nasal catarrh, diseases of the mouth, and so on. According to Dr. Piasecki, pyocyanase when applied in spray in small repeated doses develops a higher bactericidal action than any other mouth disinfectant which has hitherto been recommended after exact investigation.

ANTI-DIPHTHERIC DRAGÉES.

(THE ANGLO-AMERICAN PHARMACEUTICAL Co., 59, DINGWALL-ROAD, CROYDON.)

These dragées are prepared by the Pasteur Vaccine Co. at the bacteriological institute at Lyons. They present the appearance of a sweetmeat and are allowed to slowly dissolve in the mouth. Each contains, it is stated, 0.25 centigramme of anti-diphtheric serum rich in antitoxic units. The medium is a special preparation which serves to preserve the serum until such time as the dragées are taken. They are intended for use as a preventive of diphtheria and as a guard against throat troubles.

- (1) MASSOLETTES; AND (2) LACTATED IRON TABLETS.
 (ARTHUR H. COX AND CO., LIMITED, BRIGHTON.)
- 1. The massolette is a very ingeniously prepared chocolate-coloured sweetmeat, containing the bacillus of Massol in its highest state of activity. We have carefully examined the preparation in regard to this statement and find that it is true. A single massolette placed in half a pint of milk kept at 100° F. soon developed lactic acid. These bon-bons are designed for what is sometimes called the health milk treatment. 2. The lactated iron tablets undoubtedly afford a satisfactory way of administering iron. The iron occurs along with the lactic acid bacillus.

ANTILEPROL.

(The Bayer Co., Limited, 19, St. Dunstan's Hill, London, E.C.)
Antileprol is described as a specially purified form of chaulmoogra oil, which the Bayer Co. has introduced at the request of Dr. Engel Bey of Cairo, who states that it has the same curative properties as the original chaulmoogra oil (oleum gynocardim), but is much superior to the other, since it enables prolonged treatment to be carried out in most cases without unpleasant complications. The oil is also recommended for tuberculous cases. The sample which we examined was of a light vellowish colour and was contained in capsules of half and one gramme for purposes of administration.

"PACO" DIASTASE MALT EXTRACT.

(PAINE AND Co., LIMITED, ST. NEOTS, HUNTINGDONSHIRE.)

Two specimens of malt extract were submitted to us and both showed a high degree of digestive activity; sample No. 1 proved to digest 10 times its weight of starch at body temperature, and sample 2 as much as 20 times its weight. It is probable that these figures would be doubled under conditions of higher temperature. Apart from their high diastatic activity, the specimens were agreeable to the taste and contained a commendable portion of malt extractives, including proteins, malt sugar, and phosphates. The process of manufacture is evidently carried out with care, preserving as far as possible the initial activity of the diastase in the malt.

TURTLE CUP.

(TURTLE CUP, LIMITED, 15, BURY-STREET, ST. MARY AXE, LONDON, E.C.)

"Turtle cup" affords a convenient and ready way of preparing turtle soup. It consists of a square gelatine tablet which quickly dissolves in hot water. The resulting bouillon is pleasant to the taste and the analysis of it showed the presence of nutritious elements setting aside the question of the value of gelatin. The mineral matter amounted to 10.50 per cent., the moisture to 25.90 per cent., and the total nitrogen to 7.48 per cent. Flavouring materials have evidently been added, but in quantities which do not disguise the much esteemed turtle flavour. "Turtle cup" introduces a very palatable and nutritious soup for domestic use, and it is an advantage to be able to prepare it as required.

USHER WHISKIES.

(FRANK BAILEY AND Co., 50, MARK-LANE, LONDON, B.C.)

The whiskies examined were of a mild type owing to judicious blending. The flavour was delicate and indicated a blend of malt with grain spirit. The estimation of the secondary products endorsed this view. The sample marked "Liqueur" gave on analysis the following results: alcohol by volume, 48.21 per cent.; extractives, 0.14 per cent.; volatile acidity reckoned as acetic acid, 0.022 per cent. The furfural amounted to 1 part per 100,000 parts. The sample marked "Special Reserve" gave the following results: alcohol by volume, 47.67 per cent.; extractives 0.15 per cent.; volatile acidity reckoned as acetic acid, 0.02 per cent.; and fixed acidity reckoned as acetic acid, nil. The

former specimen showed greater age. Both whiskies were clean to the palate and free from coarse flavour.

BIPSINE BREAD AND BISCUITS.

(Bipsine Food Co., Westminster Estates, Limited, 17, Waterloo-place, London, S.W.)

It is stated in regard to Bipsine bread that its digestibility is enhanced by adding to it a small quantity of pepsine. However that may be, our analysis gave the following results: moisture, 35.70 per cent.; total protein, 5.73 per cent.; mineral matter, 1.50 per cent.; and soluble matters (cold water), 12.00 per cent. These results do not differ materially from those obtained with ordinary well-made bread. The texture of the bread was uniform and the flavour good and appetising. Further, the loaf keeps well and develops no acidity. We strongly approve the method of delivering Bipsine bread to the consumer, each loaf being wrapped in white paper with a band outside which serves as a guarantee label. Bipsine biscuits are made on similar lines and the result is satisfactory. They are well baked and crisp and possess an attractive flavour.

THE JOHN HERBERT WELLS FUND.

THE following is the fourth list of subscriptions to the John Herbert Wells Fund. Further contributions will be gratefully received by the Earl of Dalhousie and Mr. Julian G. Lousada, honorary secretaries and treasurers of the fund, at 16, Old Broad-street, E.C., or by ourselves at this

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ven and Co	2	2	0	Mr. James Henderson	1	0	0

N.B.—The items marked "were included in the donation of £64 17s. om "Members of the Stock Exchange" published in the last list.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

WEDNESDAY, NOV. 24TH.

THE Council resumed its sittings. Sir DONALD MACALISTER, the President, was again in the chair.

The Medical Curriculum.

The sitting was mainly occupied with the consideration of penal cases. However, an interval of time intervening between two cases was utilised for continuing the debate on Dr. J. Y. Mackay's motion expressing approval of the following recommendation of the Education Committee:

"That the following be added to the Recommendations of the

"That the following be added to the Recommendations of the Council in regard to Professional Education.

"For the purposes of this Recommendation the subjects of the curriculum are arranged in two groups, the Earlier Group comprising the Preliminary Sciences and Anatomy and Physiology, the Later Group embracing all the remaining subjects, exclusive of Pharmacy

Pharmacy.

"The Regulations of the Bodies should be so framed as to secure (1) for the study of the subjects of the Later Group the reservation of a period equivalent in value to 2; academic years (27 months) of undivided study, half-time value being allowed for periods of work in which studies in the Earlier and Later Groups overlap; and (2) the reservation of a period of two academic years (21 months), in which studies of the Later Group shall have the undivided attention of the Studies."

Dr. NORMAN WALKER (resuming the debate) said that he had long been interested in medical education, but it was only in the last 18 months that he had been a member of the committee in Edinburgh which had been considering the question of the curriculum. He had learned how easy it was to criticise the medical curriculum, but how difficult it was to fit in the different parts one with another. He recognised that the earlier subjects, if properly taught, were of immense value in the medical curriculum. The Council did not count botany and zoology amongst these. All it required was an elementary course in biology. No one could deny that it was an admirable introduction to anatomy. The amount of apparatus used in practical physiology made it important that students should have more acquaintance with physics than school teaching could afford. Chemistry could be taught in such a manner as to be perfectly useless to a medical student, or it might be taught so as to be an admirable introduction to physiology and pharmacology later. All depended on how subjects were taught. The object of the motion, he understood, was to try to make it more certain that the clinical subjects should get fuller consideration. The importance of the earlier scientific training could not be exaggerated. He agreed with the remarks of Sir Thomas Fraser that it was very important that a thorough groundwork should be laid in the case of every student. That was not all. The State required that the Council should only admit to the Medical Register those persons who had a practical knowledge of medicine, surgery, and midwifery. He might take it upon himself to speak for the younger generation of Edinburgh teachers when he said that they recognised the importance of clinical teaching. In a report they had recommended that during the last three years of the curriculum the hours between ten and half past one should be spent in the wards of the hospital. Of course, in connexion with a motion such as the Council was now discussing, there were details which were matters for individual medical schools, such as classes, teachers, buildings, and domestic discipline. What the Council was concerned with was rather that the final subjects should be adequately taught. If the recommendation were passed, the licensing bodies which did not at present accede to the 21 months of undivided final study would find it easier to insist upon this in the future. He hoped that the recommendations of the Education Committee would be passed as an instalment of what required to be done in medical education.

Dr. FINLAY thought that there was a good deal of complexity introduced into the proposal of the Education Committee by the mention of "overlapping" in it. That would give rise to a great deal of confusion in the minds of the students. If the question of overlapping could be got rid of it would be a great advantage both to students and teachers. A finished medical man could not be turned out

in five years or in ten years, but a good foundation could be given him in his student years for his clinical work. He did not propose to vote against the motion.

Sir CLIFFORD ALLBUTT said that certain universities were only partially responsible for the clinical teaching of their students. He might remark at the outset that the debate so far as it had proceeded had not left a very definite impression on him. It appeared to him that the speakers had been mixing up different things. They had spoken about universities and the great professional corporations, and mixed up their standards with what was the duty of the Council. The duty of the Council was to fix an irreducible minimum of medical education with which a man should be allowed to go into practice. The Council had not to consider the com-Plete training of students from the ideal point of view. What it had to consider was a case where a father who had not a very large income desired his son to follow him, say, in a suburban practice bringing £500 or £600 a year. It was a grave statement to make that a man could not be well educated in five years as a competent resourceful family practitioner in a modest sphere. If he could not be so educated in five years then medical teaching must be very much at fault. The first year of study had been referred to. If more was to be expected from the medical student than a certain adequate foundation of the rudiments of chemistry, biology, and physics, then too much was being asked. He thought that the rudiments of these subjects should be given in the schools. At Cambridge steps had been taken in this direction. If the student was set to work on his anatomy to begin with, along with some advanced chemistry, he could in the second year take anatomy and physiology. Then he could have three years in which pathological work would go on concurrently with medicine and surgery.

The PRESIDENT remarked that he wanted the Council to have a clear idea of what was proposed by the Educa-tion Committee. There had been a large number of tion Committee. speeches dealing with various stages of the curriculum, but the debate really centred on one point—what was to be done to safeguard the second part of the curriculum. The proposal was that the Council should represent to the licensing bodies that their regulations should be so framed that the study of the final subjects, including such subjects as pathologv, medicine, and surgery, should extend over two and a half years, and in any case that the instruction in them should extend over two years after anatomy and physiology had been completed. If the Council for the first time made that announcement, it would have taken a definite step in indicating to the licensing bodies the importance which it attached to the final subjects. Sir Clifford Allbutt had pointed out the fact that the Council was not legislating for an ideal curriculum which would extend over seven or eight years, but for a minimum curriculum by which a guarantee was given to the public that a medical man was a safe practitioner. Members of the Council need only take into account what in the minimum curriculum of five years should be the minimum of time and study devoted to the practical subjects. If they passed the recommendations of the Education Committee they would still allow the various bodies to adjust the time for the preliminary sciences as they might see fit. This would allow them to make the experiments which the University of Cambridge was doing in respect to these subjects. He did not think that it was desirable that there should be absolute However, he thought that the uniformity as to that. Council should at least say that in every case the last two and a half years of the medical curriculum should be occupied with the final subjects and two clear years should be given to nothing else. If the Council took that line it would be making a definite advance. He could not help thinking that overlapping was a difficulty, and that it was in the interests of the medical bodies that the recommendations of the Council should be framed in as simple terms as possible.

Dr. J. Y. MACKAY remarked that he proposed to substitute a motion in which the word "overlapping" did not occur.

The debate was again adjourned.

Penal Cases.

The Council considered penal cases for the greater part of the sitting.

The first was the consideration (adjourned from May 28th, 1909) of the facts proved against Mr. William John Watson.

The Dental Committee submitted a report in which it was stated that—

William John Watson has since the date of the last hearing of this case observed his undertaking to discontinue all advertising and to have no connexion with unqualified practitioners and no objection has been taken to the mode in which his profession has been carried on. The said William John Watson further undertakes not to advertise in future or to have any connexions direct or indirect with unqualified practitioners.

After deliberation in private,

The PRESIDENT said: I have now to say that the Council does not see fit to erase from the Dentists Register the name of William John Watson.

The next business was the consideration (adjourned from May 28th, 1909) of the facts proved against Charles Morgan in regard to whom the Dental Committee, at its meeting on Monday, Nov. 22nd, 1909, drew up a supplementary report. In that report it is stated that—

The committee find upon the evidence that Charles Morgan has since the date of the last hearing of this case observed his undertaking to discontinue all advertising and he further undertakes not to advertise in future.

The PRESIDENT, in delivering the decision of the Council, said: I have to announce that the Council does not see fit to direct the Registrar to erase from the Dentists Register the name of Charles Morgan.

The Council then took up the consideration (adjourned from May 28th, 1909) of the facts proved in the case of Thomas Torrens McKendry, registered as of 39, Wellwoodroad, Goodmayes, Ilford, Essex, M.B., Bac. Surg., 1894, R. Univ. Irel., who had been summoned to appear before the Council on the following charge as formulated by the Council's solicitor:—

That you have knowingly and wilfully on various occasions, and in particular on the 20th day of February, 1909, assisted one E. C. Dalby, a person not registered as a dentist, in carrying on practice as a dentist by administering anæsthetics on his behalf to persons coming to him for treatment, and that in relation thereto you have been guilty of infamous conduct in a professional respect.

The complainant was Dr. Victor Albert Chatelain.

At the close of the proceedings on Wednesday, May 28th, 1909, the PRESIDENT, addressing Dr. McKendry, said: "Mr. McKendry: The Council has postponed judgment till the November session, when you will be required to attend in person and to produce evidence, more particularly from medical colleagues in your neighbourhood, as to your professional good conduct generally in the interval, and in particular that you have not repeated the offence of which complaint has been made."

Dr. McKendry again attended.

Dr CHATELAIN, the complainant, was not present, but a letter was read from him in which he stated that he had no further evidence to produce against Dr. McKendry.

Dr. McKendry gave evidence on his own behalf. He put in three testimonials as to character from medical practitioners—viz., from Mr. A. J. Pattison and Mr. H. W. Garden of Goodmayes, and Dr. T. R. Atkinson of Chadwell Heath. He gave an undertaking not to administer anæsthetics for unregistered persons in future.

After deliberation in camera,

The PRESIDENT said: Mr. McKendry, the Council have taken note of the evidence you have produced and of your undertaking, and they have come to the decision that they do not see fit to direct the Registrar to erase you name from the Medical Register.

The Council then considered the case of Robert Wiseman Cunningham, registered as of King's Island, Tasmania, M.B., Mast. Surg. 1895, M.D. 1904, Univ. Edin., who was summoned to appear before the Council on the following charge as formulated by the Council's solicitor:—

That you abused your position as a medical man by committing adultery and eloping with Alice Mary Wigram, whose husband you had been attending professionally and while you were the medical attendant of the family, of which adultery you were found guilty by the decree of the Probate, Divorce, and Admiralty Division (Divorce) of the High Court of Justice, dated June 11, 1909, in the case of Wigram v. Wigram and Cunningham, in which you were the co-respondent, and that in relation thereto you have been guilty of infamous conduct in a professional respect.

Dr. Cunningham did not attend, nor was he represented. A letter was read from him in which he dealt with the matters referred to in the charge.

The Council briefly deliberated on the case in camera.

The PRESIDENT said: I have to announce that the Council have judged Robert Wiseman Cunningham to have been

guilty of infamous conduct in a professional respect and have directed the Registrar to erase from the Medical Register the name of Robert Wiseman Cunningham.

The Council then considered the case of Alexander Riddle Stower, registered as of 80, Shaftesbury-avenue, London,

W., "in practice before July 22, 1878."

The Dental Committee in their report on this case stated that the complainants were the British Dental Association. The committee further found that-

The said Alexander Riddle Stower was registered in the Dentists Register on July 19, 1879, as "in practice before July 22, 1878," and his address in the Register for the current year is 80, Shaftesbury-

and his address in the Register for the current year is 80, Shaftesburyavenue, London, W.

The said Alexander Riddle Stower has advertised his professional practice: (a) By advertisements carried by two sandwich men parading Oxford-street; (b) by the issue and circulation of leaflets and a calendar adorned with a female portrait; and (c) by advertisements in the public newspapers describing himself as "Stower's Dental Association," and asking for agents; (d) by various conspicuous notices on the front of 80, Shaftesbury avenue, where he carries on his profession, consisting of notices in six windows, a swinging sign at the entrance, a show-case illuminated with electric lights, and other notices both outside and inside the premises. These advertisements and leaflets are of a highly objectionable character. The said Alexander Riddle Stower stated that some of the advertisements complained of had been withdrawn, and that it was not his intention to employ sandwich men or to advertise in the newspapers in future.

Mr. Stowers who estanded personnelly before the Conneil.

Mr. Stower, who attended personally before the Council, was represented by Mr. E. H. Cannot. The British Dental Association was represented by Mr. Hart.

Mr. CANNOT addressed the Council on behalf of Mr. Stower, who, said counsel, regretted very much that he had by advertising overstepped the bounds of professional pro-priety. With regard to the advertisements by sandwich-board and in the newspapers, Mr. Stower felt that those were improper, and he discontinued them before complaints were made, and he would not again put them into use. With reference to the notices in front of his premises, Mr. Stower desired to have the kind consideration of the Council. He practised in a neighbourhood where he appealed to a particular class of patients and where there were a great many unregistered persons who in carrying on their profession made great displays of notices. If he were prevented from making the same display to let the people in the neighbourhood know he was carrying on the profession of dentist he would be crushed out of existence. He thought that matter was worthy the consideration of the Council.

Mr. HART, on behalf of the British Dental Association, said the Council had received only a limited assurance that a cessation of the advertisements which the committee found objectionable would take place. No assurance had been given that the issue of the leaflets and calendars - to take two marked instances—would cease. He did not think that professional etiquette was in a state of flux and varied with the neighbourhood in which a practitioner found himself. It was not open to Mr. Stower to come to the Council to ask for a hall-mark for the advertisements on his premises on the ground that he claimed to compete with unregistered men on the same lines that they adopted.

The Council then deliberated in private.

When the public were readmitted the PRESIDENT said: Alexander Riddle Stower, I have to inform you that on the facts proved in the report of the Dental Committee it has been held that you have been guilty of infamous or disgraceful conduct in a professional respect and that the Registrar has been directed to erase from the Dentists Register the name of Alexander Riddle Stower.

The Council then adjourned.

THURSDAY, Nov. 25th.

The Council resumed its sittings. Sir DONALD MACALISTER, the President, again occupied the chair.

Penal Cases.

The Council continued the hearing of penal cases.

The first considered was that of Frederick Morrish Pierce, registered as Mem. R. Coll. Surg. Eng. 1867, Lic. Soc. Apoth. Lond. 1867, Lic. R. Coll. Phys. Lond. 1868, M.D. Q. Univ. Irel. 1868, now of 50, Gordon-square, W.C., who was summoned to appear before the Council on the following charge as formulated by the Council's solicitor:

That, being a certifying surgeon appointed by the Secretary of State under the Factory and Workshop Act, 1901, you, for the purpose of evading the conditions under which you were appointed, which required the personal fulfilment of the duties prescribed by the Act (except under the circumstances and on the conditions laid down in the instructions issued by the Secretary of State), knowingly and wilfully employed another registered medical practitioner (viz., Edward Arthur

Burgess) to perform your duties; and that in order to carry out this system of evasion you committed the following offences, viz.:—

"(a) It being your duty as such certificates of fitness for employment in factories and workshops, and to grant certificates in suitable cases, you allowed the said Edward Arthur Burgess to conduct the examination for you and to sign your name to certificates that you had personally examined certain persons on certain dates named, and that they were fit to perform the work on which they were engaged.

"(b) It being your duty as such certifying surgeon to investigate and report upon certain accidents, you allowed the said Edward Arthur Burgess to visit the works and the injured persons for you, and you thereafter signed certificates that you had personally investigated the causes of such accidents and had personally investigated the causes of such accidents and had personally taken the evidence of such injured persons when in fact you had made no such personal investigation and had not personally taken such evidence, but the certificates were subsequently filled up by you upon information furnished to you by the said Edward Arthur Burgess.

"(c) It being your duty as such certifying surgeon personally to examine and certify persons employed in certain dangerous processes, you allowed the said Edward Arthur Burgess to examine such persons on your behalf and to insert the necessary particulars in the Health Register, which you afterwards signed and in other cases you signed the said Register in advance, the necessary particulars being afterwards filled in by the said Edward Arthur Burgess when he visited on your behalf.

"And that in relation thereto you have been guilty of infamous con-

And that in relation thereto you have been guilty of infamous conduct in a professional respect.

The original information on which this charge was based was laid before the Council by the Home Office

Dr. Pierce was unable to attend personally owing to

illness, but he was represented by Mr. Griffithes, solicitor. Mr. WINTERBOTHAM, the Council's solicitor, said it was not a mere question here of a breach of regulations. charge was a systematic conspiracy on the part of Dr. Pierce to mislead the factory inspector by doing what he knew was not permitted. It was a serious matter for the public, for whose protection these medical men were appointed. Dr. Pierce had charge of a district in Manchester. There was one factory in the district where dangerous trades were carried on. There was a health register which had to be signed by the medical man on the occasion of each of his visits. But in this register the number of Dr. Pierce's signatures did not correspond with the number of visits, and it was perfectly obvious they had been signed in advance because there were fewer visits than signatures. When Mr. Burgess was the duly appointed deputy of Dr. Pierce the former signed his own name in the usual and proper way. But Mr. Burgess paid visits for Dr. Pierce when he was not the authorised deputy, and the register showed three visits which were paid by Mr. Burgess where the particulars were filled in in his (Mr. Burgess's) handwriting and signed by Dr. Pierce in his own writing. Either before or after these visits Dr. Pierce must have written his signature. Other registers, said the solicitor, showed similar irregularities. With regard to the first charge the solicitor read certificates granted for the employment of young persons under 16 in factories, and declared that although they purported to be signed by Dr. Pierce the examination was made by Mr. Burgess, who signed Dr. Pierce's name. As to charge (b) the solicitor produced documents relating to several accidents in factories. At this time Dr. Pierce was living in London. Mr. Burgess visited the works and the injured persons and supplied the particulars to Dr. Pierce, who wrote them out the necessary papers in London and sent them, or at least some of them, to be posted in Manchester. The statement to which Dr. Pierce adhered his signature was this: "The cause of the accident was personally investigated by me at the works and the evidence of the injured person was personally taken by me." That was not correct, and the injured men if they had been called upon to produce the doctor's certificate in court in prosecuting a claim against their employers might have been placed in a serious position. The solicitor read some correspondence which took place between Dr. Pierce and Mr. Burgess, which he said showed that Dr. Pierce understood the gravity of the offence he was committing.

Dr. B. ARTHUR WHITELEGGE, chief inspector of factories, gave evidence as to the duties of certifying surgeons, and said that Dr. Pierce, who had been a certifying surgeon for 38 years, had now resigned. Up to the time these complaints were made Dr. Pierce had discharged his duties efficiently.

Mr. J. E. ASHWORTH, inspector of factories in charge of the Manchester district, also gave evidence, and, in answer to Mr. Griffithes, he said he did not regard Dr. Pierce's district as an exceptionally heavy one. It was about the average.

Do you find the registers, as a rule, are kept neatly?—

As a rule; if there are any irregularities we draw the doctor's attention to them.

Mr. Bodkin: The neatness of the registers would depend on the handwriting of the particular doctor.

WITNESS: Yes. We all know how doctors write.

Mr. E. A. BURGESS then gave evidence as to the various

allegations made in the charge. Mr. GRIFFITHES addressed the Council on behalf of Dr. Pierce. He read a declaration from his client in which it was stated that Dr. Pierce in 1872 was appointed to the position of certifying surgeon for South Manchester. Up to 1909 he held that post, and then resigned it on account of illhealth. During the whole of this period of service there never was any complaint against him until the one which had been brought forward to-day. He had inspected about 50 factories on an average in the week, and examined about 100 persons. It was necessary to do this work on five days of the week in order to meet the convenience of employers and employed. For several years he had suffered from gout. These attacks made him unable to discharge his duties as certifying surgeon. It was upon these occasions that he made arrangements with Mr. Burgess, and Mr. Burgess had been accepted as his substitute on former occasions. He was a thoroughly competent man, and in his (Dr. Pierce's) opinion it was a lesser evil to allow him to perform these duties than to cause great delays and inconvenience to employers and employed. Owing to deafness and the broken condition of his health he was unable to be present before the Council. He expressed his sincere regret as to the breaches of the regulations which had occurred. He appreciated the extent of his error for doing so, and he ought not to have allowed himself in his anxiety for the employers and employed to depart from the regulations. Mr. Griffithes said that these facts had been made in a statement that morning. He would be wanting in his duty if he attempted to say that Dr. Pierce was not doing wrong. There was a breach of the regulations of the Home Office which amounted to an irregularity, but it might perfectly well have been dealt with by the Home Office itself. He hoped to satisfy the Council that it was not a case for the exercise of their powers under the Act, and that his client had done nothing which would come within the description of infamous conduct. He went on to point out that Dr. Pierce had been living as much in Manchester as in London. He had rooms in Manchester where he received young persons for certificates and he had lodging where he resided. Surely as certifying surgeon he was at liberty to reside where he liked, provided he gave sufficient time to his duties and discharged them properly. Dr. Pierce had for 40 years been a member of the medical profession. He had broken the rule that he must personally discharge those duties. No doubt he had endeavoured to conceal this. It was only human to do so. The rule said that no standing deputy could be appointed without official sanction. At the same time the rule was not a reasonable one. It was obvious that serious inconvenience might be felt. There were duties to be performed by the certifying surgeon promptly almost every day. If the certifying surgeon were suddenly taken ill, and if the superintending inspector from whom he was to get the authorisation for the appointment of a deputy was not at hand, there might be a serious delay. He came now to what he regarded as the most important remark he had to make in Dr. Pierce's The man whom he employed for his duties was a favour. duly qualified medical man, who had before been authorised over and over again by the inspectors. There had been no delegation of duty to an unfit person. Mr. Burgess had assisted Dr. Pierce generally with the authorisa-tion of the factory inspector on previous occasions. No human being had been injured by the breach of the regula-The Home Office had got their returns. It was admitted that the passing of a mere piece of paper would have rendered regular what had been done irregularly. Could the Council, therefore, say that Dr. Pierce had been guilty of anything more than a breach of duty which might be forgiven to him? He asked the Council to believe that Mr. Burgess was exaggerating the extent of the unauthorised work which he did every day for Dr. Pierce.

Mr. WINTERBOTHAM briefly replied and laid emphasis on the fact that the correspondence of a private nature submitted to the Council showed that what had been done had been done deliberately by Dr. Pierce,

After deliberating in private,

The PRESIDENT, in announcing the decision of the Council, said: Mr. Griffithes, I have to inform you that the Council have judged Frederick Morrish Pierce to have been guilty of infamous conduct in a professional respect and have directed the Registrar to erase from the Medical Register the name of Frederick Morrish Pierce.

The next case was that of Robert Orr, registered as of Ceres, Fifeshire, M.B., Bac. Surg. 1901, Univ. Glasg., who was summoned to appear before the Council on the following charge as formulated by the Council's solicitor :-

That you were on October 1, 1907, convicted at the Sheriff Court of Fife at Cupar of the following offence—namely, of assaulting a constable of the Fifeshire Constabulary while engaged in the execution of his duty. And that you were on July 6, 1909, convicted of the following offence—namely, of breach of the peace and of assaulting James Arthur, Helen White or Arthur, Catherine Dempsey or Kerr, and Catherine Ouis. Catherine Quin.

Dr. ORR appeared in person but was not represented by counsel. He made a statement on his own behalf and said that in the case of the first conviction he had had extreme provocation. On the second occasion he had tried to intervene between some persons, and unfortunately he got the worst of it. He regretted that he had to appear before the Council.

The PRESIDENT: Were you sober on those occasions ?

Dr. ORR: Yes, sir, in both cases.

After deliberating in camera,

The PRESIDENT said: Mr. Orr, the Council have given careful consideration to the question of your convictions and the circumstances connected therewith, and have decided to postpone judgment thereon till the May session, when you will be required to be present, and it will be in your interest to produce on that occasion testimony of a satisfactory character from persons of position in the neighbourhood in which you live as to your conduct and character in the interval.

The Council then adjourned until Friday, Nov. 26th.

Brighton DISPENSARY CENTENARY. — The Brighton, Hove, and Preston Dispensary celebrated its centenary on Saturday last. The need of such an institution for the benefit of the poor of the town first impressed itself upon one Richard Phillips, a Quaker, and with the assistance of Dr. Tierney, afterwards Sir Matthew Tierney, physician extraordinary to the Prince of Wales, who afterwards became head of the medical staff, a meeting was called on Nov. 27th, 1809, which was presided over by the Earl of Chichester. At this meeting the following resolution was carried:-

That notwithstanding the liberal aid which medical gentlemen have extended to the poor, the establishment of an institution for administering to them advice and medicine gratis and for promoting vaccination would be attended with extensive advantage.

The first name of the institution was "The Brighthelmston Dispensary and Sussex General Infirmary" and for some years it had quite a nomadic existence. In 1847 the present building in Queen's road was erected, and at the jubilee of the institution a branch was formed at Hove, and a Samaritan Fund was opened to enable medical officers to order nourishment for patients. In 1884 the dispensary still further increased its scope of usefulness by opening a branch in the north part of Brighton and thus the institution became what it now is, the Brighton, Hove, and Preston Then the Hove or western branch had Dispensary. to be removed, having outgrown its original quarters, and larger and more up-to-date premises were erected at a cost of £6000. Some little difficulty was experienced in raising this sum, but the debt is now cleared off with the exception of sums involved by new works at the Hove branch in connexion with the centenary. These have been carried out at a cost of £2400, and the premises were opened on Nov. 27th in commemoration of the jubilee of the inception of the western branch and the centenary of the parent institution. A considerable sum still remains to liquidate this debt of £2400; while also an appeal is being made, again in celebration of the centenary, to increase the endowment of the Samaritan Fund, the amount of which has remained the same for nearly 50 years, during which period the population of the borough has increased from 70,000 to over 150,000. In connexion with this fund a sum of £2500 is being asked for. About £400 have already been collected.

THE LANCET.

LONDON: SATURDAY, DECEMBER 4, 1909.

The Housing and Town Planning

When the House of Lords dealt a second time with this very tar-reaching measure, which is of such vital importance to the health and comfort of so large a portion of the community, the Peers had no grounds for complaining of the spirit in which their numerous amendments had been considered in the House of Commons. The attitude of Mr. Burns was entirely conciliatory. Although he is not a man to regard half a loaf as better than no bread he was evidently anxious to see this useful measure, upon which he has expended such an infinite amount of trouble, inscribed upon the Statutebook, although the Lords had already deprived the Bill of not a little of its public utility.

Of the 181 amendments introduced by the Lords it was considered by the Government that not more than four or five were destructive of the principles and character of the Bill, and Mr. Burns, on reviewing the whole position, thought the Bill ought to pass. principle underlying many of the Lords' objections practically amounted to distrust of the Local Government Board as an entirely unprejudiced and final tribunal in connexion with the compulsory purchase of tand. It is difficult to obtain anything approaching perfection in most mundane affairs, but it seems to us that the least undesirable method of acquiring the land is that proposed by the Bill. It must not be forgotten that the lengthy and expensive method provided in previous Acts has been one of the reasons of the failure of such measures to bring about the objects for which they were passed, and if the hoped-for good results which are anticipated from the Housing Bill are to be realised simpler methods must be introduced. It cannot be denied that some of the procedures proposed in the Bill savour somewhat of bureaucracy, but, on the other hand, no responsible person has, so far as we are aware, brought any charges of bureaucratic methods against the Local Government Board in connexion with any of the multitudinous duties which devolve upon the officers of that department. What are known as provisional order methods are apt to lead to hesitancy in action and to the failure of the statutes which embody them as part of their machinery. As Sir Walter Foster. an old Parliamentary Secretary of the Local Government Board, explained, the proposal that an order for the acquisition of land should be laid on the table of both Houses of Parliament was "a subtle method of delay," and we are afraid that several of the amendments introduced by the Lords have about them a suspicion of intentional lives.

Another important amendment of the procrastination. Lords was that which proposed to allow the landlord an appeal to the local county court against a notice requiring him to execute certain works, but this Mr. BURNS would not accept, although he eventually agreed to a compromise to prevent a deadlock. But perhaps the strongest position which the President took up in relation to any point of the Bill was in reference to the clause, which has the effect of putting an end to further erection of back-to-back houses, but which permits the erection of tenements placed back-toback if the local medical officer of health certifies that the several tenements are so constructed and arranged as to secure effective ventilation of all habitable rooms in every tenement, a proviso which has apparently been introduced to get over the difficulty presented by blocks of model dwellings. The Lords endeavoured to obtain the same condition as regards back-to-back houses subject to certificate as to ventilation by the local medical officer of health, but, despite the representations from Leeds, where there is a local Act enabling back-to-back houses to be erected. and where the city council have expended over a million sterling in substituting good for bad back-to-back houses, Mr. Burns asked the House to reject the Lords' amendment. All fair-minded persons must feel a certain amount of sympathy with Leeds, but, nevertheless, the strong action of the Government will meet with the support of nearly all

In Part III. of the Bill the Commons had introduced a clause giving to the Local Government Board power to prescribe the general duties of the county medical officer of health, and also providing that these officers shall have a right to appeal to the Local Government Board against dismissal. We think that Mr. Burns was right to insist upon the retention of this clause. It was urged by speakers in both Houses that this provision was not necessary, but everyone really familiar with the work, either practically or through their annual reports, of county medical officers of health must feel that a provision of this nature will enormously strengthen the hands of these officers, who will now be brought, as Sir Walter Foster observed, into intimate relations with property owners. Having regard to the multitudinous interests affected by the Bill everyone anxious for better housing must have welcomed the fact that when the amendments of the Commons were finally dealt with in the Upper House the Lords evinced a conciliatory spirit and that, with one exception, practically all the points upon which the Commons had insisted were allowed to remain as they were, while as regards the outstanding difficulty with reference to the compulsory acquisition of land a compromise has, we are glad to see, been arrived at, and thus the controversy between the two Houses has been ended and the Bill awaits the Royal consent.

We cordially congratulate Mr. Burns upon his eminently statesmanlike conduct of this measure through the House of Commons, and although, as we have said, the Bill has been shorn of some of its strength it still contains provisions of the highest possible value which, if vigorously applied, should largely transform the conditions under which a large section of the relatively poor at present spend their lives.

Spinal Anæsthesia.

THE position which spinal anæsthesia is destined to hold in the field of surgery in the future is not yet clearly to be discerned. Its true claims, indeed, at the present day are not very easy to state with precision, for it is a comparatively new venture and its methods are not yet certain, nor are the opinions as to its value amongst those who are practising it by any means unanimous. The latest development of the method, one for which its author claims the attainment of absolute safety, has recently been shown in London, and this demonstration makes timely a few remarks upon the general question of anæsthesia without loss of consciousness, and upon M. Jonnesco's method in particular. This method, as many of our readers are aware, has for its distinguishing feature the addition to the analgesic drug of a certain proportion of strychnine. The neutral sulphate of strychnine is employed and it is added in amounts which vary from + milligramme to 1 milligramme. This is used with a quantity of stovaine varying from 1 up to 10 centigrammes, and the amount of liquid injected never exceeds 1 cubic centimetre at a time. The smaller quantities are used in young or feeble subjects and in the high injections, the larger quantities in adults and in the lower injections. The high injections are made between the first and second dorsal, the lower between the twelfth dorsal and the first lumbar spines. No care is taken to keep the patient's head raised above the level of his spine, if for the operation any such position as the Trendelenburg is desired; indeed, when an anæsthesia of the face, or skull, or neck is desired M. JONNESCO places the patient almost directly after the injection in a horizontal or head-down position. It will be seen, then, that the fears which have been hitherto held of this position, fears based upon an apprehension that the bulbar centres might be paralysed, are put aside as groundless, and that they are so M. JONNESCO claims to be the result of the addition of strychnine. He believes that this acts more quickly than the stovaine and stimulates the bulb so effectually that the subsequent paralysing action of the stovaine is unable to do harm. It is obviously too early to talk of absolute safety in connexion with a procedure that has stood the test of only about a hundred and twenty cases. But there is at least evidence to show that a proceeding, which was hitherto thought to be attended with certain danger, can at any rate be accomplished without disaster. In all matters of anæsthesia it is essential to insist upon a high standard of safety, and experience in the past has shown how great may be the expenditure of life involved by the too hasty adoption of a new method or drug as being absolutely safe. We need only refer to the wide and haphazard way in which ethyl chloride was at first used, and the many fatalities that occurred before the potency of and the proper way to employ the drug were finally recognised, to make clear how necessary it is that every development in anæsthetics should be approached with care and rigidly tested.

Spinal anæsthesia does not appear to be welcomed so warmly in Great Britain as in some of the continental countries, and we believe that the main reason is that there is less cause to be dissatisfied with the use of general

anæsthetics here than there is abroad. We talk a good deal of our defaults in the matter, but we appear to be ahead of many of our neighbours. Whether it is because in these islands chloroform was first used and nitrous oxide discovered, while ether, introduced by a man of the English-speaking race, was given a ready acceptance whether it is this inheritance or for some other reason, the fact remains that in Great Britain we have a number of medical men devoting their professional efforts entirely, or almost entirely, to the study and practice of anæsthesia. This is not the case on the continent, where the administration of anæsthetics is more often left in the hands of the comparatively inexperienced, while the operating surgeon is held responsible for the results. The requirements of modern surgery make such a condition of affairs very dangerous, and this appears to be felt in Roumania, for M. JONNESCO has alluded to the anæsthetist as a person "often inexperienced and never responsible." This being the case we can well understand the eagerness with which surgeons in Roumania have welcomed a method of producing anæsthesia that they can take into their own hands. And the Roumanian surgeons seem to have a more docile material to deal with than the British patient is likely to be, and just as in other affairs of life morals have been said to be merely a "matter of geography," so there may be a racial side to the administration of anæsthetics. We were awakened to this point of view by the very striking slides illustrating M. Jonnesco's lecture before the Royal Society of Medicine. that appeared usual and unobjectionable to the patient in Bukharest would be regarded as intolerable by the average hospital patient here. Now may there not be something of the same difference between Roumanian operators and anæsthetists and British operators and anæsthetists in our estimation of the absence or presence of pain? May it not be that the patient under spinal anæsthesia with occasional evidences of discomfort, if not of actual pain, would make the British surgeon uncomfortable and dissatisfied in a manner that does not so easily happen to his confrères abroad? The same racial differences affect the patient too, and we suspect that an amount of mental anxiety and distress may be experienced by the conscious patient which would be strongly objected to by our own countrymen and women, even if they felt no physical pain. M. JONNESCO claimed it as one of the great advantages of his method that consciousness is not abolished. There are, however, certainly many persons who would prefer to know nothing of what is going on whilst they are undergoing an operation, even though there are, no doubt, some who dread losing consciousness.

There are some fields of practice in which the value of spinal anæsthesia would be, it appears to us, immense. In naval and military work, for instance, the simplicity and portability of the apparatus required and the possibility of being able both to anæsthetise the patient and to operate single-handed would be of great advantage. Similarly, for emergency operations in country districts to be able to employ this method would often be of the highest service. Moreover, if its claims to be as safe as general anæsthesia in good hands should be established, there will doubtless be some patients who will

prefer its employment in their case. For these reasons, then, it is a method well worthy of prolonged study, and we shall note with interest its records during the next few years.

The Odontological Collection of the Royal College of Surgeons of England.

By a happy coincidence the Council of the Royal College of Surgeons of England was able, while celebrating on Dec. 2nd the jubilee of the right of the College to grant Licentiateships in Dental Surgery, to open for inspection the most extensive and valuable collection of specimens ever brought together to illustrate the anatomy, evolution, and pathology of the teeth. The coincidence was even happier than most of those who took part in the opening ceremony were aware, for the movement which induced the College to acquire the power to grant dental diplomas also led to the foundation and expansion of the collection now entrusted to the care of the College. That movement was set on foot some 55 years ago by the leading dentists of England, who were dissatisfied with the status and conditions of their profession. They combined to petition the Council of the Royal College of Surgeons to secure their status and to confer a diploma—a petition which was granted in 1859 after four years of consideration and negotiation. Out of the combination thus formed grew the Odontological Society of London, a designation changed to that of Great Britain at a later date. Although drawn together for the domestic legislation of their calling the new society, in the words of its first president, Mr. SAMUEL CARTWRIGHT, F.R.S., had as its main object the "collection and diffusion of knowledge relating to their profession"; and the scientific as well as practical nature of its published Transactions quickly raised it to a prominent position. In the second year of its existence, as a matter of chance rather than of design, the society began to accumulate specimens as a means of perpetuating as well as diffusing knowledge-a practice that was soon recognised to be of great value for the progress of knowledge. In 1872, 16 years after the society was founded, about 850 specimens had accumulated in what had gradually come to be called "the museum," and a printed catalogue of the collection, making 77 pages, was prepared by the curator of that date-Mr. CHARLES S. Tomes—and published for the society by Messrs. WYMAN and Sons. In 1882 a second edition was prepared by Messrs. W. and H. Weiss under the direction of the curator, Mr. S. J. HUTCHINSON. The number of specimens then amounted to 2000. A third edition was prepared by the present honorary curator, Mr. J. F. COLYER; the number of specimens—acquired by purchase in some cases, but mostly as donations from members of the society—then numbered over 4000. Under Mr. COLYER'S care the collection grew rapidly in size and value. The cases alone in which the specimens were shown had cost the society over £1500. The collection by this time represented every branch and form of dental activity; it was a scientific collection in the strict meaning of the word. Many of its specimens were unique and could not be purchased or

acquired to order, and from a monetary point of view it must have cost a large sum.

In 1907, when the Odontological Society became merged in the Royal Society of Medicine as its Odontological Section, many of those most interested in the future of their museum began to realise that the bantling they had nurtured was beginning to assume rather too large a size for the space and finance at their disposal. The collection had reached a point when it became of national importance and deserved a place where it might be consulted by all medical men; so the dentists approached the Council of the Royal College of Surgeons of England through the members of their own council, of which Mr. J. H. MUMMERY was the President. Sir HENRY MORRIS, Bart., was then President of the College, and Mr. HENRY T. BUTLIN, now President, was the chairman of the Museum Committee. All these entered into pourparlers in a public spirit. It was found that in order to secure a suitable room for the exhibition of so large a collection it would be necessary to make considerable structural alterations in the College Museum, involving an outlay of some £600 or £700, and that it would require about £200 a year for maintenance. Negotiations between the Councils of the College and of the Odontological Section were brought to a successful issue in June of the present year, the College accepting the collection as a trust, undertaking to maintain the collection in its entirety and to permit certain privileges of access to those who wish to carry out researches in connexion with To secure -a maintenance of the close the collection. relationship which had existed between the collection and the Odontological Section of the Royal Society of Medicine, the original owners accepted the right to appoint five trustees to inspect the collection from time to time, and also to nominate an honorary curator to assist the conservator of the College Museum in arranging and improving the collection. As soon as negotiations were completed steps were at once taken by the Council of the College to carry out the necessary structural alterations in the Museum and other preparations which have been now carried out most successfully according to plans prepared by Mr. E. C. FRERE, A.R.I.B.A. The collection was removed from the premises of the Royal Society of Medicine in Hanover-square to its new quarters in Lincoln's Inn-fields by the servants of the College—without a single breakage—where it is now installed. The new odontological room, more commodious than the old, has three large windows which open on Portugal-street, and is also well provided with artificial light—an advantage it enjoys over the rest of the College Museum. A rearrangement of the specimens was necessary in order to admit the addition of the large collection of odontological specimens—both anatomical and pathological—from the College Museum. The specimens added from the College Museum, although they form a minor part of the collection, constitute one of the most valuable sections. The present arrangement of the odontological room must be regarded as a provisional one, for it is expected that at least a year will be necessary to classify and catalogue the collection in a permanent form. The wealth of the material which has been gathered to

secure a sound foundation for the progress of odontological knowledge is already very evident. The first case, which is intended to serve as an introduction to the whole, contains the specimens prepared by HUNTER to illustrate his classical work "On the Natural History of the Human Teeth," 1771the teeth he burned to demonstrate the arrangement of enamel, the teeth he transplanted, the teeth at one time stained by madder-now, alas! the colour is gone-to show the manner in which they grew. It is most fit that the collection should have such an introduction, for no man did more than HUNTER to place the practice of the dentist on a scientific foundation. The second case illustrates the anatomy and development of the teeth, many of the specimens being preparations by HUNTER. The third case contains specimens illustrating the anatomy of the jaws and mechanism of mastication. The fourth and fifth cases contain a most extensive series of specimens illustrating the eruption of the teeth, many of them donations from Sir John Tomes and from Samuel Cartwright, F.R.S. The sixth case is devoted to the dentition of the various races of mankind The seventh to the thirteenth cases are set aside to illustrate the comparative anatomy of teeth. The large section given to comparative dental pathology is a complete illustration of the numerous and important contributions made to the Transactions of the Odontological Society during the last 50 years. Every conceivable—some of them almost inconceivable-abnormality in the size, shape, arrangement, eruption, and implantation of the teeth is richly illustrated. Malformations and diseases of the jaws, diseases and tumours of the teeth, have their full representation Amongst the most interesting sections are those devoted to dentures, artificial teeth, and dental instruments. The evolution of the plate, of the artificial tooth, and of the extraction forceps tells a story of rapid development.

We publish this week a letter from Mr. R. CLEMENT LUCAS urging the creation of a research and teaching demonstratorship in connexion with this dental museum "for the modest sum of £10,000." If such a modest sum be forthcoming there can be no doubt that it would be well expended in the scientific tilling of such a rich field as the new dental museum affords. It must be remembered that the collection, though excellent, is not complete, and it is to be hoped that the public spirit which has made it what it is will ensure its ultimate perfection, for it is a national collection brought together by the Odontological Society and maintained by the Royal College of Surgeons for the use of every serious student who desires by study and research to improve the means for securing the health of the teeth. To a very considerable extent that also implies the happiness of a nation.

PROPOSED COTTAGE HOSPITAL FOR ST. AUSTELL (CORNWALL).—A public meeting was recently held at St. Austell, when it was unanimously decided to erect a cottage hospital for the town and district. The late Mrs. Doidge has bequeathed £500 towards the building provided the institution is established by July, 1911, and the chairman remarked that with such a substantial donation it was practically certain that the hospital would be completed by the specified date.

Annotations.

"Ne quid nimis."

THE SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE, LONDON, 1913.

A MEETING of the National Committee for Great Britain and Ireland of the International Congress of Medicine was held at the rooms of the Medical Society of London on Thursday, Nov. 25th, Dr. F. W. Pavy, F.R.S., President, in the chair. There were present Sir William S. Church, Bart., Sir Thomas Barlow, Bart., Sir Dyce Duckworth, Bart., Sir John Tweedy, Sir Malcolm Morris, Sir Shirley Murphy, Professor W. Osler, Mr. Butlin (President of the Royal College of Surgeons of England), Dr. D. Ferrier, Deputy Inspector-General J. J. Johnson, R.N., Dr. J. F. Gordon Dill, Dr. W. P. Herringham, Dr. A. E. Garrod, Dr. Donald W. C. Hood, Dr. J. F. Goodhart, Mr. W. H. H. Jessop, Dr. StClair Thomson, Mr. Hunter F. Tod, Mr. L. Eliot Creasy, the honorary secretaries (Dr. Clive Riviere and Mr. D'Arcy Power), and others. Mr. D'Arcy Power read a report on the Sixteenth Inter. national Congress of Medicine, which was held at Budapest at the end of August. The British contingent numbered 94, and the meeting was said to have been very successful and to reflect great credit on the executive committee. The report pointed out that the Congress had decided to appoint a permanent committee consisting of the presidents, the secretaries, and some members of the various national committees. The permanent committee was not to number more than 50 members and there was to be a secretary paid out of the funds of each forthcoming congress. The offices of the permanent committee were to be at The Hague. Dr. Pavy notified to the meeting the acceptance of the invitation of the National Committee for Great Britain and Ireland, with the approval of His Majesty's Government, to hold the Seventeenth International Congress in London in the year 1913. It was thereupon proposed by Sir John Tweedy, seconded by Sir Dyce Duckworth, and carried unanimously, that a general committee be formed to undertake the organisation required for the meeting of the Congress in London. It was further proposed by Sir William Church, seconded by Mr. Butlin, and carried, that the National Committee for Great Britain and Ireland be dissolved and immediately reconstituted as the general committee for this purpose, the general committee having power to add to its numbers. It was decided that the first meeting of the general committee should be held in February next, the officers of the National Committee holding their present positions until new officers were nominated and elected. Professor Osler moved that it be an instruction to the general committee to see that the colonies are adequately represented in all matters connected with the Seventeenth International Congress of Medicine. The meeting ended with a vote of thanks to the Medical Society of London for the use of the meeting room. Mr. D'Arcy Power and Dr. Clive Riviere will be glad to receive the names of those who are interested in the forthcoming Congress as soon as possible.

THE MEDICAL MAN AS SOCIAL REFORMER.

In a paper under the above heading which appeared in the Edinburgh Medical Journal of November Dr. Lachlan Grant advocates some sweeping reforms in medical service generally, with perhaps special attention to public health. He begins by calling attention to the fact that of recent years the medical man has become recognised as "an all-important factor in the life and progress of the people," and goes on to refer to the duty laid upon medical men of

improving the public health and social conditions in general. But he reminds his readers that medical officers of health are neither ubiquitous nor all-powerful and that the private medical practitioner in most cases cannot afford to jeopardise his bread and butter by agitating for the removal of evils for the continuance of which public apathy, private interests, and the fear of raising the rates are responsible. All this has been said before, but it will bear repetition if there is no exaggeration. From this point Dr. Grant is led to his first thesis, that "there should be a reorganisation and a coördination of all medical and public health activities, dealing with all hospitals, dispensaries, factories, workshops, warehouses, mines, railways, ships, hotels, schools, restaurants, and private dwellings." Further, "all hospitals, infirmaries, convalescent homes, and nurses' training schools and institutions should be taken over and kept up by the public authorities." and there should be established "a separate independent governmental department for the administration of public health, with a political chief of the dignity of a Cabinet Minister." This is a programme of destruction and construction more complete than is projected by the reports of the Royal Commission on the Poorlaw, and we are sure that the country is not yet ready for the complete nationalisation of the medical service, however clear it is that some drastic reforms of existing methods are imminent. The establishment of a Minister of Public Health is much to be desired, but until a Government arises which will have the courage to avoid wasting its time upon what a sixteenth century author (Erasmus, if we remember rightly) called "vermiculate disputations," we doubt if such a desirable consummation will be effected. That various social reforms are much needed is a truism obvious to everyone; neither is their need confined to this country alone. The exodus from the country into the towns, the stress of modern industrialism, the decline in the birth-rate, and the ominous fact that the most prolific portions of the body politic are the wastrel and the unskilled worker, are signs of decay which are to be seen in almost every European country. But although the subject is so vast that a remedy cannot be formulated which will at once cure all the evils in evidence, yet that is no reason why those in power should not seek some means for, at all events, a commencement of improvement, and for that commencement such suggestions as can be found in Dr. Grant's paper and elsewhere merit consideration. They should make people think.

AN "ILLUMINATING" SOCIETY.

THE formation of a society which, in the words of Professor Silvanus Thompson, has been founded "to bring together all those who are interested in the problems, practical and theoretical, of the art of directing and adapting light," will be welcomed. The rapid development in methods of illumination during the last few years has made for both the convenience and inconvenience, the comfort and discomfort, of man. The race for a supreme light has been directed to producing intense illumination without regard to the healthy requirements of the eye. The brilliancy of the artificial light has been considerably increased, but little attention has been given to new means of diffusing it. When the source of light is concentrated at a given point the eye shrinks at the glare and dazzle of the rays, whereas if the intensity of such a light could be distributed the result would be pleasing and comfortable. Questions of in-door artificial lighting also are questions of considerable hygienic importance, and yet little has been done to help us in the choice of a light in relation to its effect upon the eyesight. So far we have been at the mercy of the lamp-maker and the fitter, who as

often as not exhibits complete ignorance as to the best situation for a lamp. The subject has long called for investigation, and as the work of inquiry proceeds it will not be surprising if certain disorders are definitely traced to faulty methods of illumination. We wish success to the Illuminating Engineering Society, which held its first meeting at the Royal Society of Arts on Nov. 18th last, and the next meeting of which takes place on Jan. 11th, when a discussion on "Glare, some of its Effects and Causes," will be opened by Mr. J. H. Parsons.

HOOK-WORM DISEASE IN THE SOUTHERN STATES OF AMERICA.

THE announcement made recently that Mr. John D. Rockefeller had given £200,000 to be employed in the effort to extirpate hook-worm disease from the Southern States has drawn attention to the extreme prevalence of the disease in that portion of the United States.1 Few persons on this side of the Atlantic have any conception of how great a scourge the small nematode—ankylostoma duodenale—is in the southern part of North America. It is a somewhat curious fact that the negroes of the Southern States, although it is suspected that they were instrumental in introducing the disease, do not suffer to any marked extent from it. They seem to have acquired immunity. It is the poorer white inhabitants of certain districts of the South who are notorious for their shiftless, lazy habits, who seem to be without energy and without vigour-so much so, indeed, that they are colloquially referred to as "mean white trash "-who are the sufferers. Their unfortunate physical and mental condition is largely ascribable to the effect of ankylostomiasis, or, as the malady is termed in America, uncinariasis. Dr. Charles Wardell Stiles, chief of the Division of Zoology of the Hygienic Laboratory of the United States Public Health and Marine Hospital Service, has stated that in his opinion the inferior mental, physical, and financial condition of these poor whites is an important pathological factor. An American correspondent writes on the subject as follows:-"The extent to which the disease prevails is a matter of some surmise. It has been estimated that 700,000 of the inhabitants of Puerto Rico are carriers of the hook-worm, and that 90 per cent. of the total population of the island are infected. Some observers in South Florida have stated that a like percentage of the population of that state suffer from the same cause, while other American statisticians assert that at the present time there are 2,000,000 southerners. mostly children, afflicted with hook-worm disease." The prevention of the disease is not difficult in theory, but in practice it will undoubtedly prove by no means easy if there is anything like the prevalence indicated. The main measure to be adopted, which if effectively carried out may be sufficient in itself to stamp out the disease, is careful disposal of excreta. It is known that the ova of the parasite although deposited in the human intestine do not develop there, but pass out with fæcal matter and develop in the soil. Therefore if fæcal contamination of the soil be prevented ankylostomiasis should be extirpated. But to carry a campaign of this kind to a successful issue requires not only a very large sum of money, but necessitates on the part of those to whom the work is entrusted the employment of infinite care and perseverance. The habits of shiftlessness and indifference to the laws of health are doubtless thoroughly ingrained in the people of the Southern States of America, and to remove their prejudices and to induce them earnestly to cooperate in measures of sanitary reform will be a task of unusual magnitude. However, the names of the commission now

chosen to conduct this crusade should be a sufficient guarantee that, in any event, the question will be approached with a full knowledge of its difficulties and also of the best means to overcome them. Although not perhaps material to the matter, it is interesting to note that Stiles and Looss now hold that the American species of hook-worm should not be classed with uncinaria and the name of necator Americanus has been suggested. With regard, too, to the causation of the anæmia of ankylostomiasis opinions differ somewhat. As to whether it is produced by blood abstraction, to venom secreted by the head glands of the parasite, or to secondary infection. Dr. L. W. Sambon in 1908, referring to these points,2 was inclined to favour the microbic theory of causation. Stiles, discussing the same points in Osler's "Practice of Medicine" has said: "The constant drain on the system by the sucking of blood can no longer, as formerly, be regarded as the chief cause of the anæmia. Through the wounds bacterial infection may take place; the wall of the bowel may be much thickened and degenerated, so that its functions are interfered with; and lastly, it is quite possible that toxic substances are produced by the parasites which act injuriously upon the patient." The Rockefeller Commission should clear up some of the obscure features in connexion with the disease.

THE INCREASE OF POPULATION IN ENGLAND AND WALES.

THERE is something apparently paradoxical in the statistical fact that, in spite of the marked and steady decline of the birth-rate in England and Wales, the actual number of births continues to increase. The obvious explanation of this fact is, however, that the excess of births over deaths in this country is still causing a steady and rapid increase of population, notwithstanding the decline of the birth-rate. Moreover, the decline in the birth-rate has been accompanied by a marked and steady decline in the death-rate, which has to some extent counterbalanced the effect of the reduced birth-rate upon the increase of population. During the five years 1871-75 the mean annual birth-rate in England and Wales reached its maximum, and was equal to 35.5 per 1000; the mean death-rate during the same period was 22 0 per 1000. Thus the annual natural increase of population during this quinquennium was equal to 13.5 per 1000. During the most recent completed quinquennium, 1901-05, the annual birth-rate had fallen to 28.1 and the death-rate to 16.0 per 1000. Thus the mean annual natural increase of population, which had been equal to 13.5 per 1000 in 1871-75, did not fall below 12.1 per 1000 during the five years 1901-05. While, however, the rate of natural increase of population, notwithstanding the marked decline of the death-rate, showed a distinct decrease during the 30 years referred to, the annual number of registered births continued to increase, owing to the constant additions to the population by excess of births over deaths. During the five years 1871-75, with a birth-rate of 35.5 per 1000, the average annual number of births registered in England and Wales did not exceed 831,735; whereas in the five years 1901-05, although the birth-rate had fallen to 28.1 per 1000, the average annual number of registered births had increased to 938,654. Similarly, notwithstanding the decline during the 30 years of 1.4 per 1000 in the annual rate of natural increase of population, the actual numbers annually added to the population, which averaged 317,185 during the five years 1871-75 had increased to 404,341 during the last completed quinquennium, 1901-05. Thus

while both the birth-rate and the rate of natural increase of population had distinctly and continuously declined during the 30 years, the number of registered births and the amount of natural increase of population continued steadily to increase. It is interesting to note that while the mean-rate of natural increase of population, by excess of births over deaths, was equal to 12·1 per 1000 during the five years 1901-05 in England and Wales, it was during the same period equal to 14·3 in the German Empire, 14·2 in Denmark, 14·1 in Norway, 10·7 in Italy and in Belgium, 10·6 in Sweden, 10·4 in Switzerland, 9·2 in Spain, and only 1·6 per 1000 in France. The population of England and Wales is therefore still increasing, by excess of births over deaths, at a greater rate than that of most of the Continental States.

SARCOMA FOLLOWING FRACTURE OF THE FEMUR.

In the October number of the International Journal of Surgery there is reported by Dr. Norman P. Geis of Brooklyn a case in which sarcoma followed a fracture of the femur. The patient was a boy aged 17 years. He was born in Russia and worked at a rubber factory. Five years previously he had undergone an operation in Russia, but he was unable to give much information about it. All that he could say was that he had had a large swelling on the right side of the lower jaw and that something had been wrong with the bone. At the site of the operation was a scar one and a half inches long. For six months before his accident he had had pain in the right leg extending from a little above the middle of the femur to the instep. The pain was sharp and shooting but intermittent in character. He saw a medical man who prescribed a liniment which seemed to give some relief from the pain. Exercise did not appear to cause any increase of the pain. On Dec. 2nd, 1908, he was pulling a truck when he slipped and fell flat on the abdomen. He immediately felt severe pain in the right thigh and found that he could not use it. He was seen by two medical men who diagnosed dislocation of the hip. Four days later he was treated at the Williamsburg Hospital, where a diagnosis of fracture of the neck of the femur was made, and he was treated with a plaster-of-Paris splint. Nine weeks later the splint was removed, good union was found to have occurred, and he was able to walk about the ward on crutches. Soon after the removal of the splint he noticed a slight swelling at the site of the fracture. This slowly enlarged, and pains like those he had felt formerly appeared, but were more acute, especially at night. The thigh continued to enlarge until when he was first seen by Dr. Geis, it measured 10 inches more than the left immediately below the hip. The thigh was tender on pressure, and the superficial veins were well marked. The swelling was most pronounced anteriorly and externally, and the glands in the right groin were swollen. The general condition of the patient was poor. A skiagram was taken and it showed a sub-periosteal sarcoma. A sufficient number of cases have now been published to make it practically certain that some causal connexion does exist between fracture and the appearance of a sarcoma, but it is difficult to give any very satisfactory explanation of this association. It has been suggested, on the one hand, that the bone has broken because of the previous presence of a sarcoma at the site where the bone has given way, but in many of the cases a very definite interval has occurred between the infliction of the injury and the earliest sign of tumour. Another explanation that has been given is that the mere injury is sufficient to incite the formation of a sarcoma. In the case which we have reported the presence of the pain existing in the limb for six months preceding the

fracture suggests strongly that some abnormal process had then already commenced, and it would be difficult to disprove the suggestion that this abnormal condition was even then sarcomatous. The prognosis of sarcoma of the thigh occurring in these circumstances is very bad, for if amputation at the hip be performed recurrence is almost certain.

CLEAN SHAVING AS A PROPHYLACTIC MEASURE.

A FREQUENT correspondent writes to us that he has noticed that clean-shaven persons appear to enjoy a kind of immunity from the common cold, "at all events," he says, "they seem to be attacked less frequently than those who cultivate the moustache." He suggests that the daily shaving may prove an antiseptic process which regularly removes pathogenic organisms which otherwise lurk and grow in the moustache. It is, of course, conceivable that the moustache affords a nursery for organisms, especially as it must be moist, and occupies a position close to the breathing intake. Further, it is reasonable enough to assume that the daily shave does, as a matter of fact, amount to a regular antiseptic routine. The moustache is obviously difficult to clean thoroughly and it is open to doubt whether mere washing completely sterilises it. Even if that should be the case, the moustache would soon be full of organisms again, as it is constantly exposed to a stream of air which is rarely sterile. According to our correspondent's view, however, there should be a similar immunity enjoyed by women unless we lay stress on the fact that no method in their toilet amounts to the drastic cleansing process of the razor and soap. Moreover, fine downy hair is natural to the lip of women and children. The observation is an interesting one, and its author sends some confirmation of his view in the shape of details of cases in which the subjects, while regular sufferers from common cold when they wore a moustache, seem to have enjoyed a comparative immunity since they have shaved clean.

PHYSIOLOGICAL EFFECTS OF TRAINING ON THE SOLDIER.

A FOURTH report by the War Office Committee on the Soldier's Food, Training, and Clothing, presided over by Sir Alfred Keogh, has recently been issued, containing the results of experiments on marching in the new Mills-Burrowes equipment, as compared with the equipment hitherto in use. In the committee's second report it had been urged that progressive training in marching was most necessary for the recruit; and (as one important point) that orders should! be given to the men to open the jacket and shirt in warm weather, so as to allow free evaporation. In the new pattern, even in full marching order, the belt can be unbuckled, thus avoiding constriction of the body; the water-bottle and haversack have no body-straps, and all the ammunition is carried in the belt and side straps, which are arranged as braces; the chest is therefore as free from constriction as possible. Details are now given of the amount of moisture lost by the body and gained by the clothing, with the old and new patterns of equipment respectively; the advantage is seen to lie with the new pattern, the loss of moisture from the body and its increase in the clothing being on an average less with the new than with the old equipment; on every trial (but one) the air temperature was higher when the new than when the old equipment was tried. The new pattern is slightly heavier than the old by nearly two pounds in drill order, but by only half a pound in full marching order, although 50 more rounds of ammunition are carried. The jacket can be easily opened and the shirt exposed in the new pattern; in the old the belt and straps do not i

allow of this, and the bandolier causes constriction of the chest, which is objectionable. The new equipment can be thrown off, or put on, with one simple movement, so that advantage can be taken of any short halt to give complete relief to the chest; this is impracticable with the old pattern. One drawback is mentioned in the new as well as in the old pattern: it fits close to the back, causing excessive perspiration; this might be obviated. The committee considers that the present clothing of the soldier is suitable for his work, except that there appears to be "a tendency to increase the height and tightness of the collar"; this, of course, is a 'reversion to type" from the low open collar that was adopted as a result of South African experience. The committee also thinks that the full equipment is comfortable and not excessive in weight for a properly trained man. The field-service cap is sufficient protection for the trained man accustomed to exposure to sun, but for most members of the Territorial Army it thinks a light slouch hat would be more suitable. It again urges that "it be an instruction to officers commanding that the order shall be given to men on the march in warm weather to open the jacket and shirt," as it has found that this is not generally the practice; presumably the feeling for 'smartness" still stands in the way of this desirable innovation. This appears to be the committee's final report. It warmly acknowledges the work of the secretary, Captain L. E. L. Parker, R.A.M.C., who conducted experiments in the field and in the laboratory in addition to his secretarial duties. We think acknowledgment is also due to the committee for its valuable work, and especially to the member who did the experimental marches of 14 miles on several occasions in full marching order under a blazing sun.

"NEURASTHENIA QUERULATORIA" AND ITS RELATION TO TRAUMA.

So much attention is directed in these days to the question of industrial compensation, and its application has been so much widened, that it is important for medical practitioners to keep abreast of current doctrine and practice in regard to this most difficult subject. In Germany and Austria in particular, if we are to judge by the output of monographs and articles, and even journals, devoted to the subject, litigation over accidents and the sequelæ of accidents has become annoyingly common. Several recent articles have drawn attention to an all-important, if at first sight somewhat subtle, distinction between the sequelæ of an accident and the sequelæ of the law relating to accidents, between a traumatic neurosis and a "fight-for-compensation" neurosis, to give a literal rendering of the German expres-We may illustrate the point by a case from an interesting communication by Dr. Kurt Mendel in the Neurologisches Centralblatt for November. In the year 1905 an apparently strong young adult received a trifling accident in a locksmith's workshop, and so-called traumatic neurasthenia followed. Although medical opinion ere long certified that he was fit for work again, he never ceased complaining, and the idea of getting further compensation from his employers—in addition to what had been voted him -never was absent from his mind. He left the locksmith's trade and became an employee of a railway company, where he worked for 10 hours a day in a perfectly satisfactory manner. On July 17th, 1907, and again on Oct. 14th, 1907, he had accidents in the engine yard, but in spite of these he wrote to the railway company that he was quite well in every way. The date of this letter was Oct. 23rd, 1907. At this time, be it observed, he was still claiming compensation from his original employers, but when in the summer of 1908 the futility of expecting further

payment from that source was impressed on him his methods changed, and on Oct. 25th, 1908, he wrote a letter to the railway company in which he complained of the usual symptoms, and attributed everything to the two railway accidents. Examination in May of this year showed him to be suffering from tremor of the eyelids, tongue, and hands; the whole body was hypalgesic, the reflexes increased; the mental condition was one of constant querulousness and discontent. When he was offered light work in a garden he refused. saying that he was not yet a lunatic. Dr. Mendel considers this an instructive instance of what might be called neurasthenia querulatoria, in which a characteristic mental and physical neurasthenia supervenes not as the direct result of an accident, but because of litigation pending, with its alternate hopes and disappointments. After the first accident the patient recovered so completely as to be able to work 10 hours a day, and on his own admission he was fit for this work, but the idea of obtaining further compensation remained as the provoking cause of a whole train of mental symptoms which soon expressed themselves in bodily signs. In the same article other cases, equally illustrative, are quoted. Needless to say, treatment of such patients is most unsatisfactory. Some make it a rule not to treat accident cases until litigation is at an end. Dr. Mendel says the only way to make them useful members of society again is to recommend the cessation of all payment, and this plan he has unhesitatingly adopted in a number of cases with most encouraging results.

DEATHS FROM WILD ANIMALS AND SNAKES IN INDIA.

It is a remarkable fact that in spite of the opening out of the country by railways and roads and the clearing of jungle tracts the number of persons killed by wild animals in British India does not show any decrease; in fact, last year the figures rose to 2166, an actual increase of 200 in comparison with the deaths in 1907. In Bengal tigers killed 100 more persons, while in the Central Provinces and Berar the increase was 64. In the Chanda district one tiger alone killed 19 people before it was shot, while panthers and bears accounted for 95-practically double the total of the preceding year. In the United Provinces the mortality was 194 against 159. This increase was due to the ravages of leopards and wolves in the Kumaon and Fyzabad divisions respectively. Leopards seem to abound in Kumaon, and one particularly given to man-eating was still at large at the close of the year, though a reward of Rs. 500 had been offered for its extinction. In Bahraich wolves have become so dangerous that special measures have been taken for their extermination. The number of cattle killed was 87,697 -a decrease of some 1200. In the United Provinces, however, there was a remarkable rise; and in the Almora district this is said to have been due to the wholesale destruction of game, which has resulted in a serious diminution of the natural food-supply of tigers and leopards. It may be noted that in the Kumaon district wild dogs do great mischief, though the Forest Department has entered upon a campaign against them. Evidently there is much work still for the sportsman in various parts of India and there is no necessity to accept any plea for the preservation of the tiger, leopard, or wolf. As to the deaths from snake-bite, the decrease was very satisfactory, the numbers falling from 21,419 to 19,738. This total was the lowest since 1897, and every province shared in the decrease. The official report states that the success of the Lauder Brunton treatment is on the whole encouraging, although the usual uncertainty as to the identification of the snake in the majority of cases still continues. The Commissioner of Agra

reports that the villagers are afraid of the lancets, while the Magistrate of Shajakanpur states that there is a general complaint that the lancets are not sharp enough to make proper incisions where the skin is hard. The results generally reported, however, are such that Government consider they justify further efforts being made to popularise the treatment. It is to be hoped that these will be made, for the application of the lancet and permanganate of potash is simple in the extreme, and the most ignorant person can use the method. It is interesting to note that in Burma the lancets were used with some success in cases of cattle bitten by snakes, and the civil veterinary department might report whether this kind of treatment is really efficacious.

"TRACHEAL PUSHING" IN ANEURYSM OF THE AORTA.

At a meeting of the Société Médicale des Hôpitaux of Paris on Oct. 29th M. E. Hirtz showed a case in which the inverse of the well-known sign of aortic aneurysm—tracheal tugging—was present. The patient was a man in whom the trachea and larynx instead of being dragged down with each heart beat were, on the contrary, pushed upwards in sudden oscillations. Radioscopy revealed an aortic aneurysm but not its exact localisation. M. Hirtz thought that if it was situated in the concavity of the aortic arch it would have caused rhythmical depression of the left bronchus and therefore of the trachea and larynx (tracheal tugging). He believed that the aneurysm was situated at the convexity of the aortic arch. This inversion of the usual tracheal sign of aortic aneurysm does not appear to have been previously described.

THE INNERVATION OF THE SOFT PALATE.

THE nerves supplying the soft palate, and more especially those distributed to the muscles in that structure, have been the subject in the past of considerable controversy. It has, however, been established, especially by the researches of Beevor and Horsley in this country and of Professor L. Rethi in Vienna, that these muscles are supplied through the vagus nerve. Professor Rethi reviewed the whole question in a paper read before the recent International Congress at Budapest and published in the Wiener Medizinische Wochenschrift of Nov. 6th. It was for a long time supposed that paralysis of the soft palate was a symptom of certain forms of lesion of the facial nerve. Certain anatomists maintained that the motor fibres to the levator veli palatini came from the facial, since they succeeded in tracing fibres from the facial trunk through the geniculate ganglion into the great superficial petrosal nerve. Professor Rethi claims that these fibres are not motor in function, since stimulation of the facial trunk does not produce contraction of the muscles of the soft palate. As long ago as 1840 Volkmann, and shortly afterwards Hein. found independently that in freshly killed animals they obtained contraction of the levator veli palatini only on stimulating the vagus roots and not those of the facial. The observations of Beevor and Horsley on monkeys in 1888 established this fact, and Professor Rethi himself has confirmed it in a large series of observations on different animals. He has also found that the motor fibres for the levator leave the medulla in the median roots of the vagus, and that they originate in a common nucleus with the other fibres of these bundles. He has traced them down the lateral wall of the pharynx to the velum itself. These observations have been confirmed by Kreidl, and also by Chanveau in the horse. In man the same facts have been established. There have been cases in which the origin of the facial nerve has been destroyed without any paralysis of the soft palate, especially

in the interesting case described by Rosenthal, in which a new growth of the base of the skull extended into the Fallopian aqueduct and destroyed the great superficial petrosal nerve. On the other hand, numerous cases are on record where lesions of the vago-accessory fibres have been assoclated with paralysis of the soft palate. Professor Rethi has also investigated the secretory nerves of the soft palate. He has found in different animals, especially in cats, that local electrical stimulation produced secretion in the neighbourhood of the electrodes. Stimulation of the facial trunk at its entry into the internal auditory meatus produced secretion strictly limited to the same side of the soft palate. Secretion was also produced by stimulation of the cervical sympathetic. It was found that the secretion from stimulation of the facial nerve was more concentrated than that resulting from stimulation of the sympathetic, these results being the reverse of those obtained with the salivary glands. Professor Rethi was able to trace the secretory nerves from the facial trunk into the great superficial petrosal nerve and on into the Vidian, into which the sympathetic fibres also pass from the great deep petrosal nerve. The fibres thence pass together to the spheno-palatine ganglion and are distributed to the soft palate by the palatine nerves. He therefore concludes that the facial fibres going to the soft palate, which have by some been regarded as motor in function, are in reality secretory. His observations establish in an interesting and convincing manner the functions of the different nerves distributed to the soft palate, and make clear the innervation of the glands found in that structure.

PELLAGRA IN THE UNITED STATES.

This year's returns of the world's production of maize (Zea mays) show that more than 70 per cent. comes from the United States, which country produces at least 17 times more of this cereal than Austro-Hungary or Argentina, which are the nearest competitors. It has sometimes seemed strange to students of pellagra problems that the United States should be believed to be so free from this scourge, but it now appears that in many of the Southern States pellagra has been present for some years, though not correctly diagnosed till lately. On the American continent pellagra has been reported from Brazil, Uruguay, the Argentine Republic, and Mexico, but it was not until 1863 that sporadic cases were recognised in the New York and Massachusetts hospitals. But little more was heard of pellagra till 1902, when Dr. S. Sherwell and Dr. H. F. Harris each reported a case. In 1907 additional cases were brought to light, physicians visited Italy to confirm their impressions, and this year the public health reports, issued by the Treasury Department of the United States, give a table showing that about 1000 known cases of pellagra are scattered in 13 of the Southern States. More than half of these cases have been recorded from lunatic asylums or similar institutions. Dr. J. W. Babcock, superintendent of the State Hospital for the Insane, Columbia, South Carolina, was one of the earliest to recognise the existence of pellagra, and was one of those who visited Italy and England to confer with those acquainted with the disease and its complications. It is chiefly due to his energy that a "National Conference on Pellagra" took place in his hospital on Nov. 3rd and 4th. The conference was attended by 600 physicians from different parts of the United States, including official representatives from the Army, Navy, and Public Health and Marine Hospital Service. Many clinical cases were presented for study, and, in addition to some 40 papers read by American physicians, communications had been obtained from Dr. A. Marie (Paris), Dr. F. M. Sandwith (London), and Dr. J. Warnock (Cairo). Four resolutions were

unanimously adopted by the conference, besides those which conveyed formal compliments.

3. That the purposes for which this conference was called can best be furthered by its formal organisation into a permanent association of national scope, and that the committee on permanent organisation be instructed to report at this session.

4. That, this conference recognizes the widespread existence of

instructed to report at this session.

4. That this conference recognises the widespread existence of pellagra in the United States, and urges on the national Government the necessity of bringing its powerful resources to bear on the vital question of its cause, prevention, and control.

5. But while sound corn is in no way connected with pellagra, evidence of the relation between the use of spoiled corn and the prevalence of pellagra seems so apparent that we advise continued and systematic study of the subject, and in the meantime we commend to corn growers the great importance of fully maturing corn on the state before cutting same.

6. That the work of this conference be brought to the attention of the

That the work of this conference be brought to the attention of the various state and territorial boards of health, and that they severally be urged to specially investigate the disease, particularly as regards its prevalence, and that they also see that the proper inspection of corn products and that they also see that the proper inspection of corn

products sold in the various states be had.

The conference, on completing its labours, formed a permanent society to be known as "The National Association for the Study of Pellagra." Dr. Babcock was elected as first President, and the next meeting is to be held in June, 1910, in Peoria, Illinois, whence many cases of pellagra have been reported.

PROFESSOR ADAM POLITZER'S JUBILEE.

On Dec. 9th Professor Politzer will celebrate the fiftieth anniversary of the attainment of his doctor's degree, and occasion will be taken of this jubilee to do honour to the great otologist. A festival has been arranged by the Austrian otological societies, at which a number of addresses will be presented by kindred societies in other countries. The University of Vienna will renew the professor's diploma and cause it to be presented by some of its leading members. It will be remembered that when Professor Politzer retired from the chair of otology at Vienna two years ago a similar festival was set on foot; this had to be abandoned at his express wish on account of a family bereavement. At that time a gold medal bearing his portrait was struck and presented by otologists from all parts of the world to the great teacher from whom so many had received their inspiration. The present occasion will be welcomed as an opportunity of giving expression to their homage in a more personal manner. For 46 years lecturer in the University of Vienna, Professor Politzer has exerted an immense influence upon the course taken by modern otology, an influence which derives its strength from its solid basis of anatomical and pathological research. His numerous contributions to the literature of the subject are well known to otologists, but the monumental "Text-book of Diseases of the Ear" has been recognised as a classic by the whole profession. Within the last two years he has published the "History of Otology," a work which represents an immense amount of literary research of the widest range. In spite of advancing years Professor Politzer retains the vigour of middle age, and there is every reason to hope that he will remain many years the distinguished feature of international gatherings of otologists and the active leader of their branch of medicine. His British colleagues, many of whom have come under his personal influence at Vienna, welcome this opportunity of expressing their regard to a great teacher, and this expression will take official form in an address presented by the Otological Section of the Royal Society of Medicine, of which he is an honorary member.

At the anniversary meeting of the Royal Society on Nov. 30th Professor J. Rose Bradford was re-elected secretary in conjunction with Sir Joseph Larmor. Amongst those elected to the council were Dr. W. H. Gaskell and Dr. C. J. Martin. Sir Archibald Geikie was re-elected president. The annual dinner was held on the same evening at the Hôtel Metropole.

WE much regret to announce the death of Mr. Marcus Gunn, senior surgeon to the Royal Ophthalmic Hospital, Moorfields, and ophthalmic surgeon to the National Hospital for the Paralysed and Epileptic, Queen-square, W.C., which occurred at Hindhead on Monday last, Nov. 29th.

THE Bradshaw Lecture will be delivered at the Royal College of Surgeons of England by Mr. F. Richardson Cross, on Friday, Dec. 10th, at 5 P.M. The subject of the lecture will be: "The Brain Structures concerned in Vision, and the Visual Field."

THE King has been pleased to appoint Mr. A. J. Ram, K.C., a member of the Royal Commission on Vivisection, to be chairman of the Commission in the place of the late Viscount Selby.

THE Governor of Mauritius reported 38 cases of plague with 14 deaths during the week ending Nov. 25th. The Governor of Hong-Kong reported 1 fatal case of plague last week.

THE death is announced of Duke Karl Theodor of Bavaria, who has for many years practised as an oculist amongst the poor of his country.

THE MEDICAL PROFESSION AND THE POOR-LAW MEDICAL SERVICE.

BY MAJOR GREENWOOD, M.D., D.P.H., LL.D., HONORARY SECRETARY OF THE POOR-LAW MEDICAL OFFICERS' ASSOCIATION.

OF all the changes that might arise from the carrying out of the recommendations of the late Royal Commission on the Poor-laws there is none more important or that has greater claim to the careful consideration of the medical profession of the country than the future development of the Poor-law Medical Service. While admitting that the medical treatment of the sick State poor cannot be regarded as affecting that service only, none the less it is the interests of its members that are more directly implicated, and they may fairly claim the sympathy of their professional brethren and assistance in maintaining their rights and in procuring the reforms which they consider necessary for the efficient carrying out of their public duties. When the proposals in respect of medical relief of the Commissioners were first published they came as a shock to most Poor-law medical officers. Although the medical machinery of the Poor-law had least come under popular condemnation, it was that service that was singled out for the most radical treatment. For many years Poor-law medical officers had been agitating for important reforms, the necessity of which was amply recognised by the Commissioners themselves; but instead of obtaining what they asked for, it was decided to revolutionise the whole service.

It is certain that the great majority of Poor-law medical officers dissent from the medical recommendations of all the Commissioners, and they do so in company with the only representative of the profession on that Commission, and the one that, above all the others, has the greatest knowledge of the practical working of the present system and of the chief needs of the sick State poor. It is to be hoped that the Poor-law Medical Service will receive the support of the roor-law Medical Service will receive the support of the medical profession generally, as it is very desirable that the public medical services of the country should not lack that the public medical services of the country should not lack that

assistance which they have every right to expect from their brethren. The great majority of Poor-law medical officers rely more on private practice than on their Poor-law appointments, and it is evident that their chief interests are identical with those of the ordinary practitioner. They may be relied on, therefore, to seek to minimise as far as possible the imminent danger to private practice generally among the poor that is threatened by any large scheme of Poor-law medical reform, carried out on the lines of either the Majority or Minority Report.

The Poor-law Medical Service consists of some 7000 medical practitioners, the great majority of whom are district medical officers. It is thus a very considerable service and has been in existence since 1834. It may be fairly described as one of the chief creations of what Sir William Harcourt styled "the great Poor-law settlement" of that year. At the present time, if open to some of the criticism of the Commissioners, it is practically attending to the wants and necessities of the sick State poor in every corner of England and Wales. Most of these district medical officers are part-time officers and in most cases dependent on their private practice, and this fact must not be lost sight of, for it is clear that an improvement in their official position would be dearly bought at the expense of their private practice. For that reason it is necessary for them in considering the various recommendations of the Commissioners to look beyond the mere betterment of their position as public officers. The Majority Report is favourable to them in one particular. It recognises the necessity of a Destitution Authority, whether known by that name or not. Without such an authority the relations between practitioners and their poorer patients throughout the country would be profoundly altered, and even if a considerable amount of the cost for attendance on improper applicants for State aid were recovered by means of the "Consistent Code" of the Minority it would not go into the pockets of the men, whose patients had been But there is more than this: without tempted away. a Destitution Authority there can be no Poor-law Medical Service at all. Officers of the present service might be tacked on to the Sanitary Medical Service; but not possessing in many cases the D.P.H. diploma, they could hardly aspire to its highest honours, and as a Poor-law medical service their occupation would be gone. regard to the medical scheme of the Majority, this need only be mentioned to be condemned; to no Poor-law medical officer would it be acceptable. It would tend to abolish his office and injure his private practice. The criticism of the Minority Commissioners is sound here, and the opinion of the only medical member of that Commission as to its merits quite conclusive. Neither Poor-law medical officers nor other practitioners desire to see an increase of contract practice of this kind, and the former do not believe that bond fide provident dispensaries can be grafted on to Poor-law institutions. The United County Medical Service of the Minority can only be attractive to those Poor-law medical officers who desire to be amalgamated with another service and to be wholetime officers, who consider their interest will be better served by retiring from private practice and becoming State officials. Speaking generally, it is certain that the majority of the Poor-law medical officers of the country do not desire anything of the kind. They are well aware of many of the defects in the service that have been brought to light by the Reports of the Commission, and would welcome their removal. But to remedy them they see no reason for the drastic changes that have been proposed both by the Majority and Minority. They regard the present medical service as a necessary and efficient department of the State, needing reform in details but not abolition.

The more important recommendations of the Majority, touching a change of authorities, might readily be adapted to the present medical service, and most of the existing officers would suffer no injury, but might hope for an improvement in their status and more adequate payment. The proposed enlargement of areas might require some redistribution

of the present districts, but in most cases the district medical officer would continue to work on the same lines as heretofore. The Sanitary and Poor-law Medical Services would be kept distinct, the one preventive and the other curative, except that there might be transferred to the former the institutional treatment of all notifiable infectious disease. But although separate, there might be much more coordination between these services than hitherto. Dr. A. H. Downes says in his memorandum to the Majority Report that provision for this already exists, and could be developed without difficulty. All this is in fair accord with the Majority Report, if the medical scheme be omitted, but so far as the needs of Poor-law medical officers are concerned it is immaterial what Destitution Authority is decided upon, provided it is not identical with the sanitary committee of the county authority.

The chief reforms sought by the Poor-law Medical Service are: (1) More adequate payment for their work; (2) better security of tenure; (3) better provision for the nursing of their outdoor State patients; (4) security for payment of midwifery and other special fees, as for operations and for the administration of anæsthetics; and (5) the provision of all medicines and medical and surgical requisites by the State. With reference to the proposal to make the medical practitioner into the relieving officer quad applications for medical relief, while Poorlaw medical officers would not object to a modification of the present system under special circumstances, where application to the relieving officer was impracticable, they could never approve it as a general practice. In their opinion they could not carry out the important public duties of the relieving officer efficiently, and the attempt would constantly cause friction between them and their professional brethren not holding Poor-law appointments. The latter, as it is, sometimes object to the order given to their patients whom they think able to pay, and this friction would be greatly aggravated if instead of the relieving officer it was a rival practitioner who officially interfered.

Poor-law medical officers object to a radical distinction between medical and other relief. Medical relief is not more necessary than other kinds of relief, and if it is good for the State that the indigent poor should receive medical attendance it is equally necessary that they should be properly fed and clothed. It is pure sentimentalism to draw a distinction between the application for medical assistance at the cost of the State and any other form of necessary relief. Both are equally pauperising, and their only justification is the real need of the applicant. That this need may be real and not counterfeit, it is most important that all applicants for State relief should be under the supervision of a special officer and that there should be no interference on the part of the medical man with his special duties.

The absolute necessity of keeping the Poor-law Medical Service as a separate entity was the point which I insisted pon in some remarks which by their courteous invitation I made recently to the Society of Medical Officers of Health. I may be excused for repeating my words The substance of the reforms that have hitherto been proposed must—I said—profoundly affect the position now held by Poor-law medical officers, and may not unlikely result, if carried out, in some modification of the offices held by the members of your service. At any rate our two services are the only public medical services that are likely to go into the melting pot, and for that reason it seems to us there is the utmost need that we should endeavour to come to an agreement, and take counsel together, as to what steps should be taken to defend our common interests. In saying this it must not be supposed that I forget that as public officers we only exist for the good of the nation, and that the national interest alone is, after all, the chief desideratum. But neither service is unmindful of this fact, and both consider the true interests of the respective services to be that they should be made as efficient as possible to do that public work which the exigencies of the national welfare require of us respectively. We of the Poor-law Medical Service have made up our minds that our extinction, threatened by the Majority and Minority Reports alike, is not good for the public welfare, and that a distinct Poor-law Medical Service, both indoor and outdoor. ought to be continued; therefore, we could not join in any

attempt to support the Provident Dispensary Scheme of the Majority Commissioners. We emphatically deny that it would be a good thing either for the public or the poor, and we believe it would be ruinous in its effects on that portion of our common profession practising in poor districts. We further condemn the principle that every practitioner who wished should be a Poor-law medical officer, and we consider that there is scarcely any public medical service in the country that has better claims to be recognised as a distinct service than has the Poor-law. Granted the maintenance of our service, we are quite ready to welcome any suggestions which the Sanitary Service or the Society of Medical Officers of Health may formulate and to consult with them on common grounds to bring about all possible cooperation between the Sanitary and Poor-law Service of the country.

I think it not unlikely that from many points of view the proposals of the Minority Report may seem attractive to the Sanitary Medical Service. If the medical treatment of the sick State poor is to resolve itself into a mere question of sanitation, it is probable that the service whose special appanage sanitation is would, as Mrs. Webb phrases it, get all the "plums." But, on the other hand, the Minority Commissioners also propose to enrol the present Poor-law Medical Service in the ranks of the Sanitary Service, and Mrs. Webb has also plainly said that in the future the newcomers may expect to share in these "plums." There is, therefore, every prospect that posts now only open to professed sanitarians will, if the Minority scheme be carried out, be thrown open to a much larger circle. This, in my opinion, is not to the advantage of the present Sanitary Service. It must not be forgotten that even if a certain number of the present Poor-law medical officers are pensioned off, there will remain in round numbers about 3000 to find places in the new Sanitary Service, and all these under the scheme are to be allowed to compete for the plums in that service. To allow this to take place some modification would have to be made in the rights possessed by those who hold diplomas in public health. It has been suggested that present Poor-law medical officers who become partly health officers should not be debarred from the higher sanitary offices on account of the non-possession of that diploma. Whether such an arrangement would meet with the approbation of the medical officers of health of the country I do not know. It is, at least, questionable whether for the public good it is wise to mix up in one service clinicians and sanitarians; and especially, whether the science of public health would gain by such an admixture. On the other hand, as sanitary knowledge is necessary for the successful carrying on of all medical practice, if the Poor-law Medical Service of the future were kept distinct, as now, it might easily cooperate far more with the public sanitary service than it has hitherto done; and the true principle, in my opinion, to form the basis for future Poor-law reform is to try to get this cooperation while retaining a proper distinction between the clinician and the sanitarian. It seems to me that under any workable system the country must be divided into districts, and the actual treatment of the sick State poor must be in the hands of clinicians—that is, of district medical officers. An exception might be made in the case of infec-The treatment, and every other detail contions disease. nected with it, has naturally drifted into the hands of the Sanitary Service, as is only right and proper, and good reasons can be given why all forms of infectious disease may be safely treated at the public expense. But it is otherwise in the case of ordinary disease. If at times it may be difficult to draw the line, in most cases a broad line of demarcation can be drawn between the two kinds of disease.

I think, then, there should be a distinct service to deal with ordinary disease occurring among the sick State poor, and that the present Poor-law Medical Service, indoor and outdoor, or some modification of it, is the best fitted to do this public work.

THE PLUMBERS' COMPANY.—The Lord Mayor, in his capacity of Master of the Plumbers' Company, has signed the first batch of certificates awarded since his accession to office to plumbers (master and operative) of the suburbs of London upon their passing the examinations prescribed by the managing committee for the National Registration of Plumbers, and entitling the holders to describe themselves as registered plumbers, subject to their maintaining a satisfactory standard of work in the public interest.

SOME CONSIDERATIONS OF MEDICAL EDUCATION.

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The Position of the London Medical Student.

In the foregoing chapters many of the difficulties have been expressed that exist in arranging a curriculum for the medical student, which will at the same time cover the many provinces of learning with which the medical student is supposed to be familiar, and also be a possible course of education for him to go through within a reasonable time. Various solutions of various problems have been discussed, problems now under the consideration of the General Medical Council, and in many of these it has been necessary to take into account the peculiar position of the London student.

The position of the London student need not, however, be described at any great length or with any abundance of detail here, because, firstly, it is such an old topic in our columns that we can with fairness take it for granted that all our regular readers are familiar with the points at issue; secondly, our medical and lay contemporaries have recently devoted great attention to the matter, and have published much valuable information for the assistance of those who want to make up their minds in a difficult situation; and thirdly, there is at the present moment a Royal Commission sitting to inquire into the working of the University since its reconstitution, and presumably the evidence given before that Commission will place all interested in full possession of the facts. We must, however, briefly retell the old story, begging our readers at the same time to remember the vital importance of the issues at stake.

The salient faults in the present system of medical education, which though called faults are nobody's particular fault, arise from a commingling two sets of circumstances, the ever increasing scope of medicine and the large and also increasing number of educational authorities able to bestow qualifications for practice upon their students, but not regarding the curriculum with the same eye. The two things can be talked of separately, but it is their simultaneous occurrence and vexatious interaction which cause the difficulty in London. The medical degree of the University of London has long enjoyed the highest prestige. If this degree is to be admittedly the hall-mark of advanced scientific medical education the Senate of the University must take pains to see that the examinations are of the sort that prove students to be to some extent familiar with the latest pathological developments. But if this is done at the expense of the more rudimentary parts of the curriculum the examinations become a string of academic acrostics, the students fly to coaches for assistance, and the General Medical Council may find the examinations, as it has If it is already done on one occasion, unpractical. attempted to meet the case by being thorough from the beginning, by insisting that all the students, after a satisfactory preliminary examination, and a searching inquiry into their preliminary and special scientific equipment, shall show such acquaintance with clinical work that they are ready to take the field on qualification as adequate practitioners, how is time to be found to instruct and examine these young gentlemen in electro-therapeutics, in blood pathology, in the psychological side of neurology, and so on? It is clear that all this cannot be learned in a curriculum of five years' duration, while it is probable that the social class from which the medical student is recruited can ill bear the cost of more than five years' studentship. These things being so, the simple way out of the dilemma would be, it seems, to insist that the curriculum should be devised with the idea of moulding the student into a practitioner, and that the more scientific developments should follow in accordance with the desire of the student to specialise in one direction more than

another-to do laboratory work, or special consulting work, or operating work. But immediately the difficulty of the numerous centres which can confer upon the student the right of qualification makes itself felt. The universities. or certain of them, desire to maintain their degrees at a higher level than is thus signified, and it is right that they should do so, not only because every upward aim ought to be encouraged, but because they reward their students at the end of the course with a medical degree, conveying the legal right to the title of "Doctor"—not a small point as we all know. But what if Universities do not keep their examinations at any higher level than those of the corporations which reward their students only with diplomas, not conveying the legal right to the title of "Doctor"? This is a grave hardship to the students of the Royal Colleges, who have done work for their College tests which would have earned them at a university a medical degree, and the student in London, where the medical degree is particularly hard to obtain, is the typical sufferer.2 What the public require are men to treat them and to heal them in the conditions and emergencies of sickness. There is something very wrong when a large number of men educated presumably towards this end cannot obtain the legal right to the title which in the public eye stands, or may stand, for the proper medical qualification. In London to obtain that title the student must do work that is not of the kind to enhance his utility as a practitioner; and further, this work may have been done in time which has been taken from ward work to such an extent that he may be unfitted for his clinical duties.

In the present state of affairs the universities and the corporations cannot be expected to view with similar approval the institution of a State degree in medicine, wherefore Parliament cannot be invited with any real vigour to sanction the introduction of measures with such an object, but some of the undoubted benefits that would be secured by a simplification of the educational curriculum could be created if our universities and the various corporations would work in unison under the existing educational scheme. In taking the London case for an example it must be remembered that the present plight of the London student may become the plight of the Dublin, Edinburgh, and Glasgow student at any moment, and already there are signs that in Dublin and Glasgow the rivalry between the universities and the corpora tions may have very unfortunate results for the licensing faculties.

Any understanding that might be come to between the University of London and the London medical schools is complicated by the number of medical centres in the metropolis. There are in London 12 medical schools—13, counting both the school for women and the school attached to St. George's Hospital, now to some extent merged in the King's College School of Medicine-and all these offer to teach the medical student everything that he requires from Each school the start to the finish of the curriculum. possesses, in addition to lecturers upon, and demonstrators of, anatomy and physiology, teachers of all the ancillary subjects, and each maintains the necessary class-rooms and laboratories for such an undertaking. 50 years ago, the scope of the medical student's education being what it was, a medical school attached to a metropolitan hospital could easily provide the necessary facilities for a student; and 25 or 30 years ago the separate schools were all working fairly satisfactorily, though the present conditions of unrest were clearly visible. But since 1880 the cost of medical education to those who provide it has been increased out of all proportion to any increase in fees demanded students, and this has had a disastrons from the effect upon the subdivision of effort prevalent in London. The developments of biology, physiology, bacteriology, chemistry, and electrical science have all conspired to involve in heavy expense any medical school seeking to be completely equipped. All the London medical schools have answered bravely to the demands made upon them, and it appears to be their intention to continue in the same gallant course; but they cannot go on if the supply of students fails them, for the income from fees is lost; while as long as the idea is abroad that the London medical student does not obtain his M.D. degree upon reasonable terms the shortage

¹ Nos. I., II., III., IV., and V. were published in The Lanuer of Oct. 23rd (p. 1232), 30th (p. 1301), Nov. 13th (p. 1459), 20th (p. 1531), and 27th, 1909 (p. 1616), respectively.

² See "Some Problems of Medical Education in London," an address delivered by Sir William Allchin on the opening of the medical session of Oct. 1st, 1907.

of students will occur. It is this shortage of students that keeps the matter of the consolidation of the London medical schools before the public mind. The number of medical students in Scotland appears to remain about the same as it has been for the last decade; quite recently the number of medical students in Ireland has begun to show an upward tendency; England is the only division of the United Kingdom where the number of students has perceptibly gone down, and it is in London that the decrease has occurred; and one reason certainly is that the University of London and the Royal Colleges have been unable to come to any joint arrangement by which a medical degree could be obtained upon reasonable terms by the diplomates of the colleges. This is a matter of moment to the English Royal Colleges, because it is from the London students that they draw much lucrative support, although they are as a matter of fact Imperial corporations.

The average London student must become an L.R.C.P. London, M.R.C.S. England, supposing that he is not satisfied with the Licence of the London Society of Apothecaries; the other support received by the Colleges is fortuitous although it is so large. Until the new great provincial universities were added to the Universities of Oxford, Cambridge, Durham, and Victoria, the mass of the English provincial students were compelled to take the London diplomas; now they need do so only if they like, for these new degree-granting institutions offer them the title of M.D., perhaps with no inconvenient and expensive change of residence. As yet the competition of the provincial universities may not be very severely felt by the Colleges; the double diploma of the English Colleges is still the termination to the recognised English medical curriculum. But this state of affairs may not last; at any moment the mass of average students may decide that they must obtain medical degrees upon reasonable terms somewhere, and the number of provincial universities may increase.

The Colleges are fully aware of the situation, and it is probable that the governing bodies recognise the fact that the only certain way to attract medical students to London again is to give them the same chance of obtaining a medical degree that they would enjoy if they lived in Liverpool or Newcastle. But this can only be done if the University of London will join in some scheme for the purpose. Many think that it would be facilitated if all the different London medical schools agreed to consolidate their purely scientific teaching, but this is a matter upon which there are strong differences of opinion. To support 12 centres in London for the instruction of students in chemistry, anatomy, and physiology, when the work could be better done from, say, three centres by properly paid teachers, must always seem extravagant, while it militates against a fusion of interests between all the London medical students, which would be a very valuable asset to the University of London.

It must not be supposed that the Royal Colleges have been apathetic under adverse circumstances. On the contrary, they have done much. When the Colleges first became aware, mainly no doubt through teachers at the London medical schools, who were also members of the governing bodies of the Colleges, that unless the London students could obtain an M.D. degree more easily they would seek graduation elsewhere, their first idea was to obtain powers to grant such a degree themselves. The opposition, however, to giving to corporations the degree-granting powers similar to those possessed by universities proved too powerful for the success of any such scheme. At best it was a retrograde scheme, under which it was proposed to give to the London students, who already possessed a university which they did not use, the hall mark of a university without any other of the features of a university career. For the time the move would certainly have been popular, but no academic position would have accrued to the holders of such a "degree," and the Members and Licentiates of the Colleges would soon have found this out. The next course taken was to try to obtain from the University of London, the old University of London. some concession whereby the chances of the London students obtaining a medical degree should be increased. That these chances were very meagre was sufficiently proved by the fact that in the first 40 years of the existence of the

University, though upwards of 2000 medical became qualified yearly from medical schools where they might have graduated as M.B. Lond, if they had chosen, only some 800 men, or an annual average of 20 men, proceeded to the degree. The then unnecessarily elaborate demands of the matriculation examination of the University were held to be the chief reason for this dearth of medical graduates, though the "preliminary scientific" examination . also came in for criticism as being based upon a syllabus that was unpractical in a medical curriculum. As might have been expected, the existing medical graduates of the University held strictly opposite views upon the propriety of altering the character of the tests. A large proportion of them having worked hard and made many sacrifices to obtain an honour degree were averse from any change being introduced into the curriculum so that others should obtain the degree upon easier terms. A smaller section did not consider that the University as a whole benefited by fencing its medical degrees round in such a stringent manner, believing that many of the demands made upon the time and memory of the candidates for the degrees were not in the least likely, even if they were met successfully, to help in the manufacture of a particularly sound practitioner. The strength of these two opposite views was enhanced by the unfortunate fact that each party could call the other self-interested. The holders of the medical degree who wished to have its face value maintained in any manner, however artificial, were certainly playing their own game; the medical graduates of the University, who were also important personages in the Colleges, might be regarded as no less certainly watching the case in behalf of their corporations or their schools. University did not see its way to meet the Colleges, and the friends of the London medical students were constrained to fall back upon a third course. The existing University being unable to help them, and the privilege of giving degrees being denied to the corporations, the third alternative was a new university, of which the Colleges should in some way or other form the medical faculty. The scheme came near to realisation, and the "University of West-minster" received the support of the Privy Council, the ultimate authority on medical education, as being the body under which the General Medical Council exists. It, however, failed, there being no real impetus behind the movement at the critical moment.

Then came the reconstitution of the University of London, the most powerful factor in which was, perhaps, the feeling of the medical section that the education and examination of their students required revision and arrangement. In the new scheme the Senate of the University was given powers to make arrangements to conduct examinations conjointly with the Colleges, and undoubtedly the general feeling in the London schools was that some system of "pass" and "honour" degrees in medicine would be instituted, so that on the one hand the prestige attaching to a very stringent curriculum should be maintained, while a medical degree, as high in standard as far as purely professional attainments were concerned as any other degree in the country, would be made available for the generality of the London students. The Faculty of Medicine of the new University, including in its body many recognised teachers of the London medical schools, received a report from a committee which it had appointed to consider the reform of London medical education, advocating as an initial step the concentration of study in the preliminary scientific subjects as a way of bringing all the London students into touch with both the Colleges and the University. An appeal was made to the public by Lord Rosebery, the Chancellor of the University, and all the chief officers of the University, begging for the support of a Central Institute of Medical Sciences, and received in the first instance hearty support. The chairman or the treasurer of every London hospital concerned ranged himself on the side of the movement, which seemed to have secured a splendid start. Later, a small but very influential and business-like committee, appointed by King Edward's Hospital Fund for London, to make an inquiry into the allocation of the funds of these charities, appended to their report, which was necessarily based upon information in regard to the expenses of, and receipts from, the schools attached to the hospitals, a strong recommendation of the principle of the consolidation of medical study. But the movement so long expected, so definitely fore-shadowed in the new constitution of the University, so-

³ In what follows the writer has availed himself freely of the writings of Sir William Allchin, whose well-known volume on the University of London is a mine of information on the whole subject.

happily inaugurated and so powerfully supported, came The idea of one central institute was for to nothing. various reasons replaced by a scheme for three centres which did not appeal to several of the London medical schools. The two largest schools-those of St. Bartholomew's Hospital and the London Hospital-were soon seen in definite opposition to it; gradually several other schools, possessing by no means the same sound reasons for desiring independence, were none the less found to be averse from the form of consolidation offered; and the Senate of the University resolved to return to the donors the £70,000 which had been collected for the Central Institute of Medical Sciences, and The Senate not to pursue any such scheme to realisation. could plead in defence of their action that £70,000 was not a large enough sum wherewith to build and endow the new Central Institute, and that the metropolitan medical schools no longer wished to see it founded, so that their position if accused of vacillation or retrogression is a strong one. But in the meantime the London medical student remains as far off as ever from an adjustment of his difficulties, and the shortage of medical students desiring to take the diplomas of the Colleges becomes more pronounced.

The English Colleges have, however, now taken, as our readers know, a most important step. In the autumn of 1908 delegates were appointed by the Colleges to consider a draft scheme which, if approved by the Colleges, might be submitted to the University of London with the object of establishing a system of joint examinations between the Colleges and the University, the action of the Colleges having its origin in the desire of the governing bodies to meet the difficulties which have just been described in detail as lying before the London students in their endeavour to graduate in medicine at their University. The responsibility of reporting on the situation was delegated to Sir Richard Douglas Powell, Sir Henry Morris, Sir William Allchin, Mr. Butlin, Dr. H. A. Caley, Sir W. Watson Cheyne, the late Mr. H. H. Clutton, Mr. R. J. Godlee, Mr. A. Pearce Gould, Dr. Edward Liveing, and Dr. Norman Moore. They made their report to their Colleges in December, 1908, which was duly approved and adopted by both corporations. The report, having pointed out that one statute of the University of London definitely permitted the Senate of the University to make arrangements with the Royal Colleges to conduct joint examinations in any part of the curriculum, went on to show that roughly one-half of the diplomates of the two Colleges are also graduates in medicine, proving that there is a general desire among those who intend to take university degrees, or who already possess them, to hold also the diplomas of the Royal Colleges.

The report then points out how desirable it is that in London the system of teaching and examination should be coördinated in such a manner as to reduce the number of examinations. In London the same representatives of medicine, surgery, midwifery, anatomy, physiology, and other subjects teach and examine at the University and the Royal Colleges, while the organisation of medical education in London is largely controlled by the same individuals. But there are separate boards of examiners appointed by the University and by the Royal Colleges in all branches of study, as well as separate examinations—an obviously expensive position. In considering the scheme for reorganisation the delegates take as a basis the following principles:—

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In considering such a scheme the delegates have taken as a basis of their deliberations the following principles: (a) That the University should retain all its existing rights as to the granting of degrees, but should consent to exercise them as regards Pass Degrees conjointly with the Royal Colleges so far as those students are concerned who shall have spent not less than four years in study at London Medical Schools and Hospitals and who shall have complied with such conditions as the University and the Royal Colleges may determine. It is assumed that the University will continue to grant, independently of the Royal Colleges, Degrees in Medicine and Surgery which might be called Honours Degrees. The views of those who maintain that the present Degrees of the University of London are of an Honours' standard would thus be met. (b) That the Royal Colleges should retain all their existing rights, to grant diplomas to those who hour in ont eligible under the foregoing conditions; or (2) do not desire to come under such conditions. It is thus assumed that the Royal Colleges will continue to admit to examination for their diplomas candidates from other universities, home, foreign, and colonial, as well as London medical students who are not students of the London University. (c) That the Royal Colleges should be associated with the University in conducting the Preliminary Scientific, Intermediate, and Final Examinations for the Pass Degree (M.B., B.S., M.D.).

The objects of these arrangements are, as the delegates point out, to secure facilities to the average London student to obtain a medical degree; systematisation of medical education in London with a reduction in the number of examinations and a greater use of the magnificent opportunities of clinical study afforded by the London hospitals; and lastly economy.

The scheme proposed in this report was communicated to the University of London by letter addressed to the Chancellor by the Presidents of the Colleges early this year, and no doubt will be duly considered by the Royal Commission, recently appointed to inquire into the reconstituted university and now sitting.

(To be continued.)

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ANNUAL MEETING OF FELLOWS AND MEMBERS.

THE annual meeting of the Fellows and Members of the Royal College of Surgeons of England was held on Nov. 18th, Mr. Butlin, the President, being in the chair.

Some delay occurred in the commencement of the proceedings owing to the quorum of 30 required by the regulations not being present. When a quorum had been attained the PRESIDENT laid the report of the Council before the meeting and drew attention to several points contained in it. After remarking that 2652 copies of the report had been sent to Fellows and Members who had asked for it, he said that the final steps for the admission of women to the examinations for the diplomas of the College had just been completed. The next point concerned the proposed combination with the University of London. He said that the Senate had drawn up a scheme to permit of such a connexion, and the Council of the College had also formulated a scheme, but unfortunately differences, apparently irreconcilable, existed between the two schemes, and he felt somewhat pessimistic as to the probability of any such union taking place. However, a Royal Commission was at present sitting and it was possible that something might come of it. Remarking that the report of Dr. J. Ward Cousins, who was the representative of the College on the Central Midwives Board, would well repay perusal, the President gave a short sketch of the working of the Midwives Act since its passing in 1902 to the present time, and he lamented the lack of efficient provision for the payment of medical men called by midwives into difficult cases. He stated that there were many inconveniences in the Act, and that in July, 1906, Sir Henry Morris, who was then President of the College, had written to the Privy Council pointing out the desirability of making some provision for medical aid, and he had no doubt that before long an amending Act would be passed. During the year a number of valuable demonstrations had been given in the museum by Professor A. Keith, the conservator, and Professor Shattock, the pathological curator. These had been well attended and had been much appreciated and they had undoubtedly increased the utility of the museum. The establishment of these demonstrations had been mainly due to Mr. H. H. Clutton, whose loss they had all recently to deplore. He wished to draw particular attention to the section referring to the collection of odontological specimens, presented by the Odontological Section of the Royal Society of Medicine. The arrangement and the upkeep of this collection entailed a considerable expenditure both of money and labour, but its presence placed the museum of the College in the possession of what was probably the most valuable odontological collection in the world. As to the finance of the College, it might be said that it was satisfactory. He referred in detail to many of the items connected with the income and expenditure, and especially drew attention to the fact that by the successful sale of the examination buildings on the Victoria Embankment the loss on the original cost amounted only to £4000, and it must not be forgotten that the examination halls had been used for 22 years, and therefore as the lease was diminished to that extent the price obtained must be con-A large increase in the expenditure sidered satisfactory. had been connected with the changes in the museum. The

chief change had been the re-issue of the catalogue of the museum; many years had elapsed since the previous edition had been prepared, and during that time the additions to the museum had been very numerous, and more than 12 volumes of additions had been issued. After much consideration the card form of catalogue had been recommended by the museum committee and adopted, and the arrangement which was now being carried into effect was that the catalogue should consist of two parts. In the first place, in the museum itself near the specimens were placed many little boxes containing card descriptions of the specimens; secondly, in the hall of the museum was a series of cards which served as an index to the specimens by which it was possible to find the situation in the museum of any specimen which a visitor wished to examine. For the purpose of this large hall catalogue four cabinets had been designed by Mr. E. C. Frere, A.R.I.B.A. Altogether the improvement in the museum resulting from the formation of a new catalogue would be very great. He formally presented the report to the meeting.

Dr. W. G. DICKINSON asked permission to put a few questions. He wished to know what was meant by the body corporate on page 9, where it was stated that the property of the College is not vested in the existing Members.—The PRESIDENT, in reply, stated that the body corporate consisted of the past, present, and future Fellows and Members. -Dr. DICKINSON further inquired if he was to understand that any scheme for a combination of the College with the University of London had fallen through. - The PRESIDENT stated that until the report of the Commission at present sitting was issued no certain answer could be given. - Dr. DICKINSON further inquired in reference to the statement that Mr. Golding-Bird had been appointed to succeed Dr. Ward Cousins as the representative of the College on the Central Midwives Board, whether Mr. Golding-Bird had ever attended a midwifery case since he was a student, and if not how he could be a suitable member of a board that had to judge of the fitness of women to act as midwives.—The PRESIDENT pointed out that the late representative of the College had not practised midwifery for many years and yet had acted as a most satisfactory representative of the College on the Midwives Board.

Mr. F. W. COLLINGWOOD asked if there was any chance of the Council allowing the Members to have some voice in the management of the College affairs.

The PRESIDENT said that the matter had often been discussed on the Council, but that it had not been found possible to devise any satisfactory arrangement.

The PRESIDENT then called upon Mr. JOSEPH SMITH to introduce the first resolution, which was as follows:—

That this twenty-fifth annual meeting of Fellows and Members again affirms the desirability of admitting Members to direct representation on the Council, which as now constituted does not represent the whole corporation, and that it does so in order that the constitution of the Council of the Royal College of Surgeons of England shall be in keeping with modern ideas of true representation.

He observed that as a resolution almost identical with the present had been carried on 24 previous occasions it was so familiar to all present that it was unnecessary for him to say anything in regard to it. The vast majority of the Members supported some such scheme of representation, and many enlightened Fellows were also on their side. The Members contributed a large sum of money to the exchequer of the College, and where, he asked, would the College be without its Members? The President of the College was not really the President of the College—he was merely the nominee of the Council who were the nominees of the Fellows. It was high time that such an old-fashioned state of things should come to an end.

The motion was seconded by Mr. Collingwood, who pointed out the great moral claim the Members had to representation on the Council. The presence of Members on the Council would aid the deliberations of that body. For instance, if Members had been on the Council the question of the association of the College with the University of London, difficult question though it was, would have been settled long ago.

settled long ago.

Mr. A. N. WATTS stated that he became a Member in 1864, and from that time to the present he had never been asked to take part in any function connected with the College, except these annual meetings.

A MEMBER mentioned that the Council was not in touch with the Members, and when the Members met with

difficulties in connexion with their rights as Members they could not obtain the assistance of the Council. He mentioned that during the last two years he had practically been debarred from giving evidence in one county court because the judge would not allow him to swear on his own New Testament, and would not admit his evidence unless he swore on the Testament provided by the court.

Mr. H. ELLIOT-BLAKE pointed out that the presence of Members on the Council would bring the Members more closely into touch with the Council.

Mr. EDMUND OWEN said that the present powers were vested by Charter in the Fellows and the Council and by right of that Charter they exercised it.

Mr. C. C. MITCHINSON mentioned that during the 50 years he had been a Member the College had done nothing for him.

Dr. WALTER SMITH said that a house divided against itself must be weak, and the addition of Members to the Council would add to the strength of it.

Mr. ELLIOT-BLAKE pointed out that in the Charter the consent of the Members had not been asked.

A MEMBER claimed that the Members of the College, though they had passed examinations more difficult than those leading to degrees in some of the universities, were under practical disabilities in courts of law, as their evidence was supposed to be inferior in value to that given by doctors of medicine.

A MEMBER said that such resolutions as this were merely like whipping a dying horse.

The motion when put to the meeting was carried nemine contradicente.

The second motion was brought forward by Dr. A. S. MORTON; it was as follows:—

That in fulfilment of the promise made by the President of the College in 1905 this meeting strongly urges the Council to impress upon the Government the necessity of amending the "Midwives Act" next session, in order that provision may be made to secure just remuneration for professional services rendered by medical men under this Act.

He commenced by observing that three years ago he withdrew a similar motion because the President assured him that the question of payment would be considered. In the country Members were liable to be called long distances to attend women in labour, knowing all the while that they would be unable to obtain any remuneration for their work. If the Council of the College had not supported the Midwives Act it could not have become law. The Government had the lowest idea of the value of the services of medical men; it paid for the examination of a man for the Woolwich arsenal the magnificent sum of sixpence; and Mr. Haldane's territorial scheme provided that for the examination of recruits, including the examination of the heart and lungs, the eyesight, the teeth, the presence of varicose veins, recording the colour of hair, and of many other particulars, the medical officer should receive a shilling.

The motion was seconded by Dr. W. H. DAY, who pointed out that medical men were always expected to work for nothing. Death certificates had to be given without fee, and yet the Registrar was authorised to receive for a mere copy of that death certificate 2s. 7d., and now medical men were compelled to send notice of births also without charge.

A MEMBER said that the one important effect of the present arrangement was that now medical men only got the difficult midwifery cases, all the easier cases being attended by midwives.

Mr. COLLINGWOOD observed that the duties and responsibilities of the general practitioner were accumulating while the remuneration they were receiving was diminishing.

The PRESIDENT admitted fully the intense need that existed for a settlement of this difficult question, and he did not doubt that before long an amending Act would be passed, but the Government was never willing to pass an amending Act to an Act until some years had elapsed, so that the difficulties of the working of the Act should be fully ascertained before the amending Act was brought forward.

The resolution was carried unanimously.

The third motion was brought forward by Mr. Elliot-Blake; it was —

That the Council of the Royal College of Surgeons of England through their joint committee of delegates, and when it was found necessary and

in any agreement with the Royal College of Physicians of London, be asked to approve of and promote a new Charter and Act of Parliament to incorporate the Royal Colleges of Surgeons of England and Physicians of London, so as to form Royal Colleges or parts of the University of

He did not refer merely to the disabilities associated with the absence of the degree of Doctor of Medicine. His main argument was that the existence of such bodies as the Colleges was an anachronism, and that their existence should be merged in that of the University of London. They needed support of such a body as the University in the withered state of the College.

Mr. J. BRINDLEY JAMES seconded it.

Mr. COLLINGWOOD contrasted the arrangements in Edinburgh with those of London, and said that the present arrangements in London were utterly faulty, otherwise why should a town of only half a million inhabitants like Edinburgh have three times as many medical students as London, which had a population in itself twelve times as great.

Dr. DICKINSON would have liked some more information as to the number of University candidates who gained the diplomas of the College, and he was referred by the PRESIDENT to the report which contains the information for which he was asking.

The motion when put to the meeting was carried, with two dissentients.

A vote of thanks to the President for presiding was carried with acclamation.

Eleven Members of Council were present, five other Fellows, and 48 Members.

THE REPORT ON SCOTLAND OF THE ROYAL COMMISSION ON THE POOR-LAWS AND RELIEF OF DISTRESS.

THE Poor-law Commission in its report upon Scotland makes recommendations which follow the lines of those already published by it with regard to England and Wales, but which are necessarily modified and altered to suit the physical and economic conditions of the country to which they are to be applied. The existing Poor-law of Scotland, if it has grown up side by side with that of Kngland, has owed its inception and development to different Acts of Parliament and to administrative regulations differing from those which have been found appropriate to its neighbour south of the Tweed. These have been framed to suit the temperament and habits of its people, which are not the same as those of the English, and it need hardly be said that within the limits comprised under the title Scotland are found wider variations of circumstance due to geographical and climatic features than are presented by England and Wales. Scotland contains cities such as Edinburgh and Glasgow, fertile lowlands and prosperous country towns, together with highlands and islands, in which throughout large tracts the inhabitants live lives of great poverty and hardship, and in which sometimes medical aid for the poorer classes may fairly be said scarcely to exist at all. To a large section of those who read this latest Blue-book issued by the Commission the chapters relating to the conditions of medical Poor-law service will appear to be the most interesting, and to point to a state of affairs more urgently crying out for reform than the system of outdoor or indoor relief of those not in need of medical aid. The interest referred to should be roused not only in medical men but in all laymen who have the welfare of the Empire at heart and who desire to see their fellow subjects within its boundaries accorded a fair chance of surviving to be healthy and useful citizens. The Commissioners quote from the evidence of the late Dr. Macdonald of Stornaway with regard to one of the islands words which apparently are not wholly inapplicable to other districts: "I have visited the greater part of our vast Empire, but have yet to visit any part thereof in which British philanthropy has failed to put medical assistance and hospital treatment within easy reach of the poor as in Lewis; nay, more, that same philanthropy has extended the same privileges to poor people beyond the bounds of our Empire, so much so that, were some globe trotter to come across conditions

similar to those prevailing in Lewis a Mansion House fund would be inaugurated for their relief. But here in Lewis, within 24 hours journey of London, men, women, and children are allowed to die without adequate provision being made to bring medical assistance and hospital treatment within easy reach of them, and under sanitary conditions that had better not be described."

If we dwell upon the recommendations made by the Commissioners for the amelioration of the conditions of medical service throughout Scotland rather than upon their views with regard to the relief of distress generally, and upon those relating to the modification of unemployment, we must first briefly indicate the changes which they wish to see in the administration of relief to the destitute, and in the agencies through which that relief, including medical aid, should in their opinion be distributed. With regard to the central authority, the Commission recommends that the Local Government Board of Scotland should assume a more direct position of initiative and guidance in matters of principle affecting the administration of the Poor-law or, as they propose to call it, Public Assistance. With a view to make this possible, suggestions follow for raising the status of the Board, for increasing the number of superintendents of the poor, for increasing the powers of the Board, for improving the system of audit, and otherwise for rendering the Board effective in stimulating and directing the administration of Public Assistance.

In the administration of relief the Commission finds the parish and not, as in England, the union of parishes the unit of administration in Scotland. Distinguishing burghs with a population of 7000 and upwards from counties exclusive of these, it recommends that the area of the burgh should be the administrative area in the former case and that of the county in the latter, with powers of combination and cooperation in both cases where necessary in order to provide special institutions for particular classes of poor persons. For burghs having a population over 7000 it is recommended that there should be a Public Assistance Authority appointed by the town council and composed as to one half of town councillors and as to one half of persons of experience in the administration of Public Assistance and other cognate work, the whole forming a statutory committee of the town council. Burgh Public Assistance committees are recommended for the purpose of carrying out the work in divisions of the burgh where the formation of such divisions is found necessary, the committees to be appointed by the Public Assistance Authority, and to consist partly of members of it and partly of members of voluntary aid committees where such are found. Since 1894, under the Local Government (Scotland) Act, parish councils have taken the place of parochial boards (instituted in 1845) for the distribution of parish relief, and the Commission recommends that in burghs having a population of less than 7000 these should be retained for the purpose of public assistance in such burghs and in landward (rural) districts, acting under a county Public Assistance Authority, composed on lines nearly the same as those recommended for England. It adds, however, that the parish councils should be supplemented by persons having experience to be appointed to them by the ublic Assistance Authority.

It is recommended that a proportion of Public Assistance Authorities and of the committees should consist of women, and recommendations are made for the provision of officers to work under them and for improving the status and efficiency of these. The inspector of the poor is the officer chiefly dealt with, and it is mentioned that the only other Poor-law officer whose appointment is required by statute at the present time is the medical officer of a poorhouse.

The conditions of Poor-law relief in Scotland differ in

The conditions of Poor-law relief in Scotland differ in many particulars from those found in England. The qualification for poor relief in Scotland is destitution—i.e., poverty, not absolute destitution, combined with disability to earn a livelihood; i.e., bodily or mental incapacity. No others may be relieved, not even the sick dependents of an able-bodied man, or a man in bad health who is nevertheless able to earn wages. The Commission recommends an extension of relief to the necessitous whom it defines. In Scotland, as regards the sane poor the term "indoor relief" is applied only to the maintenance of poor persons in a prorhouse, all relief in other institutions being regarded as outdoor relief. After discussing the defects of poorhouses, which in Scotland are more easily filled in burghs than in

country districts, and are open to many of the objections which apply to general workhouses, the Commission recommends that the general poorhouses should be abolished and that institutional assistance should be given in separate institutions appropriate to the various classes for whom it may be necessary. The essential difference between Scottish and English Poor-law administration lies in the prevalence of outdoor relief—a term applied to all not relieved in a poorhouse. Outdoor relief is thus considered to be given to children maintained out of the rates in charitable institutions, but apart from this the proportion of outdoor relief will be appreciated when it is stated that on May 15th, 1908, it was ascertained that out of the total number of paupers (excluding lunatics) 84.81 per cent. were in receipt of it. The Commission finds that it is often not administered wisely and that its unconditional character causes it to have little curative or restorative power. The effect of this feature of almost universal outdoor relief upon the conditions of Poor-law medical service need hardly be pointed out. With regard to the aged not suited for assistance at home, the Commission recommends special institutions, advising the extension of "parish homes," of which it describes instances in Scotland in terms of commendation. the boarding-out of children to be well conducted in many places, but recommends that it should be more carefully regulated by the Local Government Board. It condemns their maintenance in poorhouses and gives instances to show that in Scotland this occurs under undesirable conditions. It also makes recommendations as to treatment by the Public Assistance Authority of unmarried women coming under it for the purpose of being delivered of illegitimate children in order that such treatment may tend to check immorality. For this purpose it points out the difference between those who become mothers for the first time and those who are mothers of illegitimate children already, and, again, those who are of weak intellect.

(To be continued.)

THE MEDICAL TREATMENT OF LONDON SCHOOL CHILDREN.

AFTER a protracted debate the London County Council on Nov. 30th approved the further arrangements for the medical treatment of London school children submitted by the Education Committee and referred to in THE LANCET of Nov. 6th, p. 1367. The committee recommended the Council to enter into agreements with eight hospitals to provide treatment for 16,000 children suffering from ailments of the eyes, ears, and skin, and to accept the offer of the Charing Cross Hospital to provide X ray treatment for 25 children suffering from ringworm. The committee also reported without comment the receipt of a resolution passed by the British Medical Association at Belfast, protesting against the procedure contemplated by the London County Council as unsound in principle and unjust to the medical profession.

The debate, which lasted for three hours, took place on the report as a whole, but the following amendments appeared on the agenda paper. By Mr. Bray:-

That the waiting-room and other accommodation is to be satisfactory to the Council, and the hours of treatment such as to be convenient to working-class parents.

By the Rev. Stewart Headlam :-

That in view of the great distances which many thousands of childrenespecially from South London, will have to travel to the hospitals, the
loss of time which the poorest parents will suffer owing to the long
waiting in the out-patients' departments, and the difficulty of ensuring
adequate treatment in such departments, which have so many other
patients awaiting treatment, the Council directs the Education Committee to prepare a definite scheme for the establishment of school
cllinics, so that the children can be attended to in their own localities.

Mr. CYRIL JACKSON, chairman of the committee, in introducing the report, referred to the decision of the Council earlier in the year to treat through the hospitals certain of the ailments from which children suffer. It was evident, he said, from the present report that they were able to deal with all the cases needing treatment in the existing institutions. With further proposals to come before the Council at a later date they would practically cover the whole of London. Only 5000 children still needed arrangements to be made for them

under the present reference to the committee. were one or two districts not served by the hospitals, notably Woolwich and Norwood, and there the committee was communicating with the local practitioners in the hope that suitable arrangements might be made. The Council owed a great deal to the education officer for the trouble he had taken. The negotiations with the hospitals were not easy owing to misunderstandings in the minds of the medical profession as to what the Council intended to do. Now this was better understood more and more hospitals were coming forward. Indeed, certain institutions had applied and had been refused because there were not enough children in their districts requiring treatment. Their services might be utilised later, but he did not think they would be required. He was certain the best method of dealing with the children was by the magnificent hospitals and their skilled staff. The Council would not be able to command the same class of men for clinics which it might establish.

The case against the committee's proposals was opened by Mr. Bray, who entered into a detailed comparison of the cost of clinics and treatment in other institutions. regarded the omission of dental treatment as very serious, and mentioned that only last week the Education Committee adjourned for another six months the consideration of this part of the question, notwithstanding that its attention had been called to it by various bodies. The military and naval authorities urged that the children's teeth might be attended to in order that recruits might be obtained more readily, and the medical profession warned them that many diseases originated in septic teeth. It would be possible to set up 12 clinics in convenient situations and treat every year 131,000 children at a cost of £20,000, or 24 clinics for £26,000. The cost per head would be not more than 4s. They were to pay the hospitals an average of 5s. a head, or 25 per cent. more than the sum for which they could do the work themselves. What value were they to get for the extra payment? The agreements to be entered into provided that the hours of attendance must be convenient to the hospitals, the additional clinical assistants would be appointed by the hospitals, and the Council would have no voice and no representation, and it agreed not to interfere in any way with the work of the department. Had the out-patient departments of the great hospitals been famous for their efficiency? Out-patients were treated in a way that would not be tolerated if the service were on other than a voluntary basis. He could not conceive that efficiency would result from handing their children over to these departments. The expense would be greater than the committee seemed to think. It might be said that the Council would save in the case of the hospitals which gave free treatment. was it likely that these hospitals would continue to do so when they knew they could get help from the rates and a promise on the part of the Council not to interfere with the management? Already the London Hospital, which promised free treatment, had asked for a grant. The Education Committee also calculated that many children would be treated free by the hospitals as at present. That might be so if the Council established clinics, but did anyone imagine the hospitals would agree to receive school children in regard to some of whom they would receive 5s. a head and in regard to others nothing. They would refuse to treat any school children except under the ægis of the London County Council. The result would be that the Council would have to pay for the maximum number of children. Further, the cost to parents living remote from the hospitals in taking their children to the out-patient departments for treatment would be considerable. In necessitous cases this would have to be paid by the Council, and in all cases where the cost of treatment was sought to be recovered allowance would have to be made as between parents living near and those living far from hospitals. The scheme, then, could not fail to be extravagant.

Mr. JAY said that nothing like a reliable estimate of the cost of school clinics had been before the committee and therefore he did not take Mr. Bray's figures seriously. cost as between the two proposals would not be appreciable. The committee had been able to tell the hospitals exactly how many cases would be sent to them and so they would be able to make precise arrangements for the dealing with them. No doubt the Council would have to pay fares in some cases and also make allowances towards the expenses of those living at a distance from the hospitals.

¹ THE LANGET, April 10th, 1909, p. 1069.

Mr. JEPHSON welcomed the scheme as far as it went. He believed a system of depending partly upon hospitals and partly upon clinics would be necessary, and that neither alone would solve the problem.

Mr. Cohen believed school clinics would be more expen-

sive than was generally supposed.

The Rev. STEWART HEADLAM wished that the Finance Committee, which was responsible for the curtailment of the scheme by the omission of the treatment of teeth, could be brought to realise the result to London in one generation if in the schools the children's ailments, fraught with such serious consequences, were attended to. They would then be eager and enthusiastic to spend whatever money was necessary to make the coming generation healthy. This was essentially the work of the Gospels—fighting against disease and for health—and the call came to them all to perform it. Mr. Headlam reminded the Council that the special committee, consisting of medical men and other experts, appointed to consider this question reported in favour of clinics. The British Medical Association had expressed the same opinion.

The Rev. Dr. SCOTT LIDGETT remarked that the hospitals were doing this work on their own terms, whereas the Council should have had some control where public money He feared that as the children were was being spent. more stringently inspected and disease long unsuspected was revealed, the pressure on the hospitals would cause the proposed arrangements to break down. Whole districts were left out, and nothing was done to minimise the hardship to parents in having to sacrifice their day's work to take their children to the hospitals. He did not want to speak lightly of the out-patient departments, but in them young, inexperienced men would see the children. Clinics seemed at least as economical, and in them the Council could engage a staff of higher medical skill than would be provided for the children in the hospitals. ("Oh.") Did members suppose that distinguished heads of the hospital staffs would be at the disposal of the children? They must recognise that while general instruction was given by these authorities, the bulk of the work would be carried out by those who had the minimum qualification for operating upon their fellow creatures.

Mr. GRAY declared that a proposal to spend many thousands of pounds upon the establishment of clinics and the provision of treatment for teeth would be unpopular with the London electorate.

Mr. CYRIL JACKSON, replying to the various points raised in the debate, said that the hospitals were making arrangements in many cases for separate treatment of the children to The committee was still prosecuting be sent to them. inquiries on the subject of dental treatment, and the education officer had been to Cambridge to inquire into the working of the dental clinic there. The cost was 7s. 2d. a head and the percentage of children with carious teeth was 76 per cent. Until it had fuller details the committee thought the Council should deal only with the ailments arising more particularly in connexion with school work.

The amendments on being put to the vote were both lost, as was also a proposal by Dr. R. M. Beaton to instruct the committee to report forthwith as to the provision of dental The recommendations of the committee were treatment. then agreed to.

CENTRAL MIDWIVES BOARD.

A MEETING of the Central Midwives Board was held at Caxton House, Westminster, on Nov. 25th, Dr. F. H. CHAMPNEYS being in the chair.

Mr. E. PARKER YOUNG moved:

That one member of the Central Midwives Board be elected as a Direct Representative by the registered medical practitioners in England and Wales in the same manner and at the same time as the Direct Representatives on the General Medical Council are elected.

He said that there were three Direct Representatives of the medical profession on the General Medical Council, and in the future there was going to be a fourth. In regard to the representatives on the Central Midwives Board the medical representatives were sent up to the Board through the examining bodies by a small number of persons. It was clear there was no direct representation on the Central |

Midwives Board, and if such representation was good for the General Medical Council surely it must be good for the Central Midwives Board.

Dr. S. B. ATKINSON, in seconding the motion, pointed out the advisability of the general practitioner voting at the same time for the General Medical Council and the Central Midwives Board.

The motion was put to the vote and carried.

A letter was received from the National Association of Midwives claiming to appoint a representative on the Board. The Board approved of the reply sent by the secretary stating that the Board had no power in the matter.

The Standing Committee reported that a letter had been received from the medical officer of health of Bolton as to the dismissal of a midwife from further attendance on a case by a registered medical practitioner who had been summoned on her advice. The committee recommended that the reply be that, on the facts stated, the Board considers: (a) That it would not have been right for the midwife to have disobeyed the instruction of the medical man, and to have kept on with the case until she had received notice from the local responsible for the case, his orders, however ill considered, must be obeyed (Rule E, 6). (c) That as regards the question of suspension of the midwife to avoid spreading infection this was not necessary.

Miss R. PAGET protested against the recommendation because, in her opinion, it set up a precedent giving the right to medical men to send away midwives from their

Sir GEORGE FORDHAM objected to the recommendation because he did not think it was necessary to lay down rules of conduct.

On the motion of Dr. ATKINSON the previous question was

put and carried, and the subject dropped.

A letter was considered from Miss F. Bernard-Boyce, inspector of midwives for Norfolk, as to the extent of the right of a midwife to administer drugs. The Board decided that a reply be sent embodying the principles laid down in a circular letter to the examiners dated June 8th, 1907, on the subject of the administration of drugs by midwives, giving details as to the rules authorised for the proper administration of drugs by midwives under safeguards. the course of the discussion on this matter Mr. GOLDING-BIRD stated that he did not consider that the term "administering a drug" meant prescribing one.

A letter was received from the honorary secretary of the Chelsea Division of the Metropolitan Counties Branch of the British Medical Association, forwarding a copy of a resolu-tion passed at a meeting of the medical practitioners of Chelsea and Fulham, refusing to attend women in, or immediately after, childbirth, or in respect of puerperal maladies, in response to emergency calls by midwives, unless the boards of guardians of Chelsea and Fulham guarantee to pay the fee.

BRITISH MEDICAL BENEVOLENT FUND.

At the November meeting of the committee of this Fund 27 cases were considered and grants amounting to £271 were made to 23 of the applicants, three cases being passed over as unsuitable for help and one case postponed for further inquiry. Appended is an abstract of the cases relieved:

inquiry. Appended is an abstract of the cases relieved:

L.S.A., aged 65 years. Used to have a fair practice, but lost it through ill-health and other misfortunes and has had to start afresh in a neighbourhood where the fees are extremely small and the competition very severe. Is making progress, but requires a little help. Relieved once. £18. Voted £18 in 12 instalments.

Widow, aged 64 years, of M.R.C.S., L.S.A. Since husband's death. 24 years ago, has supported herself until recently, but now finds it very difficult to obtain work, and is not in very good health. Relieved once. £12. Voted £12 in 12 instalments.

Wife, aged 64 years, of M.R.C.S. Was deserted by her husband six years ago through no fault of her own and is now destitute and in very feeble health. No friends or children able to help. Relieved twice, £24. Voted £12 in 12 instalments.

L.R.C.P., L.R.C.S.I., aged 62 years. Practised for many years in the North of London, but lost all his patients through gradual failure of health and is now quite incapacitated. No children; no income and help given by friends during the last year is obliged to be withdrawn. Voted £18 in 12 instalments.

Daughter, aged 48 years, of late M.R.C.S., L.S.A. Was obliged to yilve up a good post as governors to nurse her mother during an illness which continued many years, and now needs a rest before again endeavouring to find employment. Income only a few shillings a week. Voted £5 in one sum

Daughters, aged 59 and 50 years, of late M.R.C.S. Since father's sudden death more than 30 years ago have endeavoured to support themselves by receiving paying guests at a small house of which they are the owners. Are obliged to ask help for the winter owing to the expenses arising from a severe accident to the elder applicant. Voted £10 in one sum.

are the owners. Are oblight to ass help for the winter owners at the expenses arising from a severe accident to the elder applicant. Voted £10 in one sum.

Widow, aged 63 years, of M.R.C.S., L.S.A. Maintained herself as a nurse-companion for many years, but is now practically destitute. Receives a few shillings occasionally from a son recently made a bankrupt, and earns about a shilling a week by glove cleaning. Voted £12 in 12 instalments.

Widow, aged 68 years, of M.R.C.S., who practised in London, but was incapacitated owing to ill-health and supported for several years by the applicant. No income and dependent on a son-in-law who can ill afford to help. Voted £10 in two instalments.

Widow, aged 68 years, of L.R.C.P. Edin., M.R.C.S. Eng. No income; children unable to help; health failing. Relieved twice, £24. Voted £12 in 12 instalments.

Daughter, aged 58 years, of late M.D. Lond. No income; endeavours to support herself by letting lodgings and by needlework; eyesight defective. Relieved 26 times, £196. Voted £6 in six instalments.

Widow, aged 72 years, of M.D. Lond. Only income two small annuities and asks for a little help to obtain little comforts necessitated by her advanced age. Relieved four times, £26. Voted £5 in one sum.

Daughter aged 55 years of late M.D. L.S.A. Was a governess for

sum.

Daughter, aged 55 years, of late M.D., L.S.A. Was a governess for many years, but is now in ill-health and quite unfitted to earn her living. Relieved eight times. £20. Voted £12 in 12 instalments.

Daughter, aged 53 years, of late M.D. Edin. No income; endeavours to support herself by taking lodgers, but has had a very bad season. Relieved twice £12. Voted £10 in one sum.

Widow, aged 55 years, of M.B. Cantab. Quite unprovided for at husband's sudden death about seven years ago and has since endeavoured to support herself by taking in washing and acting as charwoman. Has two daughters in domestic service and is advised by one of them in Australia to go out there with the youngest child, aged 9. Relieved six times, £77. Voted £5 temporarily and promised £12 towards passage money if friends find the balance.

Widow, aged 49 years, of L.S.A. Left quite destitute at husband's

passage money if friends find the balance.
Widow, aged 49 years, of L.S.A. Left quite destitute at husband's death from new growth a few years ago and dependent on a son aged 17, earning 15s. a week. Health feeble; very deaf; has lost her sight in one eve and is nearly blind in the other. Relieved four times, £50. Voted £12 in 12 instalments.
Widow, aged 53 years, of L.F.P.S.Glasg. No income: slight help from elder children. but has three dependent on her, the youngest having spinal curvature. Relieved three times, £36. Voted £12 in 12 instalments.

Widow, aged 50 years, of L.S.A. Two daughters, aged 17 and 15. Has endeavoured to support herself and them by letting lodgings, but has been obliged to sell most of her furniture. Relieved twice, £20. Voted £12.

Daughters, aged 57 and 52 years, of late M.R.C.S. Small earnings from needlework and slight help from friends. Relieved five times, £56.

from needlework and slight help from friends. Relieved five times, £56. Voted £18. Widow, aged 75 years, of M.R.C.S. Has an Epsom College pension and receives a little help from a son, but has been obliged to incur heavy expenses for a daughter who has recently undergone a severe operation. Relieved seven times, £68. Voted £10.

Daughter, aged 62 years, of late M.R.C.S. Assisted her mother to keep a boarding-house for 13 years in order to support her father, who was paralysed, and now acts as housekeeper to two sisters who are endeavouring to establish a school. Relieved once, £12. Voted £12.

Daughter, aged 51 years, of late M.R.C.S. Nursed her father, who was a pensioner of this Fund and Epsom College, for 10 years, and now finds it very difficult to obtain sufficient work to support herself. Relieved once, £12. Voted £12.

L.R.C.P., L.R.C.S. Edin., aged 52 years. No income; has been incapacitated by spastic paralysis for several years. Relieved five times, £60. Voted £12.

Daughter, aged 49 years, of late M.R.C.S. Eng., L.R.C.P. Edin. No

Daughter, aged 49 years, of late M.R.C.S. Eng., L.R.C.P. Edin. No income and has recently undergone a severe abdominal operation. Relieved once, £12. Voted £12.

Contributions may be sent to the treasurer, Dr. Samuel West, 15, Wimpole-street, London, W.

Looking Back.

PROM

THE LANCET, SATURDAY, Dec. 3rd, 1831.

Researches to establish the Truth of the Linnaan Doctrine of Animate Contagions, wherein the Origin, Causes, Mode of Diffusion, and Cure of Epidemic Diseases, Spasmodic Cholera. Dysentery, Plague, Small-pox, Hooping-Cough, Leprosy, No. So., are illustrated by Faots, from the Natural History of Markind, of Animals, and of Vegetables, and from the Phenomena of the Atmosphere. By ADAM NEALE, M.D., &c. &c. 8vo, pp. 258. London: Longman and Co. 1831.

In the introduction to the present work, Dr. Neale informs us that "he has ventured to come forward as an advocate of the truth of the Linnean doctrine of animate contagions, believing that it is founded on facts, and on the ever-lasting nature of things, and that by its development alone physicians will be at length directed to the true method of curing diseases." Proceeding with these views, it

multitude of curious facts in natural history to bear upon. and apparently corroborate, his favourite hypothesis. Everything that is obscure in the diffusion of epidemics, and in the cure of almost innumerable disorders, he lights up by the assistance of his insect coadjutors; and not content with this, he even directs their energy to the overthrow of some old and seemingly satisfactory doctrines which that arch deceiver "common sense" had applied to the explanation of various items in the history of disease. For the entertainment of our readers, we shall quote a few of the anecdotes with which the volume abounds. Speaking of the plague, Dr. Neale states, p. 36:-

"Our knowledge of plague, after remaining for a long period in a very

"Our knowledge of plague, after remaining for a long period in a very uncertain state, was destined to be augmented and rendered more accurate by the plague having been unluckliy imported some years since (1831) into Malta, where it showed itself amongst the inhabitants first, and finally was communicated to some soldiers of the British garrison, then in Valetta."

"Sir A. B. Faulkner, then physician to the forces in the island of Malta, has published an account of this epidemical visitation. From his volume we select the following case, which occurred to Mr. Stafford, a regimental surgeon, who attended the man. Its date was the 16th of July, 1813, and the name of the sufferer was Robert Clark, aged about 24. Spare habit, lively disposition—had never been in hospital previously—had mounted guard this morning, after a minute naked inspection, when not a suspicious spot was to be seen on his body or extremities. His feet and hands had been carefully washed. About noon, Mr. S. says, I was sent for to visit him, he having been taken suddenly lame, while on sentry. On examining him, I found a small pimple in appearance, between the large and next toe of the right foot. The pain he declared to be excessive, and likened it to a burning coal. Whilst inspecting it, I could discover rising from it a red streak, which speedily ascended up the inside of the leg: and very soon after, a swelling took place in the inferior inguinal gland."

We need not quote the ensuing description of the disease,

We need not quote the ensuing description of the disease, as it differs in no respect from ordinary plague cases. But the really interesting part of the narrative is as follows :-

"His description of the first attack was this: -that he was standing "His description of the first attack was this:—that he was standing sentry on the top of the arch, through which was the only passage from the city of Valetta, into the country: that a pest-cart had that instant passed through heavily laden with dead bodies, from which proceeded a horrid smell: that the attack was instantaneous, as though he had been shot. I was instantly sent for, and was with him within three minutes, my quarters being near his post. My opinion (Mr. Stafford says) was, that from some defect in his shoe, some pest dust had got in, and was the true cause of his complaint. He had mounted guard at 7 o'clock in the morning, and had marched half a mile from his barrack to his post. to his post.
"Now, as Mr. Stafford does not inform us what that is which he calls

row, as Mr. Stanford does not inform as what that is wind the calls produce such an effect, I think we are fully warranted in concluding that this pimple on the foot had been caused by the stiny of something tiring, and that this living substance was, in fact, an insect of some sort, which had escaped from the dead bodies contained in the pest cart, as it passed beneath the arch, and which slung the sentry in the foot, as just stated!!"

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 7648 births and 5167 deaths were registered during the week ending Nov. 27th. The annual rate of mortality in these towns, which had steadily increased in the four preceding weeks from 12.0 to 14.6 per 1000, further rose to 16.4 in the week under notice, and exceeded the rate recorded in any week since the middle of April last. During the first eight weeks of the current quarter the annual death-rate in these towns averaged 13.4 per 1000, and in London the mean rate during the same period was 13.2. The lowest annual rates of mortality recorded in the 76 towns last week were 8.2 in Reading, 8.6 in Bournemouth, 8.9 in Handsworth, and 9.9 in Barrow-in-Furness; the rates in the other towns ranged upwards, however, to 26.5 in Wigan, 27.3 in Hanley and in Merthyr Tydfil, and 29.2 in Swansea. In London the recorded death-rate last week was equal to 15.6 per 1000. The 5167 deaths registered in the 76 towns last week showed a further increase of 561 upon the numbers returned in the four preceding weeks, and included 278 which were referred to the principal epidemic diseases, against 261 and 281 in the two preceding weeks; of these 278 deaths, 61 resulted from whooping-cough, 58 from diphtheria, 55 from diarrhoea, 44 from measles, 41 from scarlet fever, and 19 from "fever (principally enteric), but not one from small-pox. annual death-rate from these epidemic diseases last week was equal to 0.9 per 1000, against 0.8 and 0.9 in the two previous weeks. No death from any of these epidemic diseases was registered last week in Cardiff, Gateshead, is singular with what ingenuity Dr. Neale has brought a Brighton, Derby, Preston, or in eight other smaller towns;

the annual death-rates therefrom ranged upwards, how-Tydfil. The deaths from whooping-cough in the 76 towns, which had been 31, 48, and 69 in the three preceding weeks, declined again to 61 last week; the highest approach to the state of th annual rates from this disease during the week were 1 2 per 1000 in Aston Manor, 1.3 in Merthyr Tydfil, and 1.5 in Hastings. The 58 deaths referred to diphtheria showed a further increase upon recent weekly numbers, and included 20 in London and its suburban districts, 3 in Portsmouth, 4 in Manchester and Salford, 5 in Birmingham and King's Norton, and 2 each in Plymouth, Bristol, and Nottingham. The 55 deaths attributed to diarrhoea showed a further considerable decline from the numbers in recent weeks. The 44 fatal cases of measles were within one of the number in the previous week; the highest annual rates from this disease last week were 1.6 in Swansea, 2.3 in Hanley, and 2.7 in Northampton. The deaths from scarlet fever, which had been 44 and 28 in the two preceding weeks, rose again to 41 last week, and showed the greatest proportional fatality in Wigan and and the States proportion rate of the Yellow in Merthyr Tydfil; 11 fatal cases were recorded in London and its suburban districts, 6 in Manchester and Salford, and 4 in Sheffield. The 19 deaths referred to "fever" corresponded with the number in the previous week. The number of scarlet fever patients under treatment in the Metropolitan Asylums and London Fever Hospitals, which had declined during the six preceding weeks from 2810 to 2606, had further fallen to 2158 on Saturday last; 264 new cases of this disease were admitted to these hospitals during last week, against 284 and 308 in the two preceding weeks. The Metropolitan Asylums Hospitals contained 4 cases of small-pox on Saturday last. Of the 1442 deaths registered in London last week, 387 were referred to pneumonia and other diseases of the respiratory system, against numbers increasing from 167 to 283 in the six preceding weeks; these 387 deaths exceeded by 15 the corrected average number in the corresponding week of the five years 1904-08. The causes of 48, or 0.9 per cent., of the deaths registered last week in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death registered last week were duly certified in London, Leeds, Bristol, Newcastle-on-Type, Nottingham, Leicester, and in 44 smaller towns; the 48 uncertified causes of death in the 76 towns last week included 9 in Liverpool, 7 in Birmingham, and 3 in Gateshead.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 849 births and 866 deaths were registered during the week ending Nov. 27th. The annual rate of mortality in these towns, which had steadily increased in the four preceding weeks from 12.9 to 19.8 per 1000, further rose to 24.2 in the week under notice. During the first eight weeks of the current quarter the annual death-rate in these Scotch towns averaged 15.7 per 1000, and exceeded by 2.3 the mean rate during the same period in the 76 largest English towns. The annual death-rates last week in these Scotch towns ranged from 11.5 and 13.4 in Greenock and Leith, to 18.8 in Edinburgh and 32.7 in Glasgow. The 866 deaths from all causes in the eight towns last week showed a further increase of 158 upon the numbers returned in the four preceding weeks, and included 98 which were referred to the principal epidemic diseases, against 66 and 77 in the two previous weeks. These 98 deaths were equal to an annual rate of 2.7 per 1000; the mean rate from the same diseases last week in the 76 English towns did not exceed 0.9 per 1000. The 98 deaths from these diseases in the Scotch towns last week included 49 from measles, 16 from diarrhea, 13 from diphtheria, 9 from whooping-cough, 7 from scarlet fever, and 4 from "fever," but not one from small-pox. The fatal cases of measles which had been 24, 22, and 36 in the three preceding weeks, further rose last week to 49, of which 45 occurred in Glasgow and 4 in Edinburgh. The 16 deaths attributed to diarrhoea showed an increase of six upon the number in the previous week, and included 8 in Glasgow, 4 in Edinburgh, and 2 in Paisley. The 13 deaths referred to diphtheria exceeded the numbers in either of the two preceding weeks; 6 were recorded in Glasgow, 4 in Edinburgh, and 2 in Aberdeen.

7 deaths from scarlet fever occurred in Glasgow. The 4 deaths referred to "fever" included 3 in Glasgow certified as enteric, and 1 from cerebro-spinal meningitis in Edinburgh. The deaths referred to diseases of the respiratory system in the eight towns, which had increased in the four preceding weeks from 68 to 195, further rose last week to 298, and exceeded by 165 the number registered in the corresponding week of last year. The causes of 28, or 3 · 2 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0 · 9 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,142,308 persons, 563 births and 460 deaths were registered during the week ending Nov. 27th. The mean annual rate of mortality in these towns, which had steadily increased in the fivepreceding weeks from 14.8 to 20.0 per 1000, further rose to 21.0 in the week under notice. During the first eight weeks of the current quarter the annual death-rate in these Irish towns averaged 17.4 per 1000, whereas the mean death-rate during the same period did not exceed 13.4 in the 76 largest English towns, and 15.7 in the eight principal Scotch towns. The annual death-rate last week was equal to 20.7 in Dublin (against 15.6 in London), 22.5 in Belfast, 26.0 in Cork, 13.3 in Londonderry, 16.4 in Limerick, and 25.3 in Waterford; the mean rate last week in the 16 smallest of the Irish town districts was equal to 18.9 per 1000. The 460 deaths from all causes in the 22 town districts last week showed a further increase of 21 upon the numbers returned in the five preceding weeks, and included 21 which were referred to the principal epidemic diseases, against 20 and 18 in the two previous weeks; these 21 deaths were equal to an annual rate of 1.0 per 1000; in the 76 English towns the mean rate from the same diseases last week was 0.9, and in the eight principal Scotch towns was 2.7 per 1000. The 21 deaths from these epidemic diseases in the Irish towns last week included 8 from whooping-cough, 6 from diarrhoea, 2 each from measles, scarlet fever, and enteric fever, and 1 from diphtheria, but not one from small-pox. The 8 fatal cases of whooping-cough exceeded by 2 the number in the previous week, and included 7 in Belfast. The 6 deaths attributed to diarrhoea, of which 3 occurred in Dublin, showed a further decline from the numbers in recent weeks. The 2 fatal cases of measles and 1 of the 2 deaths from scarlet fever occurred in Dublin. Of the 2 deaths from enteric fever, 1 each was returned in Dublin and in Cork. The deaths referred in the 22 towns to pneumonia and other diseases of the respiratory system, which had steadily increased in the five preceding weeks from 50 to 110, declined to 101 last week. The causes of 12, er 2.6 per cent., of the deaths registered in these Irish towns last week were not certified by a registered medical practitioner or by a coroner; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0.9 per cent., while in the eight Scotch towns it was 3.2 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointment is notified:—Staff-Surgeon F. F. Lobb to the Victory, additional, for disposal.

ROYAL ARMY MEDICAL CORPS.

Colonel F. B. Maclean has been appointed Principal Medical Officer, 7th (Meerut) Division, vice Colonel O. E. P. Lloyd, V.C., promoted Surgeon-General and appointed Principal Medical Officer, South Africa. Lieutenant-Colonel H. J. Fletcher will officiate as Principal Medical Officer, Abbottabad and Sialkot Brigades, vice Colonel Lyons, I.M.S.

INDIAN MEDICAL SERVICE.

Paisley. The 13 deaths referred to diphtheria exceeded the numbers in either of the two preceding weeks; 6 were recorded in Glasgow, 4 in Edinburgh, and 2 in Aberdeen. All the 9 fatal cases of whooping-cough and 5 of the Government of Burma, has been permitted to return to duty

within the period of his leave. Captain A. D. White has been appointed as a specialist in advanced operative surgery, 8th (Lucknow) Division.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Supplementary List: The undermentioned to be Lieutenants (on probation): George Rollason (dated Oct. 25th, 1909) and John Fraser (dated Nov. 1st, 1909).

TERRITORIAL FORCE.

Royal Army Medical Corps.

3rd North Midland Field Ambulance: Lieutenant George J. S. Atkinson resigns his commission (dated Oct. 23rd, 1909).

Attached to Units other than Medical Units.—Captain James H. Hunter resigns his commission (dated Oct. 15th, 1909).

HONORARY SURGEON TO THE KING.

Surgeon-General William L. Gubbins, C.B., M.V.O., Deputy Director-General, Army Medical Service, has been appointed an Honorary Surgeon to the King, vice Brigade Surgeon-Lieutenant-Colonel and Brevet Colonel C. E. Harrison, C.V.O., retired.

THE SECUNDERABAD GARRISON.

The Secunderabad correspondent of the Pioneer of Oct. 29th states that "There left by Calcutta mail to-day Lieutenant-Colonel E. Butt, R.A.M.C., who has just vacated the senior medical officership of Secunderabad station hospital on promotion as P.M.O Calcutta Colonel Butt has only been a few months in Secunderabad, but in that time he has accomplished some remarkable improvements in sanitation and reduced to a minimum diseases which for years have been very prevalent in the garrison here. The garrison is, in fact, in a healthier condition than ever it has been before. Whereas the prevalence of enteric fever had battled the skill of many of his clever predecessors, there have only been three cases since Colonel Butt's advent. The remarkable declination in disease is due to Colonel Butt's method of going to the root of sanitary evils, and although the troops were at first inclined to resent the rigorous measures adopted, all admit now that his methods have had a miraculous effect. Colonel Butt was the recipient of many farewell dinners, and his departure is much regretted.'

THE ARMY AND NAVY MALE NURSES' COOPERATION.

The second annual meeting of the Army and Navy Male Nurses' Cooperation, of which Her Majesty the Queen is patroness, was held at the Grafton Galleries, Piccadilly, on Nov. 29th, when Princess Louise, Duchess of Argyll, who was accompanied by the Duke of Argyll, was present. Sir William H. Allchin, in presenting the annual report, said that very satisfactory progress had been made during the year. The number of cases nursed was 300, being an increase of 108 over the previous year. The great progress that had been made was due in a large measure to the sympathetic attitude of the medical profession, and he hoped that the cooperation would soon be placed on a self-supporting basis. The Queen had shown her practical sympathy by sending a donation of £100. The War Office and the Admiralty had also greatly assisted the movement. The honour of founding the society belonged to Miss Ethel McCaul. aided by Sir Frederick Treves, and the cooperation of the heads of the medical departments of the navy and the army had enabled the committee to supply the public with suitable and reliable male nurses. The Duke of Argyll expressed the great interest which the Princess took in the work, and remarked on the necessity of preventing men who had obtained good nursing experience from drifting into the ranks of the unemployed. Colonel Sir Edward Ward, in the unavoidable absence of Sir Alfred Keogh, Director-General of the Army Medical Service, thanked Her Royal Highness for her interest in the work of male nurses, and said that Mr. Haldane and his colleagues at the War Office were deeply interested in the movement. Inspector-General J. Porter, the Director-General of the Medical Department of the Royal Navy, who followed, said that the nurses trained in the navy were second to none. He hoped that the cooperation would soon have three or four hundred nurses, who as reserve men would be able to help the country in time of need.

Correspondence.

"Audi alteram partem."

STATUS LYMPHATICUS.

To the Editor of THE LANCET.

SIR,-My services, as a medical expert witness, having been requisitioned by Messrs. McKenna and Co., solicitors for Messrs. Harrods, Limited, who were instructed to defend the case of Rex r. Clarke and Eardley re the sudden death of Miss Helenora Catherine Horn-Elphinstone Dalrymple while undergoing a dry shampoo with carbon tetrachloride on July 12th, 1909, and the case for the prosecution having now been withdrawn after a protracted hearing, for certain reasons to follow, I find myself prompted to write this letter for publication. The objects of such a prosecution are, of course, not a matter for me, and I only desire to deal with the case from a medical point of view. With regard to the danger of the use of carbon tetrachloride there can be no question about this or about the inadvisability of such "shampooing" being administered to any member of the public who likes to ask for it, but, in the particular case in point, had the defence been heard, I think it would have served to bring home a very important object-lesson to the medical profession—namely, that the status lymphaticus problem is a much more serious one than the majority suppose. It seems apparent to me and to others that the prosecution in furthering its objects lest sight of the all-important status lymphaticus factor. True, these desirable objects may have been attained and a warning note sounded to the hairdressing trade, but this has, in my opinion, only been accomplished by practically overlooking the "real" cause of death namely, lymphatism.

Doubtless there are cases in which people have been convicted of very serious charges when, in fact, death was due to this disease, and a number of cases are on record where nursemaids or relatives have been charged with suffocating or fatally maltreating children, the true cause of death found at the necropsy being lymphatism. The presence post mortem of the typical pathological picture of the disease justly should be prima-facie evidence of death from natural cases. In these days of deaths under anæsthetics the investigation of the disease is of the utmost importance, and I feel thoroughly convinced that if a Royal Commission should be appointed, as has been mooted, for the investigation of the subject, the status lymphaticus problem will be found to be one of the most important it will have to contend with. As it is, when one of these unfortunate tragedies occurs in the practice of a medical man with limited experience aspersions are sometimes cast on his professional capabilities, and probably an irreparable stain on his character results. For over three years now I have constantly given a great deal of thought to the subject. Very little is written or known about the disease, but on every possible occasion I have gathered all the information I could. Having personally met with six cases of sudden death from it in two and a half years, and in most of these instances having myself known and physically examined the subjects during life and made the post-mortem examinations after death, I have been able to draw certain deductions. I wrote a paper on the subject which was published in THE LANCET of Dec. 26th, 1908, and Jan. 9th, 1909, headed "Clinical and Post-mortem Observations on the Status Lymphaticus, with Deductions, and a Plea against the Maligning of Ethyl Chloride as a General Anæsthetic," and also another article to the Journal of the Medico-Psychological Association entitled "The Clinical and Post-mortem Aspects of the Status Lymphaticus," which was published in their quarterly journal of July, 1909. Notes, both before and after death, of all six cases are fully reported in these papers. The existence of the status lymphaticus undoubtedly in large measure accounts for the partial disrepute into which ethyl chloride has temporarily fallen, and its existence, too, has in certain circumstances brought ill-repute to a practice of such national importance as vaccination. I have known of such cases. For these reasons, also, it is a great pity that the status lymphaticus factor in "the fatal shampoo case" should not have been more fully discussed. I quite recognise the

raison d'être of the prosecution, but I cannot help thinking that on the all-important medical point above alluded to the evidence was misconceived, and this is one of the principal reasons which prompt me to write this letter; and here again I would like to emphasise the fact that it is to be construed in nowise controverting the undisputed toxicity of commercial carbon tetrachloride.

The question was, "What was, very roughly, likely to have been the actual volume of vapour given off and remaining in the cubicle at Messrs. Harrods at the time when Miss Dalrymple was being shampooed?" And this would depend mainly upon five factors—viz., (1) the area of evaporating surface; (2) the temperature of the room; (3) the velocity, direction, and area covered by the evaporating draught; (4) the size and position of the exits for escape of the vapour; and (5) the time during which evaporation was taking and (5) the time during which evaporation was taking place. Professor Pepper stated in his evidence that "the thought death was due partly to the heart and partly to the respiration, partly by the carbon tetrachloride acting as a poison on the heart, and partly by its effect on respiration." From the latter half of this opinion my convictions compel me to dissent, and I mention the fact because there is no disease of greater medico-legal importance than the status lymphaticus. In the case in question there was reasonable evidence to show that Miss Dalrymple's life was extinct before she was laid on the floor. The sequence of events at the catastrophe and even the post-mortem facts, as recorded at the inquest, strongly support such a view. I do not believe that Miss Dalrymple could have breathed any carbon tetrachloride vapour, and when making such a definite statement I at least feel that I have substantial reasons for doing so. would like it to be clearly understood, too, that my purpose in attempting to prove this, and that Miss Dalrymple's death was due entirely to lymphatism plus the effect of shock, is ostensibly for the sole object of drawing attention to this ill-understood disease instead of otherwise allowing it to received another set-back.

On Tuesday, Sept. 21st, I made certain experiments at Messrs. Harrods, Limited, in the room in which, I understand, Miss Dalrymple's death took place. In one experiment I requested that Miss Beatrice Clarke should have her hair dry-shampooed with tetrachloride in my presence, and that everything should be arranged and done exactly as it was in Miss Dalrymple's case. I particularly noticed the moment the vapour reached Miss Clarke's nose and mouth, and to achieve this end I kept my nose just in front of Miss Clarke's nose and mouth for the first four or five minutes, until the whole of 16 ounces of the carbon tetrachloride solution had been used, and the shampooing process practically completed. I was satisfied that I could detect no trace of tetrachloride vapour for the first three or four minutes at least, and that none could have reached Miss Clarke's face during this periodi.e., till the whole of the 16 ounces had been used-and I was prepared to state this fact on my sworn testimony. After this period, and if the door of the cubicle was closed, it was possible, and indeed most probable, that some of the vapour would reach the face of the person being shampooed (for quite explicable reasons), but this is entirely another matter. The ventilation of the actual cubicle was excellent. The fan used for the purpose of blowing the tetrachloride fumes away from the face of the person being shampooed was situate on her left side front, and the cylindrical tube, through which the blast of air was fired, was of about 3 inches in diameter, the nozzle of which would be approximately 3½ feet distant from the face of the person being operated upon and its direction in adjusted alignment with her head and the open door of the cubicle a few feet beyond. As the area covered by the current at 3½ feet forms a circle of just over a foot in diameter, and which circle coincides with the face, it is impossible to conceive how the vapour could fight its way in the teeth of such a gale, and get from the back of the head to the front of the face, not even from the hair just over the forehead, since in the shampooing position the latter is in a plane posterior to that of the nose and mouth. I understand that carbon tetrachloride was being used in numerous ladies' hairdressing establishments all over London, and in many instances where

nothing like such elaborate precautions obtained.

On my interrogation of Miss Beatrice Clarke I elicited from her that the sequence of events at the tragic catastrophe, as she observed them, was as follows. The first

thing that Miss Clarke noticed was Miss Dalrymple's hands falling limply from her face. This occurred approximately about one to two minutes only after commencing to pour the solution on her hair, and when about 4 ounces only of the tetrachloride solution had been used. Miss Dalrymple was at the time holding a small towel over her forehead, and this of course, falling with her hands, disclosed the next thing which Miss Clarke noticed in the looking-glass opposite them both—namely, that Miss Dalrymple was looking very pale. Miss Dalrymple had previously looked rather pale, but her pallor was much increased. Miss Clarke states that almost immediately after this observation the pallor suddenly became extreme, and Miss Dalrymple's head and body at the same time fell forwards. Miss Clarke at once tried to steady her, but found that she was unable to do this owing to Miss Dalrymple's general and very marked limpness, and it was at this stage that Miss Clarke became alarmed. Being unable to prop her up, she laid her on the floor and ran out of the cubicle for assistance. Miss Clarke hurried back in a comparatively few seconds, and then noticed a dusky leaden blueness about the face, and Miss Clarke further volunteered that this peculiar blueness was more noticable at the back of the neck-Miss Dalrymple was at the time laid on her back. Miss Clarke neither saw nor heard any breathing movements, and did not notice whether the pupils of Miss Dalrymple's eyes were either large or small, nor does she know whether her eyes were light or dark. Miss Clarke states that prior to commencing the shampooing process she informed Miss Dalrymple that the fumes might make her feel a little faint.

Now, from such a sequence of events, and also from the post-mortem notes, as recorded at the inquest, I firmly contend that Miss Dalrymple was dead before her body was laid on the floor, and that she could not have breathed any carbon tetrachloride fumes. My reasons are the following. The first ominous signs were noticed approximately "one to two minutes" after commencing the shampoo process, when about "four ounces only" of the solution had been poured on the hair. Also, I understand, the door of the cubicle was open at the time, and in which circumstance the greater part of the vapour would be blown on and out of this doorway. The sequence of events indicates a "quasi-acute" case of lymphatism and one in which both cardiac and respiratory functions must have ceased practically simultaneously, and it does this: 1. Because of the great rapidity with which the ominous signs succeeded one another. 2. Because sudden and extreme pallor was the first and most striking feature of the fatal termination and not cyanosis—which would have indicated that the respiratory centre was being affected either before or to a greater extent than the cardiac centre; and it is in the first-mentioned condition-i.e., when both cardiac and respiratory centres are seized suddenly and simultaneously or when the cardiac centre is either affected first or to a greater extent than the respiratory centre—that death is so very sudden. 3. Because a blue discolouration became evident the moment Miss Dalrymple's body was laid on the floor, consequently it supervened very quickly and became more noticeable in the face when in the recumbent posture. 4. Because the "blueness" was a dusky-leaden blueness and more noticeable at the back of the neck, possibly from hypostasis. 5. Because of the extremely marked degree of flaccidity that very suddenly and very rapidly manifested itself.

6. Because no audible or visible respiratory gasps were noticed. 7. Because Miss Dalrymple's sudden death is perfectly comparable with three other quasi-acute cases of my own observation -reported fully in THE LANCET and Journal of Mental Science - in which death was equally sudden, the exciting causes equally insignificant, and in which the necropsy disclosed pathological changes such as are consistent with lymphatism and lymphatism only.

The post-mortem facts, as recorded at the inquest, indicate the same: 1. Because rigor mortis was chiefly present in the lower extremities, suggesting a sudden death in which the muscles of the legs, which had probably been most exercised just before the fatality, were being chiefly affected. 2. Because there was a livid discolouration of the face and head, indicating sudden death, and probably the same lividity that was becoming evidenced even while on the floor at Messrs. Harrods' hair-dressing department. 3. Because the heart cavities were dilated and the muscle degenerated, also because the arteries of the heart were very narrow.

¹ Depositions say, "Hardly two minutes, I should think,"

indicating a well-marked or quasi-acute case of lymphatism, and one in which both respiratory and cardiac centres are usually affected suddenly and more or less synchronously, with the inevitable result, sudden death. 4. Because the kidneys were a little congested, to me another indication of a quasi-acute example of the status lymphaticus. 5. Because the lungs were congested—a point that I have commented on before in such cases of sudden death from lymphatism.

At the inquest no notes were recorded as to whether the glands in the mesentery were dark or pale pink in colour; whether they were uniformly large or uniformly small whether there was or was not any general enlargement of the smaller peripheral mesenteric glands; and whether some groups of glands were larger and paler than others. Also the condition of the miliary lymphatics in the stomach, cesophagus, and intestines was not recorded. All these points might possibly have thrown further light on the case. The cavities of the heart presumably did not contain any noticeable quantity of blood, since no mention is made that they did, and I consequently surmise that it is not improbable that its action ceased during systole, as it usually does in such cases. In THE LANCET of Dec. 26th, 1908, I drew attention to the fact that of deaths occurring while under general anæsthetics from the status lymphaticus the catastrophes always happened during light anæsthesia, either before reaching, or on recovery from, the third stage of narcosis. In some instances where chloroform has been administered for an hour or more during a protracted operation, although no untoward symptoms may have been present at any time during the whole of the administration, nevertheless, just as the patient is beginning to come round and the last few skin sutures are being inserted he may suddenly die.

From this, and also in consideration of the extremely trivial firing-off causes that may be sufficient to give rise to a fulminating termination resulting in sudden death, I argue that the effects of shock in such cases are probably of more importance than the effect of the narcotic. In Miss Dalrymple's case, shock, caused by cognisance of the fear that she might feel faint, subsequently reinforced by the shock of the cold lotion applied to her head, would be, at a coincidently critical period, quite a potent enough exciting cause of sudden death. In conclusion, I was sorry that both Miss Dalrymple's former medical attendant and the coroner's jury should have attributed this sad and unfortunate disaster to "Death from misadventure," when surely the true verdict should have been one of "Death from natural causes."

Since writing the above I have read with great interest the letter of Dr. Donald J. Munro published in THE LANCET of Nov. 13th (p. 1468), and I would here like to take the opportunity of endorsing many of his views. practical purposes the first point of paramount importance is the question of diagnosis, and in this connexion may I be allowed to suggest some modifications of Dr. Munro's restrictions of the term "status lymphaticus"? opinion the five following physical signs and symptoms are the most important and are arranged in order of merit. 1. Signs of a persistent thymus gland as evidenced by a lowering of the upper border of superficial cardiac dulness in the absence of emphysema of the lungs, or old tuberculous cavities at its bases, with or without fulness of the episternal notch, and not by a dulness to percussion behind the manubrium. This region may even be a little hyper-resonant, and if dulness is present it is probably due to some new growth, and not to a simple hyperplasia of the thymus gland. 2. An uniform prominence of all the papillæ of the tongue, especially the circumvallate papillæ, between which and the epiglottis posteriorly there is frequently present a great multiplication, hypertrophy, and hyperplasia of all the lymphatic nodules, giving rise to a very characteristic picture, many of these sessile nodules measuring about 1-8th to 3-16ths of an inch in diameter at their bases; the condition cannot be seen without the aid of forehead and laryngoscopic mirrors. 3. A symmetrical enlargement of the thyroid gland. 4. Distant and muffled heart sounds, with absence of the sharply defined click caused by closure of the valves, associated the sharply defined click caused by closure of the valves, associated the sharply defined click caused by closure of the valves, associated the sharply defined click caused by closure of the valves, associated the sharply defined click caused by closure of the valves, associated the sharply defined click caused by closure of the valves, associated the sharply defined click caused by closure of the valves, associated the sharply defined click caused by closure of the valves. ciated with a soft, weak, and ill-sustained pulse, and, as Dr. Munro states, often abnormally slow and inexcitable. 5. A greater or less amount of hyperplasia of any or all of the faucial, pharyngeal, and lingual tonsils, also of the uvula, and the presence of adenoid growths in either very small or

large quantities. Either or both the liver and spleen may, or may not, be enlarged, and to such a variable extent that no reliance can be placed on the absence of physical signs of enlargement, and very little indeed on the presence of the same. The pupils of the eyes also may appear rather dilated. The co-existence of 1 and 2 is pathognomonic of the disease.

Lastly, I cannot agree with Dr. Munro when he says, "No clinical observation has ever been so hopelessly mistaken as that which stated that pregnancy conferred immunity from the poisonous effects of chloroform." True, there are here more factors than one tending to produce an overdose of the vapour, but the anæsthetist is prepared for this. Despite the mechanical embarrassment to respiration, as Dr. Munro says, the heart is stronger than normal, and the increased carrying capacity of the red blood corpusele I would regard as a "virtue" rather than a "vice." This factor, coupled with the toxemia from over-metabolism, probably in large measure accounts for the reason that so little chloroform is necessary to produce and maintain an efficient and safe anæsthesia during parturition. Is it not sometimes advisable to artificially produce a toxemia by giving a hypodermic injection of morphine preparatory to the administration of chloroform? Probably if one had to maintain surgical anæsthesia or the third stage of narcosis during parturition it would not be as safe as it would be apart from the condition, but surely "light" anæsthesia is much safer at such a time than it is at any other.

I am, Sir, yours faithfully,
R. ERNEST HUMPHRY, M.R.C.S. Eng.,
L.R.C.P. Lond.

Northwood, Middlesex, Nov. 15th, 1909.

CIVILISATION AND THE CORSET.

To the Editor of THE LANCET.

SIR,-May I correct an impression which Mr. Heather Bigg conveys in his communication on the above subject? He seems to think that men in "sultry and atonic countries"—I wonder what he means by an atonic country?— "gird the loins" with a view of supporting nature's incompetent abdominal walls." Some years ago I unexpectedly met in Calcutta a very distinguished London surgeon, an old fellow-student, who was spending his summer holiday in going to India to personally see a thing of which he heard in connexion with native customs; if Mr. Bigg would follow that example he would see personally that "girding of the loins" has nothing whatever to do with artificial support. He need not go beyond Aden, where he will see the Arab camel-drivers coming in from the desert, among whom he will see magnificent specimens of activity. "Girding of the loins" really means girding of the loin cloth, which is wrapped round the body, passed through the legs, and tucked in at the waist, and is no more worn for the purpose of support than our trousers are so worn; nor, if it were conceivably the object, could it be obtained in any better degree than by our trousers. It is obvious that the cloth is liable to work loose, being only tucked in, and "girding of the loins" means readjusting it and tucking it in again, and the object corresponds to our object in wearing braces. Natives of India, whether fighting as uniformed Sepoys or in their native garb, Britishers, whether fighting or engaging in friendly contests, do not wear, and do not need, any artificial support. I do not wish to contend for or against the use of corsets, the women will settle that for themselves apart from contradictory statements and opinions of the profession, but I do wish to correct an impression which may mislead others in supposing that in a country like India—if Mr. Bigg calls that an atonic country, and a visit there will correct him on that point-men have to wear artificial support for their loins and abdomens. The impression might lead to the thought that it is necessary in this country, though not among those accustomed to, or knowing anything about, exercise. Fancy a Marathon runner running in an abdominal belt!

In conclusion, I may go one point further and say that which is demonstrable—namely, that where the natural muscular support of the loins and abdomen is deficient from want of tone, the best way of preventing recovery of tone is to provide artificial support, and in no cases is this so lamentably obvious as in the indiscriminate ordering of

supports for spinal cases, and I am constantly engaged in undoing the evil done in such cases, which evil admits of easy demonstration .- I am, Sir, yours faithfully

H. E. DEANE, Lieut Col., R.A.M.C. (retired). Weymouth-street, W., Nov. 29th, 1909.

To the Editor of THE LANCET.

SIR.—I read with great interest an article in THE LANCET of Nov. 13th, entitled, "Civilisation in Relation to the Abdominal Viscera," which opens up a subject of wide and ever-increasing importance. During the last year I have made a careful observation of a large number of cases varying in age from 15 to 50 years, having regard to those conditions which are said to result from chronic intestinal stasis, and I am bound to confess the existence of those conditions is confirmed by systematic examination. In hospital work we are able more accurately to estimate the severity and chronicity of constipation, and I should like very briefly to repeat some of the points which have been recorded in your columns and which have struck me most forcibly.

The worn and haggard appearance, the absence of muscular tone, the pigmentation of the skin in definite places, and the peculiar odour of auto-intoxication are most characteristic. Pigmentation is an early symptom and this staining may be very marked at a time when signs of degeneration are only just beginning to appear. Most constant and remarkable are the changes in the breasts, which at first feel lumpy and later show cystic degeneration.

There is a point in connexion with this which arrests attention, and that is that this cystic degeneration does not take place in married women who are having habitual intercourse. A striking illustration of this presented itself to me a short time ago. A married woman, who had one child, 15 years old, was admitted, having received a slight injury to the right breast a few days before. The patient, who had for many years been subject to chronic constipation, showed extensive cystic changes in both breasts. On inquiry it transpired that she had had no intercourse with her husband for 14 years.

Pregnancy has a beneficial effect on constipation; the enlargement of the uterus so alters the mechanics of the abdomen that the bowel can mere easily empty itself. Recently I had a typical instance of this. A woman, aged 39 years, was the mother of 14 children. She had been subject all her life to chronic constipation, except during her pregnancies when there was a daily evacuation and a consequent general improvement in health. The almost universal wasting that follows a long history of stasis is a prominent feature. Frequently these patients will say that up to the age of 19 or 20 they were stout, but that afterwards they gradually began to lose flesh until at the age of 35 to 40 they become very thin and wasted.

Enfeebled circulation with cold hands and cold feet is a source of great discomfort to the habitually constipated. Pain is always present, though it varies in position and severity and there are periodical remissions. These people are admitted into a hospital for various reasons. Loss of flesh, loss of appetite, indigestion, abdominal pain, vomiting, displacements of the uterus from loss of fat, sleeplessness, nervous depression are some of the numerous symptoms complained of. With painful monotony it is found that a long history of chronic constipation is given. They show some temporary improvement from treatment in bed, due in a slight measure to a daily purging, but chiefly to the assumption of the recumbent posture. It is surely not difficult to believe that a system whose resisting power is so lowered by auto-intoxication becomes an easy prey to the tubercle bacillus and other organisms.

These are some of the effects briefly enumerated which cannot fail to be noticed on methodical examination.

I am, Sir, yours faithfully,

Lewisham, Nov. 18th, 1909.

H. M. M. WOODWARD.

THE JUBILEE OF THE DENTAL CHARTER To the Editor of THE LANCET.

SIR, -The dental surgeons have shown themselves desirous of commemorating the Jubilee of their Charter, and the Royal College of Surgeons of England, as the first examining body to grant degrees in dental surgery, has endeavoured to show its interest in this branch of the profession, first, by accepting the trust of the Odontological Museum, which is

now accommodated in a room adjacent to the Hunterian collection; and, secondly, by entertaining the leading members of the profession at a dinner within the precincts of the College. I would venture to suggest that this movement might well be directed towards a more permanent memorial of the Jubilee of the Dental Charter by establishing a research scholarship and demonstratorship in connexion with the Dental Museum. There are already two small endowed prizes, the Tomes and Cartwright prizes, administered by the College, the one awarded every third and the other every fifth year; but the dental profession is deserving of something of a much wider scope than these for the stimulation of research and for the higher teaching of its scientific branches. My own view favours a far more ambitious scheme than anything in the form of a mere prize, whether awarded after examination or conferred in recognition of original work completed. I would ask for the modest sum of £10,000 to endow a research and teaching demonstratorship in connection with the Dental Museum. In this way not only would a scientific worker be secured, but he would by his demonstrations attract the students from the various dental hospitals to study in the Dental Museum. Such a sum could, I am sure, be easily collected from among the dental surgeons alone; but if they were to impress upon their patients the necessity of endowing dental research there need be no hesitation in raising the sum I have suggested to £50,000, whereby not only research and teaching demonstratorships might be established, but travelling scholarships might be founded which would be of great advantage in keeping English dentistry in touch with that of foreign countries.

It is some 25 years ago since I first began to advocate the bringing of the dental surgeons back within the pale of the profession and giving them the same opportunities as ophthalmic, aural, and other specialists. One could scarcely have anticipated so encouraging a development as has occurred within so short a period. The dental surgeons have not been slow of late to seize the occasions for better recognition, and by placing the Odontological Society under the ægis of the Royal Society of Medicine, and by handing over their superb museum to the care of the Royal College of Surgeons they have shown their desire to be associated with the general body of the medical profession. Now I think the time has come for the further development of the scientific side of the branch, in which direction several members have already gained great eminence.

Should my suggestion find favour with the dental section

of our profession, I should be pleased to cooperate with any interested in this project; but it must be distinctly understood that I write quite unofficially, though I have little doubt that the Council of the Royal College of Surgeons would give its consent to the administration of such a research demonstratorship as that proposed if the money

were forthcoming for its endowment.

I am, Sir, yours faithfully,

London, W., Nov. 27th, 1909.

R. CLEMENT LUCAS.

THE TREATMENT OF MORPHINISM.

To the Editor of THE LANCET.

SIR,-I have been much interested in the letters of Dr. C. J. Douglas and Dr. Oscar Jennings which have appeared in your columns under the above heading. The subject is in reality much larger than the heading might lead one to infer, for the treatment of morphinism is but a chapter in the volume on the treatment of habit, and accordingly the question raised in respect of one drug—the proper method of treatment of its abuse—is of fundamental importance and applicable in the main to all forms of drug abuse, if not to every form of acquired evil custom.

Dr. Douglas suppresses the habit, breaks its custom, by the help of hypnotic remedies; for him "sleep solves the problem of the painless withdrawal of morphine" when the patient "awakes the painful period is passed and all desire for morphine is gone.

Dr. Oscar Jennings also suppresses the habit, breaks its custom, but by the help of the patient's own good will, in arduous operation; his method stepping in to reinforce and encourage the operation of the will during the withdrawal of the drug, and, at the same time, to lessen the arduousness of

¹ THE LANCET, Oct. 2nd, 1909.

the will effort by various means which mitigate and make bearable the bodily sufferings.

The habit is thus suppressed in either case—Which is the better method? Treatment, the best treatment, is that which secures its end, cito, tuto, et juounde, and if we use these criteria we must allow that the former method excels in the oito and picunde; the patient is rid of his habit more quickly and more pleasantly, one should say less unpleasantly, for he sleeps it off. But how stands it as to the tuto? Which is the better man? Which will confront the future more safely—he who has worked out his own deliverance, helped. it is true, but taking his share of the pains and penalties of withdrawal, or he for whom all this was done whilst he slept . Surely there can be no question as to which of the two stands more securely? And does not the *tuto* outweigh by far the *cito* and the *jucunde?* From Dr. Douglas's letter of Nov. 27th we should conclude that the will is best conserved by lying dormant, which conclusion would present us with a new law of conservation and of growth!

Surely our task is to secure the conscious cooperation of the patient in his own cure, and to do this by so apportioning the magnitude of the task to the quantity of will-power available that it, the will, shall be able to operate. this apportionment there will be ample scope for mitigants of all kinds, including drug sedatives, and this Dr. Jennings's method fully recognises. What says Hippocrates in his opening aphorism? "Oportet autem non modo seipsum exhibere que oportet facientem, sed ctiam aegrum et praesentes et externa "---which injunction we take to mean that it is necessary, not only that the physician shall play his part in the cure, but further that he shall make to cooperate the patient, and the bystanders, and the external I am, Sir, yours faithfully, surroundings.

HARRINGTON SAINSBURY.

Wimpole-street, W., Nov. 29th, 1909.

To the Editor of THE LANCET.

SIR,—In his answer to my criticism Dr. C. J. Douglas has entirely misapprehended my views. He is quite mistaken in supposing my point to be that the will is better cultivated by a painful than by a painless cure, and in taking me to be the advocate of "long-drawn-out sufferings" in what he calls the painful withdrawal period. This is exactly the reverse of what I have always maintained, as I hold that there should not be a painful period at all and that renunciation should be effected without restraint, chemical or otherwise, because without any discomfort beyond what the patient is cheerfully willing to bear. In a morphia weaning there may be two varieties of distress: (a) craving proper, which really is unbearable but which is also quite preventable; and (b) different kinds of psycho-neurotic irritability, caused chiefly by want of self-restraint and aggravated tenfold by a wrong mentality. The first should be treated by the prevention of the factors of craving in their inception or their relief by suitable therapeutic measures. The importance of the second will be in inverse ratio to the patient's resolution and docility, and his reasonable confidence in the certainty of the ultimate result, all of which are, I think, lessened by a plan which minimises the necessity for self-mastery.

I quite agree with Dr. Douglas that weakness of mind and body may be caused by the prolonged wretchedness of a badly managed wearing. Nothing, indeed, can be more demoralising, but I have frequently pointed out how this can be prevented. The patient should, however, be led to control, rather than indulge, the morbid craving for relief by medicines, for it is, I believe, a mistake to suppose that the faculties of mind and body are always strengthened by such

The conquest of pain is undoubtedly one of the glories of modern medicine, but inasmuch as suffering in psychoneurotics depends greatly on the mental attitude its suppression by drugs exclusively cannot but encourage exaggerated reliance on drugs and stimulants in moments of stress and difficulty. This is dangerous teaching. It is, I think (if the object in view is permanent recovery, and not merely temporary suppression), better to re-educate a drugaddict up to a healthier ideal, and to prove to him by enabling him to do without them that for the cure of drug disease further drugging is not indispensable.

I am, Sir, yours faithfully,

Nov. 29th, 1909. . . OSCAR JENNINGS.

THE INFLUENCE OF DIET ON THE THYROID GLAND.

To the Editor of THE LANCET.

SIR,-If I am not trespassing too much on your columns perhaps you will allow me once more to write on this subject in reply to Dr. Forsyth's letter in your issue of Nov. 27th. In his letter Dr. Forsyth very definitely suggests to your readers that a whole host of investigators have made a special study of the direct influence of diet on the thyroid gland and that none of them have found the changes I have described. This statement is hardly in accordance with fact; on the contrary, it is so inaccurate and misleading that one must conclude that it was made unwittingly. I think I am right in saying that since I first drew attention to this subject in 1904, the only investigator who has published a lengthy series of observations is Dr. Forsyth himself. When he published his results in your columns in 1907 it appeared to me that in each of the directions in which he prosecuted his study he had overlooked an important fallacy, and that therefore the conclusions which he drew might be erroneous. I am now satisfied that such is the case. In the course of the past two years I have carried out in Professor Schiffer's laboratory in the University of Edinburgh a further investigation on this subject on an even larger scale than formerly, and the results of this amply confirm my earlier investigations. When the results of the investigation are published, which I hope will be shortly, I will deal in detail with the fallacies above referred to. I will also refer to the interesting results recorded by Dr. Edmunds. And if Dr. Forsyth will now justify his statement about "a whole host of investigators" I will look forward to incorporating in my paper a full reference to the results recorded by each I am, Sir, yours faithfully, observer. CHALMERS WATSON. Edinburgh, Nov. 27th, 1909.

THE INFLUENCE OF MIND AS A THERAUPEUTIC AGENT.

To the Editor of THE LANCET.

SIR,—The position of Dr. Morison on this subject does not seem quite clear. In the first part of his letter he says that if a patient can be "restored to greater equanimity and good placing the hand on the pit of the stomach, &c.), no one could object. Later be could be a stomach, &c. could object. Later he speaks of hypnotism as tionable," and inquires if it can be brought about without change in the mental organism"? Assuredly and inquires if it can be brought about not. The experiments of Liébeault seem to demonstrate that a change does take place, and that this change is in the direction of diminished self-control, diminished will-power, and diminished reasoning powers, and thus in the direction of insanity. On the first attempt to hypnotise a patient (and I believe this is the experience of all hypnotisers) there is usually a resistance on his part which it takes some five or ten minutes to overcome. On the next and subsequent occasions this resisting power has ceased to exist, and the patient succumbs at once to the hypnotic influence. Some change has certainly taken place in the mental organism, a change indicating an enfeebled will, and tending, if not yet absolutely amounting to, a condition of induced insanity. Rational persuasion is one thing and hypnotic suggestion is another, but when the latter takes the form of inducing the patient to believe what sound reason tells him to be impossible, as that pain is non-existent, or that paraffin is a potation to be desired, it is no longer a case of reason or argument but simply one of induced insanity. Such is hypnotic suggestion. It is "the acceptance of a proposition in the absence of logically adequate grounds" through the mental influence of another. This is its essential feature, and why such action is not a criminal offence it passes the wit of man to conceive. If it is criminal to destroy human life, it must be tenfold more to destroy reason, for I have never yet seen a human being who would not rather part with life than reason. If this fact were fully recognised hypnotism would surely be condemned by all rightthinking persons both in the medical profession and out of it. It is the more execrable in that it is only the feeble minded who are subject to its influence.

These are surely no less deserving of our protection than the feeble in body. To take advantage of the feebleness of intellect of one already on the borderland of insanity to annihilate by hypnotic suggestion the little remnant of reason and will-power that remains to him is equivalent to destroying a feeble, defenceless, or injured life. The gift of reason and free-will is our most cherished possession, and I maintain that we have no more right to deprive a human being of this gift for the sake of supposed ulterior advantages than we have to destroy human life for the supposed benefit of the human race.—I am, Sir, yours faithfully,

Royal Avenue, S.W., Nov. 22nd, 1909. J. FOSTER PALMER.

A STATE DEGREE IN MEDICINE: ONE PORTAL TO THE PROFESSION.

To the Editor of THE LANCET.

SIR,—In your report of the speeches at the Lord Mayor's Day dinner at the Apothecaries' Hall you say the "Senier Warden advocated the establishment of a State University of Medicine as the single method of entering the profession, but Sir Douglas Powell pointed out that a one-faculty university was a contradiction of terms." On this point I would suggest that if a charter were granted to a State university with teaching powers (where advantageous) it certainly would not remain long with one faculty.

I cannot but think that the plan put forward by the two Royal Colleges has very little chance of success. They can scarcely hope for the assistance of either the Faculty or the Senate of the London University and must therefore rely upon the Royal Commission recommending Parliament to compel the Senate to make such alterations in the University examinations as may coincide with the views of the authorities of the two Royal Colleges. The only alternative suggested by the Colleges is the possibility of combining with some other existing university. I cannot look upon this alternative as one to be desired and naturally think that my suggestion, with perhaps some slight modification, would be a much preferable alternative and a more feasible scheme to be put before the Royal Commission.

I am, Sir, yours faithfully,

Leyfields Wood, Ashampstead, Nov. 24th, 1909. A. T. NORTON.

ON RADIUM IN THE TREATMENT OF CANCER.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Nov. 13th Mr. Butlin gives some cases of cancer treated by radium, in which the condition of the blood is not alluded to. It would have been of the greatest interest if we could have had a record of the condition of both the red and white cells before treatment, while local improvement was going on, and afterwards when the ulcerations had broken out afresh. The cases are not of the kind in which one would expect very marked blood change, but it might have been sufficiently noticeable to make it appear at least possible that, had injections of iron and arsenic been given at the same time, results might have been better.

When we know the effect on the blood in cases of cancer treated by X rays or radium, and if it turn out, as seems likely, that the improvement is entirely local, the blood not being materially affected, we may by judicious combination of X rays or radium and injections of iron and arsenic cure a greater number of cases than is at present possible by means of one or other line of treatment. Personally, I should be very grateful to anyone who can supply me with any information as to the result on the blood in cases of cancer treated by radjum or X rays.—I am, Sir, yours faithfully,

London, W., Nov. 25th, 1909.

SKENE KEITH.

THE TREATMENT OF CHRONIC ULCER OF THE LEG.

To the Editor of THE LANCET.

SIR,—Among the various treatments suggested for this condition I see no mention of the simplest and, in my experience, by far the most effective—i.e., by exposure to the air. For some years I have treated all my cases in this way, and have obtained far quicker and more lasting healing than by any

other method. In winter the rest of the limb must be kept warm and in summer the wound must be protected from flies by a cradle covered with gauze. I have also found the same treatment most effective for burns of limited area and lacerated wounds which refuse to heal.

I am, Sir, yours faithfully,

Uckfield, Sussex, Nov. 22nd, 1909.

E. H. SWEET.

MALARIAL FEVERS IN INDIA.

REPORT ON THE CONFERENCE APPOINTED BY THE GOVERNMENT OF INDIA.

(FROM A SPECIAL CORRESPONDENT.)

(Concluded from p. 1549.)

Conclusions and Recommendations.

THE conference concluded its sittings at Simla on Monday, Oct. 18th. The conclusions and recommendations have been drawn up under the following main headings:

1. Scientific investigation. 2. The agency by which investigations should be made. 3. Practical measures: (a) extirpation of mosquitoes; (b) quinine treatment and prophylaxis;

(c) education; and (d) finance.

The following is a summary of the details under the first heading (scientific investigations). It is recommended that arrangements should be made for the immediate systematic investigation of (1) distribution of malaria; (2) (a) its epidemiology and endemiology, including relation to meteorological and physiographical conditions, and (b) the life history of malaria-bearing mosquitoes; and (3) the physiological and therapeutical action of quinine and other remedies for malaria. It is recommended that vital statistics should in future be compiled by smaller units tham at present to prevent the true distribution of malaria being obscured, and that tests of registration work should be introduced in selected areas conducted by a special staff, carefully supervised. Special attention should be directed to non-endemic areas to ascertain the reasons for such immunity.

As to the investigation agency (2), it is recommended that a local organisation should be established in each province to work in consultation with the central scientific committee to be appointed by the Government of India to direct and coördinate investigations. An annual meeting of the central committee and a delegate from each organisation to be held at a convenient centre to review the work done and prepare

a programme for future work.

The practical measures (3) are divided into four sections. The first relates to the extirpation of the anopheles mosquitoes, as to which continuous investigations are recom-mended to ascertain how this can best be done at a cost not Among the measures for the extirpation of prohibitive. mosquitoes the conference make recommendations as to (1) drainage, including the restriction of wet cultivation in the vicinity of towns, if likely to breed mosquitoes;
(2) oiling with petroleum of small collections of water which contain the larvæ of anopheles mosquitoes and cannot be filled up; and (3) introduction of fish into collections of water if inquiry shows that this will check the breeding of anopheles mosquitoes. The second subsection adopts the conclusion of a subcommittee formed of members of the conference which recommended that quinine should be given in the form of sulphate or hydrochloride for adults and in a palatable form for children. Quinine should be available in tablets of five grains each, which is the proper prophylactic dose for adults. The agency for quinine distribution should, in addition to postmasters, include all grades of officials. Special efforts should be made to induce private vendors to engage in the business and a liberal commission allowed. The educated classes should be invited to organise means for spreading a knowledge of quinine among the lower classes. As further measures to disseminate knowledge, moveable camps, itinerant dispensaries, leaflets ard advertisements, especially in the vernacular press, and instruction in all grades of schools are proposed. The free distribution of quinine as a prophylactic is recommended only in cases of severe epidemics (with exceptions left to the discretion of local governments) and in the case of school children in malarial tracts during the malaria season.

On the suggestion of Sir H. Risley it is proposed that a committee of officials and non-officials to be chosen by

elected members of the new councils should be formed to spread knowledge regarding malaria and proposed preventive measures among the people. Under (e) (education) it is recommended that text-books for schools should include lessons in malaria and hygiene. Divisional and district committees and local societies should be organised similar to the league started in the Gurdaspur district of the Punjab. The sanitary department should be organised with reference to the suppression of malaria as well as to general sanitation. As to financial considerations (d) each local government is invited to make an annual assignment for malaria investigation and preventive measures, which have also a strong claim on all increases and surpluses of revenue. Municipalities and local boards are also urged to set apart funds for the prevention of malaria.

TOWN PLANNING AND THE SANITARY HISTORY OF DWELLINGS.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

PROPOSED BRITISH ADAPTATION OF THE PARIS "CASIER SANITAIRE," OR HEALTH RECORD OF EVERY DWELLING.

—THE RESULTS OF 11 YEARS' EXPERIENCE.—TUBER-CULOUS HOUSES AND CANCER HOUSES.

ONE of the clauses in the Town Planning Bill provides as follows:-

It shall be the duty of every local authority within the meaning of Part II. of the principal Act to cause to be made from time to time inspection of their district, with a view to ascertain whether any dwelling house therein is in a state so dangerous or injurious to health as to be unfit for human habitation, and for that purpose it shall be the duty of the local authority and of every officer of the local authority to comply with such regulations and to keep such records as may be prescribed by the Board.

This is in imitation or adaptation of what is known as the Casier Sanitaire des Maisons, which constitutes one of the most thorough and useful methods of sanitary control established in Paris. In 1894 the first attempts to get something like a sanitary record of houses in Paris had so far advanced that the results commenced to be recorded. On August 13th, 1898, p. 424, we published a lengthy account of the endeavour made by the Bordeaux authorities to imitate the example of Paris. By that time a full sanitary history had been drawn up of 2000 out of the 36,000 houses that then constituted the town of Bordeaux. How the investigations were made, the results recorded and rendered available for prompt reference, we described at the time. To-day in regard to Paris not only can the system be explained but it has been in full working order for a sufficient number of years to be able to form some idea of its usefulness. It is no longer the history of insanitary districts but of the entire capital, and the history of the most healthy quarters is only second in importance to that of the worst slums. But for the record kept concerning the best property we should have no standard by which to judge the extent of the evil wrought by the worst property. According to the census taken in 1901 there were in Paris 77,149 houses. To day the Bureau Administratif des Services d'Hygiene de la Ville de Paris possesses, if set down in round figures, the sanitary history of 80,000 houses, showing that all the older and nearly all the recently constructed dwellings have been duly inspected and their history noted down.

How is all this done? The service as established in Paris now works with the greatest ease, promptitude, and regularity. The sanitary history of every house is written up to date, can be found in a moment, and is never more than two days old. When a death is recorded, a contagious disease reported, a disinfection ordered, the notification of this fact, in passing from one service to another, takes 24 hours to reach the bureau of the casier sanitaire. Another 24 hours may be allowed as the utmost limit of time before the fact is entered into the casier of the house in question. There are as many casiers as there are houses. A casier consists of a stiff piece of imitation parchment which serves as the wrapper of a small portfolio. It is white, and on the ontside is written the name of the street, number of the house and of the arrondissement, and name of the quartier or sub-district. On the inner side of this wrapper, painted red, is a small ground plan of the house. Within are kept five different-coloured printed forms with blank spaces for the details to be written in, and these are identical for all

the houses. The first, a white sheet, contains a general description of the house. There are the measurementsnamely, the length of the facade, the depth and the superficial area. We are then told where the entrance doors are situated and whether the house is built in one solid block or has wings. This includes the very important question of inner courts, their number and superficial measurements, and how they are paved. Now a line is drawn across the sheet, and the second division thus made deals with the means provided for getting rid of the slop or waste water. The questions put relate to the number and situation of the sinks, whether they give on to open or covered drains, and where is the ultimate outfall. A third division asks for details as to the soil pipes and which of the prevailing systems is applied: - the cesspool, the moveable pail or tub, the dividing apparatus that retains the solids and lets the liquids flow into the sewer, or the more recent tout à l'égout system allowing everything to drain direct into the sewer. After that it is necessary to state how many closets there are, whether private or shared by different tenants, and how many soil pipes. The fourth division is for all that relates to the water-supply. The last and fifth division gives the number of rooms on each floor, on which side their windows are placed, whether looking out on to the street or a court. and whether there are any shops or workshops or cellars. Finally, the number of inhabitants and the date of the last inspection are noted down.

The next printed form is on yellow paper, the quarantine colour, and is entitled Disinfection. It is subdivided into a number of vertical columns. The first of these is broad enough to inscribe clates. Then there are 10 columns, each with the initial letter of a transmissible disease. These are typhoid, measles, scarlet fever, diphtheria, small-pox, whooping-cough, cholera, tuberculosis, erysipelas and puerperal cough, cholera, tuberculosis, erysipelas and puerperal fever. Then comes a dividing line and another series of 10 columns under the general heading of "other diseases." are cancer, pneumonia, dysentery, and various diseases for which disinfection, though sometimes desirable, is not generally practised. Whenever a disinfection is carried out the date and cause are entered on this yellow sheet. Thus it is possible to tell at a glance how often it has been thought necessary to disinfect in the dwelling and for what diseases. The next sheet of paper is of a light green colour, and is divided into similar vertical columns, and with the same rapid facility the deaths, the date, and cause of those deaths are seen. The fourth paper is light blue, and has for title "Unwholesome Dwellings." The first line gives the date when notification was received that the house was believed to be in an insanitary or unwholesome condition. Then comes the date of the report on the dwelling drawn up after investigation by the "Commission on Insalubrious Dwellings," and the third line gives the date of the prefectorial ordinance issued in consequence of this report. After this follows a description of the alterations and improvements that have been ordered by the prefect. Lower down is space for the list of fines or other sentences pronounced, if any, against the owner or other person responsible for carrying out the improvements in case of failure to obey the instructions. Finally, there is a place to inscribe the date when the works ordered were satisfactorily terminated. Thus on this light blue sheet we have the record of all sanitary works, alterations, or repairs. Finally, there is a dark blue sheet printed on both sides and containing a large number of questions which have to be answered when the inquiry is held as to the sanitary condition of the house.

Such investigations have now been made for every house. though, of course, at different dates, and conditions may alter after the inspections. On the other hand, the inspections can be renewed from time to time, and the inspectors now know from the casier sanitaire the general character and the past history of the house they may be called upon to re-inspect. All these documents are kept in a surprisingly small space. A room of moderate size suffices to hold them. It is divided up in rows of shelves, like book-cases. Instead of books there are cardboard portfolios of the same size but varying thickness, one portfolio for each street, or section of a street if it be a very lengthy thoroughfare, and inside, in numerical order, are the casiers of each separate house. The portfolios are placed in alphabetical order. Though there are now 80,000 separate casiers corresponding to each of the 80,000 houses of Paris, it does not take longer to pick out any one particular casier than it does to find a word in a dictionary. Every day all the deaths that occur are at once added to the history of the houses in which they take place; so also with regard to the disinfections practised and all the other details mentioned above. A few clerks are employed to do this work punctually and promptly. But not only is the history of each house kept well up to date, methods have now been introduced of analysing the results of the immense amount of information received. Thus we have not only the sanitary history of each individual house but also of each street or group of dwellings. In this way the healthy and unhealthy quarters are marked out with great accuracy; and this not merely in the general sense but also in respect to various diseases taken by themselves.

Before, however, dealing with these general results, the question naturally arises as to how far the caster sanitaire can be of use to any individual member of the community. Obviously anyone about to take up his abode in a house, to lease or purchase a part or the whole of a house, would very much like to know whether the premises were noted favourably or unfavourably in the municipal records. On the other hand, if all the information now collected was made public private interests would be compromised. Doubtless many speculators in slum property richly deserve the public pillory. Nevertheless, if everybody could look into the casier sanitaire of any house there are persons who would make malicious use of information thus obtained, to say nothing of giving unnecessary trouble to the employees in charge of the casiers. Thus as a rule the only person who can ask to see the *casier* of a house is the owner or person legally responsible for the property. Therefore an incoming tenant has not the right to go to the Hôtel de Ville and ask to see the casier santaire of the house in which he proposes to live. On the other hand, before signing a lease or purchase deeds a condition can be made that the owner shall allow the person with whom he is negotiating to examine the casier sanitaire of the property in question. It would be a very useful help to the progress of sanitary reform if all tenants insisted on seeing the casier sanitaire before they signed leases or purchased property. But it is to be feared that this could not be done just where it is most needed—that is, in regard to the poorest property where many of the tenants are only weekly tenants.

The result of the house-to-house inspection, rendered necessary to fill in the casier sanitaire of every dwelling, has been the execution of an enormous amount of sanitary work. During five years ending on Dec. 31st, 1908, no less than 19,400 houses visited were noted as requiring more or less important repairs or alterations. As a rule the house-owners were well disposed and willing to carry out the instructions given them. Only in 693 cases was it necessary to commence legal proceedings, and of these but 148 were brought before the Council of the Prefecture. It is noted that the recalcitrant proprietors are among the most wealthy owners of extensive property; the smaller owners are much more ready to carry out instructions though involving considerable expenditure. These alterations and improvements, however, only affect matters of detail-a better soil-pipe, a ventilator here, an extra window there—whereas what, in many cases, is needed is the total demolition of dwellings that are so built that they can never be healthy. But the collection of information, in so complete and systematic a manner, enables the authorities to point out at once which are the worst spots. Further, and to supplement the information, the Paris Municipal Council in 1908 decided that anti-tuberculosis dispensaries, and other institutions of this sort, should only receive subventions if they supplied in a uniform manner very detailed information concerning their patients. Thus the connexion between certain quarters and certain occupations and the prevalence of tuberculosis is being clearly established. There are also figures showing the comparative susceptibility of the Parisborn population and those who have migrated to the capital.

During a period of 11 years (1894-1905) there have been 138,766 deaths due to transmissible diseases in 50,394 houses. Of these deaths 101,496 were caused by tuberculosis and they occurred in 39,477 houses. Analysing these figures, the authorities note that there were 23,124 houses where the only deaths from transmissible diseases were due to tuberculosis. The 39,477 houses in which 101,496 deaths from tuberculosis have occurred are divided into three classes or categories. In the first

class are the houses where less than five deaths from tuberculosis have been recorded during the 11 years. There are 34,214 such houses, and the total of deaths from tuberculosis occurring in them was 63,487, or an average of a little less than 2 deaths per house in 11 years. The second class are houses where there have been, from this cause and during this period, at least 5 deaths and not more than 9 deaths. There are 4443 such houses and 26,509 deaths occurred in them. The third class are the houses where the number of deaths amounted to 10 or more. There are 820 such dwellings, and in them 11,500 deaths from tuberculosis took place during the 11 years. Taking the last figure, it will be seen that 10 per cent. of the total number of deaths from tuberculosis occurred in 820 houses—that is, in the forty-eighth part of the houses affected, and the hundredth part of the total number of houses in Paris. But a house is a vague term, and it is above all necessary to know how many people dwell in these houses. official reports drawn up by the Department of the Municipal Administration, which has the management of the caster sanitaire, give us this information. M. P. Juillerat, the chief of this department, presents each year an admirably prepared report to the Prefect of the Seine.

The second and third class of houses, as defined above, comprise together 5263 houses, and they had a total population of 426,676 inhabitants. Of this number, 38,009 died from tuberculosis during the 11 years, which is equal to 89.31 per 1000, or an average annual mortality of 8.119 per 1000. The average annual mortality from tuberculosis in Paris, as a whole, is very high. During the 11 years in question it amounted to an annual average of 4.95 per 1000 of the population. But it will be seen that in the second and third categories of houses just mentioned it was much above the average. If, however, we take the figures for the 820 houses of the third and worst class the discrepancy is still greater. These houses had 106,300 inhabitants and 11,500 of them died from tuberculosis during the 11 years, which is equal to 108.181 per 1000 in the 11 years, or 9.834 per 1000 per annum. The houses of the second class with average annual mortality from tuberculosis of 7.52 per 1000 have an average population of 71 inhabitants in each house; while the houses of the third class, with average annual mortality of 9 834 per 1000, have an average population of 130 persons per house. There is a further significant distinction to be made. Of the 820 houses of the third class, 195 consist of cheap furnished rooms, while the rest are let to people who possess their own furniture. These latter 625 houses had 92,670 inhabitants, and the annual average death-rate from tuberculosis was 8.44 per 1000. The remaining 195 houses, consisting of cheap hotels or furnished rooms, had 13,630 inhabitants, and during the 11 years their average annual death-rate from tuberculosis amounted to 19.20 per 1000! This is indeed an appalling figure, all the more so as it is quite evident that it results from the sort of dwelling in which these unfortunate people live and die prematurely. These tuberculous houses, as they may well be called, are rarely isolated, but stand in groups in narrow streets and are lofty, with but very small backyards. Equally instructive is the calculation made in the opposite sense. Paris, with a total population of 2,660,559, had, as already mentioned, an average mortality from tuberculosis during the 11 years of 4.95 per 1000. But, if we deduct from this total population the 426,676 inhabitants of the two worst classes of dwellings, the death-rate among the remaining 2,233,882 would only amount to 2.56 per 1000 per annum.

It may be said, however, that the moral to be derived from these figures is already well known, though it has rarely been illustrated on so large a scale. But the casier sanitaire supplies the means of making other sorts of investigations on problems that have not yet been elucidated. Thus, for instance, a suspicion has gained ground that there are such things as cancer houses. Now, in Paris, this can be tested on a sufficiently large scale to be able to arrive at some conclusion. With 80,000 houses and a population of more than two and a half millions under close and daily observation, some general deductions should be possible. A special method of registering has now been established in regard to cancer. a death occurs from this cause, it is not only entered in the casier sanitairs of the house where it has taken place, but also on a stiff card similar to those used for library catalogues. These cards are white and are placed in the usual long, narrow drawer; but when it happens that a second

death from cancer takes place in the same house then a red card is substituted for the white one. Thus the prevalence of red shows the proportion of houses where more than one death from cancer has been notified. This service was commenced in August, 1906, and up to Dec. 31st, 1908, the deaths from cancer registered in this manner amounted to 6980. One death from cancer took place in each of 5786 houses, and of these 922 houses were qualified as tuberculous houses—that is to say, they belonged to the second or the third class, according to the classification described above. Two deaths from cancer are noted in 442 houses, of which 142 houses are qualified as tuberculous houses. Three deaths from cancer are noted in 51 houses, of which 25 are tuberculous houses, and 4 cancer deaths in 4 tuberculous houses, one of them being a convent. Other deaths from cancer occurring in convents and asylums may be set aside, as also 84 deaths in hospitals. They would only bear on the housing problem if the previous history of the patients was forthcoming. The point worth noticing which these records are already able to establish is that one-fifth of the deaths from cancer have taken place in houses that possess a sinister reputation for the prevalence of tuberculosis. Then, when there is more than one death from cancer in a set of houses, the proportion of tuberculous houses increased. Where there is but one death from cancer the proportion of tuberculous houses is one-sixth. Where there are two deaths from cancer the proportion of tuberculous houses is one-fourth. Where there are three deaths from cancer then half the houses are tuberculous. Finally, with four deaths from cancer in one house then all the houses are tuberculous. It would seem also that the confined life in convents and asylums for the aged favours the growth of cancer. Putting these institutions aside, and returning to ordinary dwelling-houses, during the course of two and a half years it has been found that among the houses where a death from cancer has taken place 10 per cent. of these houses have had more than one death to record from this disease. This, it may be said, is not yet conclusive; but when these observations have extended over several more years it seems from what we already see that some very useful deductions will be obtained.

The collection and verification of such figures is one of the services that a systematic record of the sanitary history of dwellings has rendered, and they justify an attempt on our part to follow and improve upon the example given by the sanitary administrative services of the city of Paris.

BRISTOL AND THE WESTERN COUNTIES. (From our own Correspondent.)

New University Buildings.

AT a recent meeting the University Council authorised the and of chemistry. The work was begun within three days and is now in progress. The site is a part of the grounds of the Blind Asylum, the purchase of which has been alluded to in previous letters, and the new buildings will be continuous with those already standing. They will cost £35,000, exclusive of furnishing, and will be so arranged as to permit of further extension should the occasion arise. One entrance from Woodland-road is provided for in the plans, and the University buildings will thus gain a double frontage. The plans for both departments have been most carefully prepared. Professor Stanley Kent has visited many of the corresponding continental institutions, and has, in company with the architect, Mr. G. H. Oatley, inspected the majority of the physiological departments of the United Kingdom. The chemical buildings will also constitute a very complete and up-to-date equipment, and Professor Francis is to be congratulated on so well deserved an outcome of his labours on behalf of his department. In the buildings of science, as well as of medicine, space is urgently needed, and this pressure will be greatly relieved by the migration of physiology and chemistry to their new quarters.

A Silver Mace.

The Council of the University has gratefully accepted the offer of Mr. Stanley H. Badock, late Sheriff of Bristol, to present a silver mace to the University.

The Medical School Dinner.

Until this year it has been the custom to open the winter Animals."

session of the Bristol Medical School with a prize-giving ceremony in the afternoon followed by the dinner in the evening. This year, however, the prize distribution was dispensed with and the dinner was postponed from the beginning of the session to a later date. On Nov. 23rd over 100 past and present students, with the teaching staff, sat down to dinner at the Royal Hotel. The King's health was proposed by the President, Mr. C. K. C. Herapath, an old Bristol student and a practitioner of high repute in the city. The Vice-Chancellor, Sir Isambard Owen, in proposing the health of past and present students, expressed his delight at seeing so large a muster, and painted for his hearers a picture of the University of Bristol as he hopes it may be in the future, in words which suitably clothed large and inspiring ideas. Sir Isambard Owen laid special stress upon the fact that this is the day of opportunity for the provincial medical schools, a subject upon which his experience entitles him to speak with unique authority. His health was proposed in terms of "Welcome to Bristol" by Dr. D. S. Davies. The toast of "The Medical School and other Departments of the University" was entrusted to Dr. T. M. Carter, and that of "The President" to Mr. Charles Corfield. Some excellent songs helped to add gaiety to a very cheerful and successful occasion, and everyone present must have felt that the "arrival" of the University has given a new momentum to the progress of medical education in Bristol.

Phthisis in Bristol.

The inadequacy of the means at present in use in Bristol for the prevention of consumption and the treatment of consumptives has recently been forcibly stated by more than one member of the health committee of the municipal council. The chairman, Mr. Colston Wintle, at a meeting held on Nov. 16th, said that the 20 beds which are provided for by the city in the sanatorium at Winsley are quite inadequate even for the very carefully selected cases which are considered suitable for admission; while, in addition to those people who are in a condition to benefit by sanatorium treatment, there is a very much larger class of more or less advanced cases for whom no provision whatever exists, although these are the very people who inevitably act as disseminators of the disease. For such people Mr. Wintle would like to see some kind of colony system established. At the same meeting Mr. E. M. Dyer spoke of the necessity for compulsory notification as the basis of a successful campaign against phthisis.

The Bath Sewage Disposal Scheme.

The Bath Corporation recently applied to the Local Government Board for sanction to borrow £213,000 for sewage disposal works. The Board has now written stating that it approves the main principles of the scheme, but it will require some other additions to be carried out, including increased pumping plant.

Proposed New Sanitary District for Devonshire.

At the last meeting of the Axminster (Devon) rural district council a communication was read from the Local Government Board stating that it was of opinion that the suggestion that Honiton, Ottery St. Mary, Seaton, and Sidmouth urban district councils and the Axminster and Honiton rural district councils should combine and provide an isolation hospital and elect a medical officer of health, who should devote the whole of his time to the duties of the office, would be advantageous to all the districts concerned. The Local Government Board suggested a conference and said it would instruct a medical inspector to be present. After some discussion the council approved of the suggested conference and decided to send a representative. The proposed scheme has been generally favourably received, and recently a large number of ratepayers of Sidmouth signed a petition in its favour.

The Research Defence Society.

The annual meeting of the Devon branch of the Research Defence Society was recently held at Torquay, under the presidency of Dr. J. Harley Gough. There was a large attendance. The report showed that the branch had now 100 members. Sir J. E. Moss, Lord Fortescue, Admiral Sir W. Acland, Sir R. Lethbridge, Sir E. Satow, and Mr. Eden Philpotts wrote expressing regret at their inability to attend the meeting. Mr. Paul Swain gave an interesting address on "Some Recent Gains of Research by Experiments upon Animals."

The Royal Albert Hospital, Devonport.

The annual meeting of the working men's committee of the Royal Albert Hospital, Devonport, was recently held. The report stated that £280 would be available for the institution; this sum was £93 less than that raised in the preceding 12 months. The chairman said that the deficiency was principally due to a decrease in the receipts of the children's demonstration, but he considered they must be satisfied as there was so much unemployment in Devonport.

University of Bristol.

The sixth annual "Long Fox" lecture will be delivered in the Medical Library on Dec. 7th, at 3.45 P.M., by Professor E. Fawcett, the Dean of the Faculty of Medicine, who will take for his subject, "Some Researches in Embryology." The Vice-Chancellor will occupy the chair.

Nov. 30th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

University of Liverpool: New Pro-Chancellor.

Sir John Brunner was elected Pro-Chancellor of the University on Nov. 27th, in the room of the late Sir Edward Lawrence. He is well known in Liverpool as a devoted friend of education. Two chairs at the University owe their foundation to his munificence—the chair of Economics and that of Egyptology, and his advice is believed to have contributed largely to the prosperous financial position of the University.

Female Employment and Infant Mortality: Liverpool Inquiries.

A Home Office Departmental Commission, with the coöperation of the health committee of the Liverpool corporation, has been inquiring into an extremely important aspect of the industrial question—viz., as to the effect which the employment of women has upon infant mortality. The subject has been engaging the attention of the Home Office generally for some time, and a carefully conducted inquiry into the matter has been going on in Liverpool for a period of some 12 months. I understand that, notwithstanding the fact that the industrial employment of women is not common in Liverpool, some very valuable evidence has been collected by the health committee, which will be considered in due course, together with the results of inquiries elsewhere, and will lead, it is anticipated, to some very beneficial results.

Liverpool Royal Infirmary.

At a meeting of the election committee of the Royal Infirmary held on Nov. 25th under the presidency of Mr. Ralph Brocklebank, the chairman of the general committee, Dr. R. J. M. Buchanan, physician to out-patients and assistant physician to the hospital, was unanimously elected an honorary physician. Dr. Buchanan, who is also the professor of forensic medicine at the University of Liverpool, has had a distinguished career at the University Medical School.

Royal Southern Hospital.

The Lord Mayor of Liverpool paid a state visit to St. Paul's Church on Sunday, Nov. 28th, when the anniversary service on behalf of the funds of the Royal Southern Hospital took place. The Lord Mayor was accompanied by the Lady Mayoress and numerous members of the City Council. Representatives from the honorary medical staff and the committee of the hospital also attended the service. The collection realised £92.

Municipal Lunatio Asylums: Are they Needed!

The question has recently arisen as to whether it would not be cheaper for Liverpool to build her own lunatic asylums and maintain her own lunatics instead of discharging those duties in conjunction with the Lancashire Asylums Board, to which Liverpool representatives are sent by the city council. Under the present system the city council and the county council contribute to the cost of the five asylums on a defined basis. In a report on the subject, which contains statistics as to the relative cost of buildings and the maintenance of lunatics in other parts of the country, the town clerk says that the Lancashire asylums board has built the asylums cheaper in some cases than the municipalities who have had sole control of

their own asylums; and the cost of maintenance in the Lancashire asylums is less than in the municipal asylums. If, therefore, the corporation of Liverpool were to build and equip its own asylums the cost per head would probably exceed that already incurred. The town clerk draws attention to the report of the Royal Commission on Local Taxation, 1901, in which it is stated that the Commissioners consider the maintenance of pauper lunatics and the provision of asylums (inter alia) to be services of a national character, and the Association of Municipal Corporations is making representations to the Government with a view to having the same paid for by the State. In these circumstances, the time is not opportune for making any change in existing arrangements. Last year the Liverpool ratepayers paid over £100,000 towards the cost of county asylums and the maintenance of lunatics; hence the question arose in the city council as to the expediency of Liverpool providing her own asylums.

Nov. 30th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Trinity ('ollege and the Royal University of Ireland.

OFFICIAL information has just been made public of the rules which embody the terms of admission of Royal University students and graduates as adopted by the board and council of Trinity College, Dublin. The terms practically mean that the University of Dublin is prepared to accept students of the late Royal University of Ireland according to their standing in that institution without passing any preliminary examinations, and, by a slight rearrangement as to fees, they can continue their education in Trinity College precisely as if they had been original students. Many will avail themselves of these generous terms.

Obituary: Andrew MoConnell, L.R.C.P. & S. Edin.

I regret to record the death of one of the best known of the older Belfast practitioners-Mr. Andrew McConnell, who died at his residence, Belfast, at the advanced age of 71 years, on Nov. 16th, after a prolonged illness of six months' duration, during which he was confined to bed. A native of Doagh, co. Antrim, Mr. McConnell studied at Queen's College, Belfast, and in 1867 became a Licentiate of the Royal Colleges of Physicians and Surgeons of Edinburgh. He shortly afterwards began practice in Belfast; in 1867 he was house surgeon in the union infirmary, in 1869 he became a dispensary medical officer, and at a later period he was appointed visiting surgeon to the union infirmary, a position he resigned a few years ago on account of advancing years. He was an official in the medical service of the Poor-law board for a period of 32 years, and during all that time he discharged his duties with a zeal and conscientiousness worthy of all praise. In 1889-90 he was President of the Ulster Medical Society. He took no part in the public life of the city, being a man of a retiring habit, and thoroughly devoted to practice which, apart from his dispensary clientile among the poor, was large. A devoted student of literature, he was a pleasant companion, and being gifted with a retentive memory he was shrewd and skilful in debate. In private life he was one of the most unassuming of men, and in his work amongst the poor, with whom he was first brought in contact in his professional capacity, he was invariably kind and considerate. Mr. McConnell is survived by his widow, one daughter, and two sons, both of whom are graduates of Trinity College, Dublin. H shane, co. Antrim, on Nov. 19th. He was buried in Brough-

Belfast Charity Organisation Society.

At the annual meeting of the Belfast Charity Organisation Society held on Nov. 29th attention was drawn in the report to the fact that the society has decided to adopt a scheme for the collection of subscriptions to the various charities, the association acting as the central agency. It is to come into force in next January. The principal medical charities, however, like the Royal Victoria Hospital and the Mater Infirmorum Hospital, have refused for various reasons to come in, so that the scheme is merely an experiment. Attention was also drawn in the report to the proposed reform of the Poor-law system, but many feel, so far as Ireland is concerned, tha enough attention has not been

SCOTLAND.—PARIS.—ITALY.

drawn to the medical side of the question in that country in either the Minority or Majority reports. The amount spent by the Belfast Charity Organisation Society during the past year in relief of distressing cases was £475, as compared with £418 the previous year. More money is wanted both for the general expenses of the administra-tion of the society and for relief of cases, but this unfortunately is now the condition of almost every philanthropic agency and, with increased demands, this state of affairs is unfortunately likely to be intensified. Nov. 30th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Medical Defence Union of Scotland.

THE seventh annual report of this society, the objects of which are to safeguard the interests of its members, to give legal advice, and to promote the interests of the profession generally, was presented at the annual meeting recently held at the offices of the Union, 155, St. Vincent-street, Glasgow. The report shows that the year ending August, 1909, was one of progress, and it is satisfactory to note that out of a large number of claims against members only a small proportion of actions at law ensued. The membership at the close of the year under review was 1189. The income for the year was £631 10s., and the expenditure £337 7s., leaving a balance of £294 odd. The expenditure amounted to only 53 per cent. of the income, and was equal to about 5s. 8d. per member. The report gives details of an insurance scheme against the risk of damages being awarded against members in connexion with their professional work. A premium of 6s. insures against £500 damages and costs, and 10s. against £3000 damages and costs. The entrance fee to the union is 10s., and the annual subscription 10s., but members of any English society having similar objects to the Scottish Union are admitted without entrance fee.

University of St. Andrews and the Proposed Changes in the Medical Curriculum.

A meeting of the University Court of St. Andrews was held on Nov. 20th when there was submitted the draft of a proposed ordinance for alteration of the regulations for graduation in medicine, which had been prepared by the Board of Studies in Medicine, and also by a conference of representatives of the Universities of St. Andrews, Glasgow, and Aberdeen. It was reported that the terms of the ordinance had been fixed by the conference after careful deliberation, so as to provide a basis of uniformity among the three universities in all the main provisions. The Court resolved to adopt the document as a draft ordinance, and resolved to communicate it to the Senatus Academicus and the general council of the University, and to invite the views of these bodies thereon, in conformity with the provisions of the Universities (Scotland) Act, 1889, as regards ordinances.

Forfarshire and the Prevention of Consumption.

At a meeting of representatives of the four district committees in Forfarshire, held in Arbroath on Nov. 20th, Dr. N. J. Sinclair, medical officer of health of the county, reported that the measures adopted last year for dealing with phthisis had been of great value. Since May last 14 deaths from phthisis had been notified—7 in Buchan, 4 in Forfar, 2 in Dundee, and 1 in Arbroath. For a period of 10 or 12 years back not more than five deaths had occurred in any year in the Arbroath district, which was practically free from phthisis. It was agreed that the lectures and other means adopted during the past year for the diminution of consumption should be continued.

Nov. 30th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Rotation of the Femur in the Treatment of Congenital Dislocation of the Hip-joint.

THE question of rotation of the femur in the treatment of congenital dislocation of the hip-joint was discussed by M. Le Damany at the recent congress of the French Surgical Association. He said that as congenital dislocation of the hip-joint had excessive torsion of the femur for its principal

cause, rational treatment would, among other matters, include reverse rotation of this bone. The soundness of this view was shown by proofs of two kinds, mechanical and clinical. For the mechanical proof an apparatus was used to demonstrate the fact that under the given conditions reverse rotation was possible. The clinical proof was equally convincing, for the results obtained by this method in the treatment of children were far superior to those furnished by immobilisation in plaster splints.

Use of Colloidal Metals for the Prevention of Surgical Infections.

At the same congress of the Surgical Association M. M. Cazin said that during the last two years he systematically used colloidal metals in about a hundred cases for the Electrically prepared prevention of surgical infections. palladiol was the preparation which he preferred, with electrargol as the next beso. He employed one of these substances whenever he encountered suppuration whilst operating—principally in cases of "cold" appendicitis and in suppurations of the adnexa. He also made use of them as prophylactics, not waiting for the occurrence of symptoms of general infection but commencing the treatment the day before an operation, when that was possible, or at least giving a first injection some hours beforehand. The doses to which he had recourse were much larger than those usually recommended. Patients who had been operated on and were in danger of infection might, in his opinion, have daily injections of 40 or 50 cubic centimetres, and even more, of either the palladiol or the electrargol without experiencing the slightest ill-effects. M. Victor Henri had shown that daily injections of 10 cubic centimetres of electrargol were harmless to rabbits, and M. Cazin had never observed any untoward result after injections repeated for several days in succession until the complete disappearance of the pyrexia. He had used the treatment in very severe suppurative conditions connected with the appendix and the Fallopian tubes. In 100 cases of abdominal surgery for septic lesions he had lost only one patient, a female whose general health was extremely bad and whose circumstances were such that she did not receive proper treatment after the operation.

Medical Diplomas in France.

During the last full academical year the number of diplomas of Doctor of Medicine granted by the French faculties of medicine in the several cities was as follows: l'aris, 430; Bordeaux, 147; Lyons, 137; Montpellier, 102; Toulouse, 58; Lille, 46; and Nancy, 35. The Faculty of Medicine at Beyrouth in Syria, whose degrees are recognised by the French Government, granted 30 diplomas.

Treatment of Hydatid ('yst of the Liver.

At a meeting of the Surgical Society held on Nov. 17th, M. Quénu gave details of two cases of hydatid cyst of the liver which M. Dujarier had treated by extirpation after disinfection by formalin and in which union had been obtained by suturing. In the first case drainage was maintained for two days and recovery was uneventful. The second case was one of multiple cysts which were treated in the same waynamely, by "formalisation" and removal of the membranes The patient belonging to the parent cyst, and suturing. made a rapid recovery. Nov. 30th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Another Italian Scourge.

MALARIA is on the wane, pellagra is following suit, but the great sin of great cities" (or premature indulgence in the marital privilege) is on the increase, reinforced by yet another and hardly less deadly vice—alcoholism. Hooked on to the and nardy less deady vice—accondism. However the water express train of the twentieth century, Italy is forging ahead "for better, for worse," in some respects distinctly for the latter. Like all southern nationalities she was wont to compare honourably with her transalpine sisters in the use of strong drink, but now she is rapidly descending from that "coign of vantage," and alcoholism, with its train of sinister sequelæ, is among the most formidable of the enemies, physical and social, with

which she has to cope. By every test which the anthropologist can apply, stunted development of mind and body becomes more and more common among her youth, and not a day too soon the best of her citizens are exerting themselves to track down the causes and replace them by conditions that make for health and manhood. The "Federazione Antial coolista Italiana" and the "Lega Popolare Control'Alcolismo" have been strenuously at work in this direction, and the statistics they have compiled in the course of their crusade more than justify their organisation and enterprise. Medical practitioners and consultants have joined "head and hand" with them and, as a result, the public are at length aroused to the prevalence of the evil and bringing pressure to bear on the authorities, municipal and imperial, to curb and conquer it. Some of the evidence contributed by physicians as to the increased resort to stimulants among the labouring classes seems impressive enough, particularly to all who can compare the Italy of last century with the Italy of to-day. the Marches (writes a local practitioner) the peasant in the busy season drinks from 20 to 25 tumblers of wine per diem! Within the last quarter of a century the number of victims to "psicose alcooliche" (mental diseases from strong drink) have been "quadrupled." In the "manicomio" (madhouse) of Brescia the proportion of admissions for alcoholism was 37.1 per cent. for the past year. At the Thirteenth Congress of Medico-Psychologists held in Florence in 1907 Dr. Paolo Amaldi thrilled his audience with statistics equally startling; and Professor Antonini of Udine capped his confrere's returns with others of even graver import. The last-named expert added some details as to the causes of aggravated alcoholism in the Venetian population, among them being "the temporary emigration of the labouring classes during summer and their return in the winter months, having acquired drinking habits during their northern sojourn which stick to them throughout their idle spell." Worse still is the record of the urban population, especially in the great centres like Milan or Turin. In the former city, according to Dr. Angelo Arcelli, whose "inspection" comprised some 40,000 young pupils of both sexes, 83.50 per cent. are habitual consumers of "sostanze alcooliche" (articles of diet impregnated with alcohol), 44.22 per cent. drink "liquori" (vermouth and such like, also charged with alcohol), and 5 per cent. are sometimes drunk! Needless to add the testimony of their teachers that the young abstainers are quite the better behaved and the more intelligent, the wine or liquor drinkers being physically, intellectually, and morally quite inferior. The anti-alcohol crusade, conducted by the two associations—the "Federazione" and the "Lega" above referred to—has elicited important evidence as to personal habits and experience from prominent physicians and other "men of light and leading" throughout Italy. Two questions (first, Do you habitually take wine at or between meals; and second, Do you think alcoholic drinks, fermented or distilled, conducive to intellectual work or to "ispirazione geniale" (genial inspiration)?) have elicited from these authorities an expression of opinion that in some cases the moderate use of wine is salutary, while in others abstinence is the wiser course. Among the medical and biological authorities who represent the "moderate" side are such commanding names as Bianchi, De Giovanni, Morselli, Mosso, and Murri-Mosso maintaining that wine, sparingly consumed, is a sounder and more sustaining beverage for the worker than water, and certainly a preservative against many maladies. Historians like Villari and Ferrero are also believers in "moderation"—the latter (whose brilliant studies in Roman history are now familiar to the English-speaking world) going so far as to say that "he has always found at the bottom of a flask of champagne some idea, subsequently to be elaborated with patience and profit during hours of fasting." In other fields of mental energy—poetry, painting, sculpture—the evidence oscillates between "moderation" and abstention; while all the testators seem at one in holding that, to promote habits of strict sobriety among the less favoured classes, it would be well if the more favoured denied themselves even moderate indulgence in wine, were it only, by the force of example, to strengthen the hands of those who are labouring to wean young Italy from what is even now a "scourge" and may yet become a permanent and all-pervading source of national "decline and fall. Nov. 27th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

The Recent Epidemic of Poliomyclitis.

THE official report of the committee appointed for the study of the recent epidemic of poliomyelitis in Vienna was presented by Dr. Lappert at the last meeting of the Prediatric Society of this city. It stated that 290 cases were reported upon, but that only 266 could be made use of in the report; it may also be remarked that 90 additional cases were observed after the report had been drawn up. Of the cases considered in the report 129 were from Vienna, and 137 from the surrounding districts. The epidemic commenced in July, 1908, and reached its climax in October. The ratio of girls to boys was as 72 to 100. The age was mostly between one and three years. Social position and density of population did not seem to have any influence. Of the 266 cases 241 showed the spinal type with paralysis of the legs, especially on the left side. Affections of the muscles of the back, the neck, or abdomen were noticed only rarely. In 14 cases, where the patients were older, a special feature of the disease was ascending and descending paralysis with death from involvement of the respiratory centre. Symptoms referred to the pons Varolii and medulla oblongata occurred in 25 cases. Mostly paralysis of the ocular muscles, of the facial nerve, and of the muscles of deglutition was seen in combination with the spinal type. These cases generally improved quickly. In some cases only the cranial nerves were affected. The encephalitic type with spastic hemiplegia was very rare. The so-called polyneuritic type could not be recognised as a special form. The meningitic type was without doubt also present, but could not be considered in the report as the observations were not reliable. The course of the disease was generally the following. A prodromal stage, lasting from one to four days, with pyrexia, sleeplessness, sore-throat, and gastric disturbances, was very often seen. From two to four days after the prodromal symptoms paralyses supervened, affecting different parts of the body, reaching their maximum after a few days and then diminishing to some extent. The temperature rarely reached 39°C. The statistics showed that 10 per cent. of the patients died and that 13.5 per cent. were reported recovered, but this figure will undoubtedly be added to. The other cases showed a persisting paralysis of one or more groups of muscles. In Vienna no connexion of cases could be discovered, the distribution being quite irregular, but the disease appeared in families and amongst neighbours, which suggests that it should be considered infectious.

A Case of Erythrocythæmia.

At a recent meeting of the Ophthalmological Society Dr. Krämer showed preparations obtained from a man who had suffered from morbus cæruleus congenitus. He was 19 years old and was said to have been always cyanotic. He was liable to slight asthmatic attacks and used often to spit up blood without pyrexia or any pulmonary symptoms being present. The visible mucous membranes were of a deep violet colour, whilst the face, nose, fingers, and ears were bluish-red. Systolic murmurs were heard all over the heart. The blood showed 6000 leucocytes and over 9,000,000 red corpuscles in the cubic millimetre. The conjunctiva of the tarsus was dark red. The lens and vitreous body were clear; the veins of the fundus were four times the size of those seen in a normal fundus; the visual acuity was 6/18. Both eyes had an identical appearance. The veins were nearly black and much curved; the arteries also were of a dark colour and twice their ordinary size. There were no extravasations of The patient died suddenly with symptoms of blood. internal hæmorrhages. The abnormalities found at the necropsy included narrowing of the pulmonary artery to the size of a lead pencil, a defect in the ventricular septum of the heart, a pervious condition of the foramen ovale, recent endocarditis, and an infarct of the lungs. As Dr. Krümer said, cases like this one were very rare, so that the ophthalmological conditions have as yet been little studied.

Eventful Career of a Medical Student.

A remarkable case came before the courts a few days ago when a medical student of more than ordinary ability was tried on a charge of forging banknotes. The evidence showed

that he had, before completing his curriculum, found out that there was a focus of tropical malaria on the outskirts of Vienna. The disease had, up to the time of his inquiries, been regarded as either typhoid fever or meningitis or simply "a fever"; he was the first to recognise its true nature and to urge on the authorities the necessity of making special efforts assertions; and the board of public health in the affected district ridiculed the student's researches, advising him to finish his studies first and afterwards to correct his ideas. A memorandum sent by him to the chief board of health was also without effect, although it was read there and approved. He therefore began to treat the patients according to the diagnosis he had arrived at by his researches, and, although unrecognised officially, he soon became known in the district as the malaria doctor who did wonders in restoring people to health. He neither asked for nor received money from the patients, who were, in fact, the poorest of the poor, and he himself was hardly able to procure the necessaries of life. Eventually he applied to the municipality for a grant, which was refused, and then, being in the direst necessity, nearly starving, he began to forge banknotes, as he was an expert photographer. When before the court he put forward the plea that the loss suffered by the State through his attempt at forging was more than compensated by the good which he had done in restoring to health so many otherwise incurable persons, and in the result he was acquitted by the jury on the ground that "irresistible coercion" had made him do what he did. Many bitter things were said in court against the official representatives of medicine, together with repeated references to the fate of Dr. Kolles, who in spite of his discovery of the value of cocaine in medicine had to leave Vienna a broken man, as well as to the fate of Semmelweis, whose immortal discovery of the cause of puerperal infection was treated in such a way that the discoverer's mind was permanently injured. Unlike them, however, this adventurous student has now met with sympathy and is out of danger as far as monetary interests are concerned.

Nov. 29th.

NOTES FROM INDIA. (From our own Correspondents.)

Quinine Distribution.

It is to be hoped that one result of the Malaria Conference at Simla will be a reduction in the prices charged for quinine made at the two Government factories at Darjeeling and in the Nilgiris. These prices should be strictly regulated by the rates in the open market, and there should be no attempt to show a profit merely for the sake of justifying the existence of the factories. Provincial administrations are ordered to obtain their supplies of drugs from the Government stores, and they very naturally resent the expenditure involved in the transactions, which becomes considerable when large quantities of quinine have to be purchased during epidemics of malaria. It should be possible to arrange a sliding-scale of prices which would follow those quoted by wholesale chemists. If there is a loss in the working of their factories, the Government of India should inquire into the methods of manufacture and take expert advice as to the possibility of improving the processes by which quinine is produced. The local government of Burma has issued an important resolution contained in a circular enumerating measures to come into force from Jan. 1st for the introduction of a revised system for the sale of, and free distribution of, quinine throughout the province. The Lieutenant-Governor of Burma has decided to increase the number of fixed centres for the sale of quinine in all bazaars throughout the province. For the areas which are not within easy reach of a post-office or bazaar it will be necessary to select headmen of village tracts to act as vendors. By these means it should be possible to put quinine within the reach of every inhabitant of the country. It will not be necessary to discontinue the sale of quinine through the agency of Government servants now acting as vendors, but their number should not be unduly increased so as to discourage the efforts of those who may conveniently be termed stationary vendors. To stimulate the sale the price of the drug will be lowered and the profit of the retail vendor increased. Free distribution will only be made (a) to those unable to purchase, (b) in outlying areas where there are no bazaars, post-offices, or headmen to act as vendors, and (c) in case of widespread outbreaks of malaria.

The St. John Ambulance Association.

The Indian branch of the association, with the authority of His Excellency the President, has just published a pamphlet giving full details of the work of the association in India. The pamphlet is divided into five chapters as follows: (1) The Order of St. John and its Associations with the Ambulance Movement; (2) the St. John Ambulance Association; (3) the Value of an Ambulance Training; (4) How to Organise Centres and Classes; (5) the St. John Ambulance Brigade. These chapters, as the titles indicate, contain full information with regard to the origin and development of the association and its Indian branch, the method of organising centres and classes and full details with regard to the issue of certificates, and the methods of obtaining ambulance stores and forming units of the St. John Ambulance Brigade. The syllabuses of the various courses of instruction controlled by the association are given in a sixth chapter, and as appendices are given the regulations for the next competition for the following:—1. The Indian Railway Challenge Shield, presented by H.R.H. the Grand Prior and the Chapter of the Order of St. John. This competition will be held at Jubbulpore on March 2nd, 1910. 2. The Volunteer Corps of India Challenge Shield, presented by H.R.H. the Grand Prior and the Chapter of St. John of Jerusalem in England. The date and place of this competition will be fixed by the Inspector-General of Volunteers in consultation with the corps concerned. 3. The first annual competition for the challenge cup, presented for competition amongst divisions of the St. John Ambulance Brigade, by Mr. Vivian Gabriel, C.V.O., to be held at Lahore on Dec. 27th, 1909. The pamphlets can be obtained free on application to the Honorary Secretary, St. John Ambulance Association, Indian Branch, Peshawar, or the Honorary Secretary, Executive Committee. Viceregal Lodge, Simla, or from Honorary Manager, Stores Depôt, Sassoon Institute Building, Bombay.

Health in Indian Jails.

The Sanitary Commissioner's note on mortality in jails recently issued shows that in 1908 all the conditions in-fluencing the health of the prisoners were extraordinarily unfavourable. The south-west monsoon of 1907 receded prematurely and in consequence the spring crops of 1908 were bad everywhere excepting in Eastern Bengal and Assam and in Lower Burma, and although the autumn crops were generally good, except in Bengal, the epidemic of malarial fever which ravaged Upper India delayed the harvest. Poor and belated harvests raised the already high prices. High prices led to an increase of orime and the number of prisoners admitted into the prisons rose from 291,165 in the preceding year to 341,831, a total increase equal to 17 per cent. The increase was not, however, equally distributed. It was 50 per cent. in the Central Provinces, 28 per cent. in Bengal and the Punjab, and 26 per cent. in the United Provinces. Tubercle or diseases of the lungs, or both, levied a higher toll of death than usual. Not only were many of the prisons continuously overcrowded, but a large proportion of the newly admitted prisoners were in a bad state of health owing to the effects of scarcity and malaria infection. In India and Burma the mean daily prison population in 1908 was 101,336, compared with 93.264 in the previous year. In every 1000, 646 were admitted to hospital during the year, and 29 were constantly on the sick list, compared with 624 and 27 respectively in 1907. The death-rate, which in the previous five years ranged from 19.50 in 1903 to 17.61 in 1904, rose to 24.17, or 6.45 per 1000 more than in 1907. Every administration, except Bombay and the North-West Frontier Province, shared in the increased mortality; the most striking advances in the death-rate, compared with 1907, being from 16.94 to 31.61 per 1000 in Bengal; 18.79 to 29.80 in Madras; and 15.03 to 24.09 in the United Provinces. The average daily number of convicted prisoners in confinement was 94.262, and among them the death-rate was 24.32 per 1000, ranging from 31.96 in Eastern Bengal and Assam to 13.09 in Burma, the rates being under 20 per 1000 only in Burma, the North-West Frontier Province, and Bombay.

The Malaria Conference.

The subcommittee, consisting of Mr. R. Nathan, I.C.S., Colonel Thornbill, I.A., and Major L. Rogers, I.M.S., which on the recommendation of the Malaria Conference visited certain places in the Punjab in connexion with the malaria inquiry, has returned to Simla, where it will draw up its report.

Plague.

The returns for the week ending Oct. 23rd show that 4815 seizures and 3992 deaths from plague occurred throughout India during the week, both figures being slightly less than those for the previous seven days. The mortality in the different provinces was as follows: in Bombay Presidency, 1067 deaths; in Madras Presidency, 121; in Bengal, 50; in the United Provinces, 338; in the Punjab, 354; in Burma, 16; in the Central Provinces, 1142; in Mysore State, 161; in Central India, 364; and in Rajputana, 354. In Nagpur City the deaths for the week under report numbered 786

Oct. 25th.

Medical Rebs.

FOREIGN UNIVERSITY INTELLIGENCE. Bologna: Dr. A. Malagolli has been recognised as privatdocent of Prediatry.—Cagliari: Dr. L. Trincas has been recognised as privat-docent of Bacteriology.—Cordova (National University): Dr. Benjamin Galindez has been appointed Professor of Descriptive Anatomy in succession to Dr. Luis M. Allende.—Grat: Dr. Rudolf Müller has been appointed Extraordinary Professor of Pharmacourans been appointed Extraordinary Professor of Pharmacognosis. Modena: Dr. Carlo Aldo Massaglia has been recognised as privat-docent of General Pathology. -Padua: Dr. Enrico Opocher has been recognised as privat-docent of Midwifery and Gynæcology. - Palermo: Dr. Franco Bommarito has been recognised as privat-docent of Urology.—Parma: Dr. Mario Varanini has been recognised as privat-docent of Internal Pathology.—Philadelphia Medical College: Dr. Philip Fischelis has been appointed Adjunct Professor of Histology and Dr. Herbert J. Smith Adjunct Professor of Therapeutics and Materia Medica.—Prague (German University): Dr. Wilhelm Wiechowski has been appointed Extraordinary Professor of Pharmacology, and Dr. Edmund Weil has been recognised as privat docent of Hygiene.—Rome: Dr. G. Mari has been recognised as privat-decent of Internal Pathology, and Dr. V. Nicoletti as privat-docent of External Pathology, —Sienna: Dr. Vincenzo Beduschi has been recognised as privat-docent of Neurology and Psychiatry.—
Turin: Dr. C. Tovo has been recognised as privat-docent of Forensic Medicine.

THE TREATMENT OF .SCHOOL CHILDREN.—The Havant board of guardians has been recently corresponding with the Local Government Board upon the subject of the treatment of school children found to need medical attention and whose parents were unable to pay for the same, and the letter from the Local Government Board showed clearly that they were prepared to approve of boards of guardians making special arrangements for the treatment of these cases. The Havant board of guardians has now decided to use these powers and, with the approval of the Local Government Board, has fixed a fee of £2 for the operative treatment of cases of enlarged tonsils and adenoids by the district medical officer. Other boards of guardians may follow this lead and take advantage of the Poor-law medical service in order to deal with such defects among poor children.

THE BRITISH WHITE CROSS MILK COMPANY.—
This company opened its factory at Knebworth on Nov. 20th by a ceremony which, on the invitation of the company, was attended by a large number of guests, including several well-known members of the profession. Lord Lytton, the chairman of the company, who presided at the luncheon, supported by many of the directors, explained the objects and methods of the company and proposed the toast of its success. After this had been supported briefly and suitably by other speakers the guests made a tour of inspection and had an opportunity of seeing the process at work. Later they were conveyed in motor-cars to Knebworth House, where they were received by the Chairman of the company and

Lady Lytton. The objects of the company, stated very briefly, are to provide the public with a milk which shall be absolutely free from pathogenic germs and uniform in the proportion of its respective constituents while remaining altogether unimpaired in its nutritive and Calorie values by the process which ensures the attainment of these ends. At some future time we may have an opportunity of testing these claims, and shall then be in a position to advise our readers of their validity. In the meantime, it is safe to say that every precaution seems to be taken to prevent the contamination of the milk during the process of its preparation in the factory.

HOSPITAL SUNDAY FUND AT BRISTCL.—The annual meeting of the committee of this fund was held on Nov. 25th. The report stated that the fund for 1909 amounted to £1929, an increase of about £40 compared with 1908. The following grants were made: Royal Infirmary, £739; General Hospital, £620; Children's Hospital, £239; the other medical institutions received about £108. It was decided that Jan. 30th should be observed as Hospital Sunday for 1910, when a strong effort will be made to raise £2000.

THE METROPOLITAN HOSPITAL SUNDAY FUND.—A meeting of the Council of the Metropolitan Hospital Sunday Fund was held at the Mansion House on Nov. 30th under the presidency of the Lord Mayor. The report for the year 1909, which showed that the total collection amounted to £72,650, having been adopted by the Council, it was decided that the annual meeting of the constituents of the Fund should be held on Dec. 17th, and it was agreed that next llospital Sunday should be held on June 12th, 1910. It was announced by the secretary that the Rev. Lionel Lewis had given notice that he would move at the annual meeting that the law of the constitution should be elected by the constituents.

THE EPILEPTIC COLONY OF THE LONDON COUNTY COUNCIL AT EPSOM.—Proposals for the extension of the epileptic colony at Epsom were submitted to the London County Council by the asylums committee on Nov. 30th. The committee asked that a scheme be sanctioned for the erection of two new villas for patients, a new central bathroom, and additional quarters for the staff at a total cost of approximately £12,760. In explaining why the proposed work was necessary the committee gave details as to the way in which the colony is carried on. It was opened in 1903 and had accommodation for 273 male and 60 female patients. These were all epileptics, but they were also certified lunatics, the colony being a county asylum established under the Lunacy Act, 1890. Two conditions were observed in the selection of colonists—their physical fitness to share in the labour (chiefly agricultural) carried on as part of the treatment, and the possibility of their being granted a measure of personal liberty within the colony grounds to an extent not possible in an ordinary asylum. This liberty, granted on parole, was a valued privilege at the colony. Originally patients sent to the colony were always selected from those who had been admitted in the first instance to some other asylum. Recently patients stated in the application form to be epileptic had been sent to the colony direct, and had been kept there for a time to ascertain whether they were fit for the special conditions of colony life, unsuitable cases being removed elsewhere. This practice, however, had only been possible to a limited extent owing to the lack of proper reception accommodation at the colony. The committee was satisfied that if the main features of the institution as a working colony were to be retained provision must be made for the reception of all acute recent male epileptic patients, from amongst whom suitable workers could be selected for retention, unsuitable cases being drafted elsewhere. An admission villa to accommodate 50 patients was necessary, and this extension on the male side would necessitate an increase in the number of chronic female epileptic workers (at present only 60) in order that the extra domestic and laundry work might be coped with. An extension of the staff block would also be necessary. The committee recommended the provision of a central bathroom because it would allow the head attendant or other responsible senior officer always to be present when bathing was going on. This was a matter of much importance, as at present it was impossible, with bathing proceeding simultaneously in the different villas, to exercise a check upon any possible ill-treatment of patients, as shown by the presence of bruises. The provision of spray instead of slipper baths was recommended on the ground that economy in the use of coal would be effected. The whole cost of the work worked out at £151 a bed, which the finance committee regarded as a reasonable figure. The committee's recommendations were approved.

THE MIDDLESEX HOSPITAL.—At last week's meeting of the governors of the Middlesex Hospital Major-General Lord Cheylesmore, the chairman, in moving the adoption of the report, said that in spite of the exercise of rigid economy the ordinary maintenance expenditure had exceeded the revenue by £12,500, thus bringing the total deficit to £20,000, which had compelled the governors to go again to their bankers for a loan to meet their obligations. He appealed most earnestly to the public for further support for the institution. Part of a discretionary bequest of £5000 left by the late Lady Goldsmid was to be devoted to the endowment of two beds, one in the general wards, the other in the cancer wards, in memory of the testatrix, and the residue was to be applied to the general purposes of the cancer fund, or on behalf of the investigation department, as the board might determine. Mr. E. T. Hall had been chosen to prepare plans and superintend the erection of the new cancer buildings on a site abutting on the hospital premises, a long lease having been granted by Mr. Charles Berners, a member of the board, on very moderate terms. The board asked sanction to alter the laws of the hospital to provide for the creation of the office of assistant ophthalmic surgeon, the qualifications to be the same as those for ophthalmic surgeon. for the adoption of the report was seconded by Mr. Reginald Lucas and carried unanimously.

THE LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY: PROPOSED INSURANCE AGAINST DAMAGES OR Costs.—Dr. G. A. Heron, the treasurer and chairman of the council of the London and Counties Medical Protection Society, explained to the members of that society at a special general meeting held at 31, Craven street, Strand, on Nov. 24th, the proposal of the council to arrange for an insurance of the members of the society against any damages or costs up to £2000, which might be awarded at any time against any member in any proceedings which the society might undertake on behalf of its members. For that For that purpose the subscription to the society would be raised to a sum not exceeding £1 per annum. Dr. Heron stated that the council desired to secure a form of assurance from an insurance company which would cover the risks of a member of the society as to costs and damages given against him in any trial at law in which his case was undertaken by the society, and in which he was unsuccessful, or which was settled either in or out of court. More than one proposal for the covering of these risks by insurance was in course of consideration by the council. Dr. Heron assured the members present that the council on their behalf would strictly guard their right to conduct the trial at law in the way the council might think proper. secure that end the council would keep in their own hands the right to defend and to refuse or cease to defend, to settle and to decline to settle in or out of court any case submitted to the council by a member of the society. The proposed assurance would leave the members of the society exactly where they now stood with regard to the council of the society, but each member would have the comfort of knowing that he had a material sum assured to him with which costs and damages given against him in an unsuccessful action at law would be met. The sum to which each member would be entitled to look from his assurance against costs and damages given against him in an unsuccessful action at law would amount to at least £2000 in any one year, but the actual amount must be left to the council for final settlement. Dr. Major Greenwood contended that the plan would not have a good effect on medical men in their relation to the public; in fact, the proposed absolute insurance was bad for the public, for the medical profession, and for the society. After a long discussion the meeting passed a resolution approving the action of the council in arranging for an insurance of the nature proposed, Dr. Johann Hermann Baas of Worms, aged 71 years. His

the subscription to the society for that purpose to be raised to a sum not exceeding £1 per annum.

The honorary membership of the Italian Society of Obstetrics and Gynacology has been conferred on Dr. H. Macnaughton-Jones.

MEDICAL MAGISTRATE.—The deputy mayor of Rotherham, Mr. G. H. Lodge, L.R.C.P., L.R.C.S. Edin., L. F. P.S. Glasg., has been appointed a Justice of the Peace or the borough of Rotherham.

RICHARD MIDDLEMORE POST-GRADUATE LEC-TURES, BIRMINGHAM.—The annual lecture under this endowment will be delivered at the Birmingham and Midland Eye Hospital, by Mr. H. Eales, on Dec. 21st, at 5 P.M. The subject will be Myopia. All qualified members of the medical profession are invited to attend.

DISTRICT MEDICAL OFFICERS AND CONSULTA-TIONS. -At the last meeting of the St. Columb (Cornwall) board of guardians it was decided to apply to the Local Government Board for sanction for the payment of 1 guinea, being the fee for a consultant called in by one of the district medical officers for a parish patient.

COTTAGE BENEFIT NURSING ASSOCIATION.—The half-yearly general council meeting of this association will be held in Denison Hall, 296, Vauxhall Bridge-road, London, S.W., on Tuesday afternoon next, Dec. 7th, at 2.45 P.M., when the Hon. Sydney Holland will speak on "The State Registration of Nurses.

SOUTH DEVON AND EAST CORNWALL HOSPITAL. As a result of the Hospital Sunday collection which took place in Plymouth on Oct. 24th the sum of £737 has been handed to the treasurer of the South Devon and East Cornwall Hospital. A sum of £551 has also been received as a result of the Hospital Saturday collections, which took place on July 17th.

MEDICAL SICKNESS AND ACCIDENT SOCIETY .-The usual monthly meeting of the executive committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on Nov. 19th. There were present: Dr. F. de Havilland Hall, in the chair, Mr. J. Brindley James, Dr. J. Pickett, Dr. Frederick S. Palmer, Dr. F. C. Martley, Dr. M. Greenwood, Mr. F. S. Edwards, Dr. W. A. Dingle, Mr. E. Bartlett, Dr. F. J. Allan, Dr. W. G. Dickinson, Mr. J. F. Colyer, Dr. W. Knowsley Sibley, and Dr. J. B. Ball. The committee passed a resolution, expressing to Mrs. Clutton, widow of the late Mr. H. H. Clutton, for many years one of the treasurers of the society, their deep sense of the loss they have sustained by his death and their sympathy with her in her bereavement. A more than usually long list of sickness claims was considered, but, although numerous, the claims were for the most part of a light nature and of short dura-tion. The financial results of the society's working are very satisfactory, and although the current year has still some weeks to run it is clear that when the books are closed in December a considerable addition will be found to have been made to the invested funds. Prospectuses and all particulars may be obtained on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.-The deaths of the following eminent foreign medical men are announced: -Dr. C. F. Larsen, a well-known Norwegian authority on tuberculous disease, in his eightieth year.—Dr. Axel Otto Lindfors, professor of midwifery and gynæcology in the University of Upsala.—Dr. Mayet, formerly professor of general pathology in the University of Lyons.—Dr. S. Bubnoff, professor of hygiene in the University of Moscow.—Dr. George E. Stubbs, formerly professor of surgery in the Medico-Chirurgical College, Philadelphia.— Dr. Manuel Beguerestain, surgeon and gynacologist to the Rawson Hospital, Buenos Ayres.—Dr. Paul Fraisse, extraordinary professor of zoology in the University of Leipsic, whose researches in embryology are well known. He had

name is known in connexion with phonometry and with works on the history of medicine, one of which has been translated into English and published in New York.—Dr. Charles H. Cobb, professor of therapeutics and materia medica in the College of Physicians and Surgeons, Boston.-Dr. Pierre Merlon, French Ambassador in Peru.—Dr. Arturo Marini, a Genoa gynæcologist.—Dr. Fauvel of Havre, a wellknown surgeon in that port.

XFORD AND MEDICAL POOR-LAW RELIEF.—At a public meeting held at Oxford on Nov. 30th, under the auspices of the city branch of the Christian Social Union, a resolution was proposed asking the board of guardians to encourage sick persons unable to pay for medical attendance to apply for medical relief; and also asking the board to make it known that persons with families who have incomes under 22s. a week would not be required to repay the cost of the relief or appear before the board. The resolution was supported by a letter in its favour from Dr. W. Osler, Regius Professor of Medicine, and was carried nem. con.

Schools and MEDICAL GRADUATES' Association.—The autumn general meeting of this association was held on Nov. 24th at the Hotel Cecil, the President, Dr. F. A. de T. Mouillot, of Harrogate, being in the chair. Amongst other members present were Sir Alfred Keogh, K.C.B. (President-elect), Sir Charles Cuffe, K.C.B., Dr. P. S. Abraham, Mr. T. Hobbs Crampton (chairman of council), Mr. M. Bulger, Dr. J. E. Macdonald, and the secretaries, Dr. W. Douglas, Mr. G. W. Dawson, and Mr. Campbell Boyd. After the meeting a banquet was held at which Lord MacDonnell, K.C.V.O., was the principal guest. In replying to the toast of "The Guests," he mentioned that he was very nearly being a member of the association himself, having whilst a student at Queen's College, Galway, prepared for the first examination in medicine. During his service in India his relations with members of the medical profession were always most cordial. He took particular pleasure in being present, as one of his brothers helped to found the association.

University of London: Meeting of the MEDICAL FACULTY.—A meeting of the Medical Faculty was held at the University on Tuesday afternoon last, Nov. 30th, when, in the absence of the Dean, the chair was taken by Dr. F. H. Champneys, chairman of the Board of Advanced Medical Studies. There was no quorum, but two important reports from the committee were considered and amended. The first report had reference to the conduct of the work of the Faculty, and was as follows :-

Whilst considering the previous recommendations of the Faculty adopted on March 12th and 26th, 1909, to be the best arrangement for conducting the work of the Faculty, the committee recommend the adoption of the following resolutions:—

(a) That a committee of the Faculty be appointed which shall deal with matters referred to the Faculty and report thereon to the Faculty.

Faculty.

(b) That this committee be constituted as follows: (i.) The Dean of Faculty of Medicine, who shall be ex officio chairman of the Board. (ii.) The secretary of the Faculty of Medicine. (iii.) The chairman of the Boards of Studies in the following subjects: Preliminary Medical Studies, Intermediate Medical Studies, Advanced Medical Studies, Dentistry, Pharmacy (when appointed), Hyglene and Public Health, Physiology and Experimental Psychology, Human Anatomy and Morphology. (iv.) Two representatives of the Board of Preliminary Medical Studies to be appointed from the members of the Faculty by the Faculty after report from the Board in question. (v.) Two representatives of the Board of Intermediate Medical Studies to be appointed from the members of the Faculty after the Paculty by the Faculty after the Paculty by the Faculty after the Paculty by the Faculty after the Paculty by the Faculty after the Paculty by the Faculty after the Paculty by the Faculty after the Paculty by the Faculty after the Paculty by the Faculty after the Paculty by the Faculty after the Paculty by the Faculty after the Paculty by the Faculty after the Paculty by the Faculty after the Paculty by the Faculty after the Paculty by the Faculty after the Paculty by the Faculty after the Paculty by the Paculty by the Paculty by the Paculty by the Paculty after the Paculty by the Paculty by the Paculty by the Paculty by the Paculty by the Paculty by the Paculty by the Paculty by the Paculty by the Paculty by the Paculty by the Paculty by the Paculty by the Paculty by the Paculty by the Paculty by the Paculty by the Paculty after the Paculty by the Paculty by the Paculty by the Paculty after the Paculty by the Paculty by the Paculty after the Paculty by the Paculty after the Paculty by the Paculty after the Pacu (v.) Two representatives of the Board of Intermediate Medical Studies to be appointed from the members of the Faculty by the Faculty after report from the Board in question. (vi.) Four representatives of the Board of Advanced Medical Studies to be appointed from the members of the Faculty by the Faculty after the report from the board in question. (vii.) Six members to be elected from the Faculty by the Faculty, each such member to be nominated by not less than two members of the Faculty. (viii.) The three representatives of the Faculty of Medicine on the Senate. (ix.) All members of the Faculty of Medicine not included in the foregoing categories who are also members of the Senate.

The second report of the committee concerned the various reports of the Boards of Studies which had been referred to The text of this report was circulated to the members of the Faculty of Medicine on Oct. 19th-22nd, 1909.

the Faculty of Medicine on Oct. 19th-2znd, 1909.

Without expressing any definite opinion on the details of the reports of the Boards of Studies, the Faculty consider that, in order to secure coordination among the medical schools and improve the efficiency of medical education in London, it is important that the control by the University over the medical schools be increased.

This can be effected by securing to the University the disposal of funds which it can apply for the maintenance of education and research in the London medical schools.

The Faculty also draw attention to the fact that, unlike many medical schools attached to universities, the medical schools of the London hospitals receive no grant in-aid from the Treasury, and are almost entirely dependent on students' fees.

The Faculty recommend that the report of the special committee appointed by the Faculty in 1905, which report was adopted by the Faculty, should be reaffirmed.

Mr. H. J. Waring moved, and Dr. Norman Moore seconded, a resolution which was adopted unanimously, that this report, as amended, be forwarded to the Senate by authority of those present.

THE NATIONAL LEAGUE FOR PHYSICAL EDUCA-TION AND IMPROVEMENT.—The fourth annual general meeting of the league will be held at the Royal United Service Institution, Whitehall, S.W., on Dec. 9th, at 3.30 P.M., the Right Rev. the Lord Bishop of Ripon in the chair. Tickets may be obtained on application to the secretary of the league, 11, Southampton Row, London, W.C.

THE LONDON COUNTY COUNCIL AND PUBLIC ABATTOIRS.—The public health committee reported to the London County Council on Nov. 30th with reference to a request by the Local Government Board to be furnished with the observations of the Council on a memorial addressed to the Board as to the desirability of establishing public abattoirs in London. The question has been repeatedly postponed by the Council since 1898, when the committee recommended the establishment of public abattoirs. The committee now advised that, having regard to the fact that the Council had no statutory powers to provide public slaughter-houses and to the special circumstances of London and the numerous interests concerned, the Council should inform the Local Government Board that in its opinion a departmental committee should be appointed to inquire into the question of the establishment of public slaughter-houses in London as well as into the question of food inspection generally. recommendation was approved.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Housing and Town Planning Bill.

THE Housing and Town Planning Bill has now reached the final form in which it will receive the Royal Assent. The points of difference between the Lords and the Commons have been compromised and adjusted, and on Thursday, Nov. 25th, the latter, at the instance of the President of the Local Government Board, gave their formal assent to the necessary amendments. Speaking on this occasion Mr. Burns emphasised the importance of the irremoveability of the medical officer of health of a county (except with the consent of the Local Government Board) which the Bill secures. Lord ROBERT CECIL also expressed his satisfaction on this point.

The Oaths Bill.

The House of Commons has assented to the amendments made in the Oaths Bill by the House of Lords. It has since received the Royal

Asylums Officers' Superannuation Bill.

Many amendments were made by the House of Lords in the Asylums Officers' Superannuation Bill. The SPEAKER of the House of Commons ruled that about a third of them were privileged amendments inasmuch as they created a further public charge. However, on the explanation of Sir WILLIAM COLLINS that they were in furtherance of the objects of the Bill, the House waived its privilege, and assent was given to the amendments.

The Finance Bill.

The Marquis of LANSDOWNE'S motion hanging up the Finance Bill "until it has been submitted to the judgment of the country" has been carried by 350 votes to 75 in the House of Lords. The result of this will be a General Election in January.

HOUSE OF COMMONS.

THURSDAY, NOV. 25TH. Discharged Lunatic Seamen.

Discharged Limitic Neamen.

Mr. Flynn asked the Civil Lord of the Admiralty what practice was adopted by the Admiralty authorities in respect to lunatic seamen discharged from the Royal Navy; whether it was the custom to send these men to their relatives or to the workhouses of their native districts; if so, was the practice sanctioned by naval medical officers; and did the Admiralty authorities propose to continue the practice of deducting from the pension or other allowance given to discharged lunatic seamen now maintained in Irish lunatic asylums the capitation grant paid by the State towards their maintenance and transferring the amount of such grant to the relief of the vote for the Admiralty.—Mr. Lamberst replied: The procedure of the Admiralty is governed by the Lunacy Acts, 1890-91, and by the provisions of the Army Act, Section 91, made applicable to the naval service by Section 3 of the Naval Enlistment Act, 1884. Dangerous lunatics are committed to an asylum, those entitled to pensions for life being admitted to the Royal Naval Hospital, Yarmouth, Non-dangerous lunatics are sent to Yarmouth or to the union of the parish to which it appears from the declaration made on entry and

from other information that they are chargeable, unless their relations from other information that they are chargeable, unless their relations or friends are willing to take charge of them and the Admiralty is satisfied that proper care will be taken of them. In the latter case the Admiralty acts on the advice of the naval medical authorities. With regard to the last part of the question, the reduction of the pension by the amount of the grant received by the asylum authorities from the Local Taxation Account in aid of the pensioner's maintenance is made in accordance with the provisions of Section 7. Clause 2, of the Superannuation Act of 1887, and the Admiralty has no option in the matter.

Territorial Medical Officers in London.

Captain FABER asked the Secretary of State for War whether he would state whether there was a senior Territorial medical officer in London suitable to take command of No. 1 London General Hospital.—Mr. HALDANE answered: This general hospital is formed by the staff of St. Bartholomew's Hospital. The senior physician asked that Colonel Harrison, a distinguished medical officer who had been in the Grenadier Guards, should be appointed administrator, and he was accordingly gazetted on Nov. 2nd.

Royal Army (Territorial) Medical Corns Transport.

Sir Samuel Scott asked the Secretary of State for War whether he Sit Sanuel. Scott asked the Secretary of State for war whether he could give any date upon which the re-issue of harness to the Royal Army Medical Corps Transport of the Territorial Army would be completed; and what steps were being taken in the interim to admit of the men receiving the necessary training with wagons.—Mr. HALDANE replied: Orders were issued on Nov. 12th for the re-issue of the harness that had been withdrawn.

The Health of the Troops in Malta.

The Health of the Troops in Multa.

Answering Mr. LUPTON, Mr. HALDANE said: During recent years improvements have been steadily carried out in relation to the drainage of the harbours in Multa. In 1906 a considerable number of the troops were transferred from St. Elim to the new barracks. The Mediterranean Fever Commission, however, obtained no evidence connecting the condition of the harbours with the prevalence of Mediterranean fever amongst the troops. Since the prohibition of the use of goat's milk in barracks and hospitals Mediterranean fever has practically disappeared from amongst the troops. The evidence given in the reports of the Royal Suciety's Mediterranean Fever Commission connecting goat's milk and Mediterranean fever is so strong and the improvement in the health of the troops since the use of goat's milk has been given up is so marked that no responsible Minister who did not wish to be regarded as weak and incompetent would venture to remove the prohibition of the weak and incompetent would venture to remove the prohibition of the use of goat's milk by the garrison.

Hemel Hempstead Union Infirmary.

Mr. Talbot asked the President of the Local Government Board whether his attention had been called to the recent death of a patient in the infirmary of the Hemel Hempstead union, which formed the subject of an inquiry before the coroner; whether he proposed to take any action with regard to the management of that workhouse, especially as regards the treatment of the sick poor; and whether he could hold out any expectation of the issue of a General Order to ensure the appointment of trained nurses in all workhouse infirmaries.—Mr. Burns wrote in reply: My attention has been called to the case referred to. I deeply regret the occurrence and I have fully informed myself with regard to the circumstances connected with it. I am giving consideration to the management of the sick wards of the workhouse in question, and I am in communication with the guardians on the subject. With regard to the last part of the question, I may point out that under the orders at present in force provision is made for the appointment of one or more nurses of experience in every workhouse.

Wednesday, Dec. 187.

WEDNESDAY, DEC. 1ST.

Sleeping Sickness in Nyasaland.

Sleeping Sickness in Nyusuland.

Mr. Rees asked the Under Secretary of State for the Colonies whether an authenticated case of sleeping sickness occurred in the native hospital of the Church of Scotland Mission in Nyasaland last September; and whether he was aware that the existence of other cases was suspected.—Colonel Seely replied: Two natives suffering from sleeping sickness were admitted to the Blantyre Mission Hospital on June 8th and August 14th respectively. The first patient died in July and the second, who came from Portuguese territory, died in September. The natives of Nyasaland are being systematically examined for sleeping sickness. Up to Sept. 30th four cases had been discovered, but there is no reason to suppose that infected persons are numerous in the Protectorate.

Carbon-Monoxide Gas Fatality.

Carbon-Monoxide Gas Fatality.

Mr. George Roberts asked the Secretary of State for the Home Department whether his attention had been directed to the recent case in which a workman was found dead and another unconsclous at the Winnington (Northwich) chemical works; whether these men had been overcome by carbon-monoxide gas; and, if so, whether he would further consider the advisability of scheduling affection by this gas as an dangerous disease under the Workmen's Compensation Act.—Mr. Gladstone replied: I have obtained a report with regard to the circumstances of this case, from which it appeared that the men were suddenly overcome by carbon-monoxide gas while cleaning out a cylinder in a tower used for washing residual gases. The case, therefore, appears to be one, not of disease, but of accident, to which the provisions of the Workman's Compensation Act are already applicable. It was announced at the inquest on behalf of the employers that full compensation would be paid. be paid.

BOOKS, ETC., RECEIVED.

ALCAN, FÉLIX, Paris.

Physiologie. Travaux du Laboratoire de M. Charles Richet, Pro-fesseur à la Faculté de Médecine de Paris. Tome sixième. Anaphylaxie-Alimentation-Toxicologie. Price Fr. 12.

BAILLIÈRE, TINDALL, AND COX. London.

Aids to Microscopic Diagnosis. (Bacterial and Parasitic Diseases.)
By Ernest Blake Knox, B.A., M.D. (Dubl. Univ.), D.P.H. (Honours), R.C.P.I. Price, cloth, 2s. 6d. net; paper, 2s. net.
Surgical Anatomy. By John A. C. Macewen, B.Sc. in Anatomy and Physiology with Honours, M.B., C.M., with Honours, F.F.P.S. Price 7s. 6d. net.

BALE (JOHN), SONS AND DANIELSSON, LIMITED, London.

Tropical Medicine and Hygiene. By C. W. Daniels, M.B. Cantab., M.R.C.P. Lond., and E. Wilkinson, F.R.C.S. Eng., D.P.H., D.T.M.A.H. Camb., Major, I.M.S. In three Parts. Part I. Discases due to Protozoa. Price 7s. 6d. net.

BUTTERWORTH AND Co., London.

The Law Relating to Poisons and Pharmacy. With Notes and Cases. By W. S. Glyn-Jones, of the Middle Temple and South-Eastern Circuit, Barrister-at-Law. Price not stated.

COBLENTZ, OSCAR, Berlin.

Die topische Diagnose der chronischen Gonorrhoe und der anderen bakteriellen Infektionen in den Harn- und Geschlechts-organen des Mannes. Zugleich ein Beitrag zur Pathologie und Bakterio-logie der Gonorrhoe des Mannes. Von Dr. Rudolf Picker. Price M.1.60.

CURRIE, JOHN, Edinburgh.

Medical Examination Questions set at the University of Edinburgh, Royal College of Physicians, Edinburgh, Royal College of Surgeons, Edinburgh, Faculty of Physicians and Surgeons of Glasgow and the University of Glasgow for Several Years. 1909, Price 1s. 6d. net: post free, 1s. 9d.

Questions set at the Fellowship Examination of the Royal College of Surgeons, Edinburgh. Price 1s. net.

ischer, Gustav, Jens.

Sammlung Anatomischer und Physiologischer Vortrüge und Aufsatze. Herausgegeben von Prof. Dr. B. Gaupp und Prof. Dr. W. Nagel. Heft 5. Der Physiologische Stoffaustausch zwischen Blut und Geweben. Von Leon Asher. Price M.1.20. Heft 6. Die Ortsfremden Epithel Gewebe des Menschen. Untersuchungen und Betrachtungen von Dr. Herm. Schridde. Price M.1.60.

Lehrbuch der Klinischen Diagnostik Innerer Krankheiten. Herausgegeben von Prof. Dr. Paul Krause. Price, paper, M.14.; bound, M.16.

OWDE, HENRY, AND HODDER AND STOUGHTON, London.

Oxford Medical Publications. A System of Operative Surgery, By various Authors. Edited by F. F. Burghard, M.S. Lond., F.R.C.S. Eng. In four Volumes. Vol. III. Price, 36s. net per volume, or £6 net per set of four volumes. (Volumes I., II., and IV. published previously.)

HIRSCHWALD, AUGUST, Berlin.

Die Massage und ihre wissenschaftliche Begründung. Neue und alte Forschungsergebnisse auf dem Gebiete der Massagewirkung. Von Sanitätsrat Dr. med. Carl Rosenthal, Berlin. Price M.3.60.

LEHMANN, J. F., München.

Rotters Typische Operationen. Kompendium der Chirurgischen Operationslehre. 8. Auflage. Herausgegeben von Dr. Alfred Schönwerth. Price M.8.

NGMANS, GREEN, AND Co., London, New York, Bombay, and

Charles Darwin and the Origin of Species. Addresses, &c., in America and England in the Year of the two Anniversaries. By Edward Bagnall Poulton, D.Sc., M.A., Hon. LL.D. Princeton, F.R.S., V.P.L.S., F.Z.S., F.G.S., F.E.S. Published Nov. 24th, 1909, being the Fiftieth Anniversary of the Publication of "The Origin of Species." Price 7s. 5d. net.

Beasts and Men. Being Carl Hagenbeck's Experiences for Half a Century among Wild Animals. An abriviged Translation by Hugh S. R. Elliot and A. G. Thacker, A.R.C.S. Lond. With an Introduction by P. Chalmers Mitchell, M.A., D.Sc., LL.D., F.R.S. Price 12s. 6d. net.

ARHOLD, CARL, Halle-a.-S.

Klinik für psychische und nervöse Krankheiten. Herausgegeben von Robert Sommer, Dr. med. et phil. IV. Band. 3. Heft. Preis pro Band, M.12.

NASH, EVELRIGH, London.

Home Exercises for Health and Strength. By Filip Sylvan, M.D. Berlin. Price 2s. 6d. net.

POINAT, A., Paris.

Culture in Vitro des Cellules Cancéreuses. Par Marie Bra-Price Fr.5. ROUSSET, JULES, Paris.

Que faut il manger? Manuel d'Alimentation Rationnelle. Par le Dr. F. X. Gouraud, Ancien Chef de Laboratoire à la Faculté. Préface du Pr. Armand Gautier. Price Fr.3.50.

RUDALL, CARTE, AND Co., London.

The Professional Pocket Book or Daily and Hourly Engagement Diary for 1910. Price not stated.

AMPSON LOW, MARSTON, AND CO., LIMITED, London.

A Beautiful Arm. A History of the Vaccination Delusion. By Amos Booth (of Leicester). With an Appreciation of Mr. Booth's Work by F. G. Stevens (of Leicester). Price 2s. net.

TAYLOR AND FRANCIS, London.

Appendix XXII. to the Second Edition of the Descriptive Catalogue of the Pathological Specimens contained in the Museum of the Royal College of Surgeons of England. By Samuel G. Shattock, Pathological Curator of the Museum. Price

UNWIN, T. FISHER, London and Leipsic.

Monthly Gleanings in a Scottish Garden. By L. H. Soutar. With a Coloured Frontispiece by S. J. Ogilvie and twenty-lour half-tone illustrations by J. Collier Brown. Price 68. net.

Vogel, F. C. W., Leipzig.

Archiv für Experimentelle Pathologie und Pharmakologie. Redigirt von Dr. B. Naunyn und Dr. O. Schmedeberg. Einundsechzigsten Bandes, Viertes bis Sechstes Heft. Price not stated.

WHITE CROSS LEAGUE, London,

The Falling Birth-rate and its Significance. Notes Compiled by Lieut. Col. II. Everitt, R.M.A. (retired), Hon. Secretary, White Cross League. Price 6d.

WITHERBY AND Co., London.

Wanderings Among South Sea Savages and in Borneo and the Philippines. By H. Wilfrid Walker, F.R.G.S. With 48 Plates from photographs by the Author and Others. Price 7s. 6d. net.

Appointments.

- Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Langer Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

- BLATHWAYT, ARTHUR DE VISME, L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Assistant Anæsthetist at the Royal United Hospital, Bath.

 Bond, Francis Thomas, M.D. Lond., M.R.C.S., F.R.S. Edin., has been re-appointed Medical Officer of Health for the South Gloucestershire Combined Sanitary District.

 BOOTH, N., M.B., Ch.B. Vict., has been appointed Senior House Surgeon to the Manchester Royal Infirmary.

 Fraser, Mark S., M.B., Ch.B., D.P.H., F.R.C.S. Edin., has been appointed House Surgeon at the Paddington Green Children's Hospital.

Ilospital.

Jefferson, G., M.R.C.S., L.R.C.P., has been appointed Junior House Surgeon at the Manchester Royal Infirmary.

Lee, Septimus, M.R.C.S., L.R.C.P. Lond., has been appointed Assistant Medical Officer to the Wye House Asylum, Buxton.

McMutrrie, A. C. B., M.B., Ch.B., D.P.H., F.R.C.S. Edin., has been appointed House Physician at the Paidington Green Children's Hospital.

Megus, T. H. E., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Slough District of the county of Buckingham.

Morris, E., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Donington District of the county of Lincoln.

Lincoln.

And Workshop Act for the Donington District of the county of Lincoln.

Nicholls, G. E. E., M.B., Ch.B. Vict., has been appointed House Physician at the Manchester Royal Infirmary.

PLATT, H., M.B., Ch.B. Vict., has been appointed Junior House Surgeon at the Manchester Royal Infirmary.

POPPLE, T. M., M.B., Ch.B. Vict., has been appointed Senior House Surgeon at the Manchester Royal Infirmary.

PRICE, FREDERICK W., M.D. Edin., M.R.C.P. Lond., has been appointed Physician to the Great Northern Central Hospital.

RAMSHOTTOM, A., M.D., M.R.C.P., has been re-appointed Assistant Medical Officer to the Manchester Royal Infirmary.

SMALLEY, A. A., M.B., Ch.B. Vict., has been appointed House Physician at the Manchester Royal Infirmary.

TATTERSALL, N., M.B., Ch.B. Vict., has been appointed House Physician at the Manchester Royal Infirmary.

WILLIAMS, GWYNNE, M.S. Lond., F.R.C.S. Eug., has been appointed Surgical Registrar to University College Hospital, London.

Pacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL, Woodchurch-road Birkenhead.—House Surgeon. Salary £100 per annum, with board, residence, and laundry.

BIRKENHEAD BOROUGH HOSPITAL.—Junior Resident House Surgeon.

Salary £145 per annum, with board, quarters, attendance, and

washing.
Colchester, Essex County Hospital.—House Physician. Salary £80

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Physician. Salary £80 per annum, with board, residence, and washing.
Devonport, Royal Albert Hospital.—Resident Medical Officer, unmarried. Salary £100 per annum, with apartments, board, &c.
DUBLIN, DR. STEFFERS HOSPITAL.—Annesthetist.
EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN. Shadwell, E.—Medical Officer for six months. Salary at rate of £100 per annum, with luncheon and tea.
ENFIELD AND EDMONTON ISOLATION HOSPITAL, Winchmore Hill.—
Resident Assistant Medical Officer. Salary at rate of £150 per annum, with rooms, rations, and washing.
GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £50 per annum, with board, residence, and laundry.
HANLEY EDUCATION COMMITTEE.—School Medical Officer (female).
Salary £250 per annum.

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HAYWARD'S HEATH, BRIGHTON COUNTY BOROUGH ASYLUM.—Third Assistant Medical Officer for six months. Salary 12 guineas a month, with board, residence, &c.

HEMBI HEMPSTEAD, WEST HERTS HOSPITAL.—House Surgeon. Salary

£100 per annum, with rooms, board, and washing.

HÖPITAL FRANÇAIS, 172, Shaftesbury avenue, W.C.—Resident Medical Officer, unmarried. Salary £50 per annum, with full board.

Hospital for Consumption and Diseases of the Chest, Brompton.—
House Physician. Also Assistant Resident Medical Officer. Salary £100 per annum, with board and residence.
Hospital for Sick Children, Great Ormond-street, London, W.C.—
Resident Medical Superintendent, House Surgeon, Assistant
Casualty Medical Officer, and Ophthalmic Surgeon. Also
Junior House Surgeon. Salaries £30 and £60 per annum respectively, with board, residence, and washing.
Hunting on County Hospital.—House Surgeon. Salary £80, with
board, lodging, and laundry.
INDIAN Medical Service, India Office, London.—Thirteen Commissions in His Majesty's Indian Medical Service.
Kincardineshere County Committee on Secondary Education.—
Assistant School Medical Officer. Salary £250 per annum, with
necessary outlays.
Lanark County Council.—Assistant Medical Officer of Health.
Salary £170 per annum, with travelling expenses.

Salary £170 per annum, with travelling expenses.

LISTER INSTITUTE OF PREVENTIVE MEDICINE, Chelsea-gardens, S.W.—
Senior Assistant in the Bio-Chemical Department. Salary £350 per

Senior Assistant in the Bio-Chemical Department. Salary £350 per annum.

LIVERPOOL INFIRMARY FOR CHILDREN.—Resident House Surgeon. Also Resident House Physician. Salaries at rate of £50 per annum with board and lodging.

LIVERPOOL ROYAL INFIRMARY.—Honorary Assistant Physician.

LONDON HOSPITAL, Whitechapel, E.—Anæsthetist.

MANCHESTER, ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—

Fourth House Surgeon for six months. Salary £25, with board and residence.

residence.

Fourth House Surgeon for six months. Salary £25, with board and residence.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Dental Surgeon.

MIDDLESBROUGH, NORTH RIDING INFIRMARY.—Assistant House Surgeon, unmarried. Salary £75 per annum, with residence, board, and washing.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHIST, Hampstead and Northwood.—House Physician. Salary £75 per annum, with board, residence, &c.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queensquare. Bloomsbury.—Resident Medical Officer, also Junior House Physician. Salaries £100 and £50 per annum respectively, with board and residence.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Physician for six months. Salary at rate of £60 per annum, with board, residence, and laundry.

ROYAL FREE HOSPITAL, Gray'S Inn-road, W.C.—Surgical Registrar, Clinical Assistants, Junior Obstetric Assistant (females).

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Curator and Librarian. Salary at rate of £120 per annum, with lunch.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN.—Junior Resident Medical Officer. Salary at rate of £40 per annum, with board and washing.

St. Bartholdmew's Hospital.—Assistant Surgeon. Also Assistant House Physician. Salary £50 per annum each, with board, lodging, and washing.

House Physician. Salary £30 per simum coc., and washing.

Shefffeld Royal Infirmary.—Assistant House Physician. Salary £60 per annum, with board and residence.

Southampion, Free Eve Hospital.—House Surgeon. Salary £100 per annum, with board and residence.

Warrington, Lancashine County Asylum, Winwick.—Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, board, attendance, and washing.

Wolverhampton and Staffordshine General Hospital.—House Surgeon. Salary at rate of £80 per annum, with board, rooms, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Rugeley, in the county of Stafford; and at Ballylesson, in the county of Down.

The Secretary of State for the Home Department gives notice of a vacancy as Medical Referee under the Workmen's Compensation Act, 1906, for the Sheriffdom of Renfrew and Bute, more particularly to the Paisley District of the Sheriffdom.

Births, Marriages, and Deaths.

Braddon.—On Nov. 26th, at London-road, Thornton Heath, Surrey, the wife of William V. Braddon, M.B., B.C. Cantab., of a daughter. Brenan.—On Nov. 30th, at Fairholm, Chislehurst, the wife of A. R. M. Brenan, M.D. Cantab., of a son.

Hystop.—On Nov. 26th, at Castle Hill House, Settle, Yorkshire, the

wife of Dr. B. S. Hyslop, of a son.

MARRIAGES.

GRENFELL—MACCLANAHAN.—On Nov. 18th, at Chicago, Illinois, Wilfred Thomason Grenfell, Superintendent of Royal National Mission to Deep Sea Pishermen, C.M.G., and M.D. Oxon., to Anna MacClanahan, only daughter of Mrs. Edmund B. B. MacClanahan, of Chicago and Lake Forest, Ill., U.S.A.

DEATHS.

- CLARK.—On Nov. 28th, after an operation for appendicitis, Mildred Mary Christie, the loved wife of Percy J. Clark, M.R.C.S., 1, S.A., of 2, Spital-square, Bishopsgate, E., aged 43. Cremated at Goller's Green.
- MRANT.—At Avon Villa, Hillingdon, Uxbridge, Mark Farrain M.R.C.S., L.R.C.P., D.P.H., aged 38 years. INN.—On Nov. 29th, at Hindhead, Robert Marcus Gunn, F.R.C.S., late of 54, Queen Ann-street, W., aged 59 years.

N.B.— A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Rotes, Short Comments, and Answers to Correspondents.

NATIONAL PURE FOOD ASSOCIATION.

A MEETING, convened by the recently formed National Pure Food Association, was held at 20, Hanover square. London, W., on Nov. 30th, under the chairmanship of the President, Mr. F. E. Smith, K.C. M.P., who explained the objects of the association to a small gathering of "pure food" campaigners. In strong contrast with Mr. Smith's guarded statements was the tone of some of the other speakers. Mr. Smith was careful to explain that the majority of traders were above reproach, and that, compared with those shopkeepers to whom it would be repugnant to supply adulterated food, the exceptions were inconsiderable. On the other hand, Canon Horsley left the impression on the audience that the sale of adulterated food was alarmingly prevalent, and he expressed the belief that the reason why the Sale of Food and Drugs Acts was not properly administered in some districts was that too many shopkeepers were members of local authorities. In referring to traders who sell sophisticated food he used the expressions "liars, thieves, and murderers." As not unusually happens when enthusiastic laymen discuss professional subjects, many exaggerated statements were made during the evening, but the exact facts were furnished by Colonel C. E. Cassall and others. Colonel Cassall pointed out that if authoritative standards for foods were set up, these standards would necessarily have to be low, and that by no form of repressive legislation would it be possible to secure a food-supply of high quality. Two resolutions were proposed and adopted. These resolutions urged upon the Government the desirability of appointing a Royal Commission to inquire into the question of food adulteration, with especial reference to the use of chemical preservatives and to the desirability of setting up a food standard of purity by Act of Parliament. The terms of the resolutions were somewhat complicated, and set forth, among other things, that the "recent exposures concerning food frauds afford data whereby the amount yielded may not unreasonably be computed at a minimum of one penny per day per person, which amounts to the colossal sum of £66,000,000 per annum." This sort of calculation serves no purpose.

AN ETHICAL QUESTION.

A CORRESPONDENT Writes :-

A advertises a part of his practice for sale, and is in negotiation with B and C as purchasers. C buys it and a little later B wishes to know if he has a right to start in practice in the same town (population about 120,000), or is he debarred from doing so by having received information confidentially from A

We feel strongly that B should not start in practice in the same town.

MARAT ON MIND AND BODY.

It is pretty generally forgotten that Jean Paul Marat, the notorious revolutionist, attained to considerable eminence as a physician and scientific writer before plunging into the vortex of politics, from which he did not emerge. His earliest and one of his best-known books was published by him in England in 1773, under the title "A Philosophical Essay on Man: Being an Attempt to Investigate the Philosophical Essay on Man: Being an Attempt to Investigate the Principles and Laws of the Reciprocal Influence of the Soul and Body." The book, as Mr. Morse Stephens has pointed out, "shows a wonderful knowledge of English, French, German, Italian, and Spanish philosophers." It is directed against Helvetius, who scoffingly declared in his "L'Esprit" that a knowledge of science was unnecessary for a philosopher. In the "Essay on Man" Marat declared that "Physiology alone can solve the problems of the connexion between soul and body, and proposes the existence of a nervous fluid as the true solution." His work was in fact what would now be called "materialistic." It is curious to find Marat, whom many have regarded as a monster of cruelty during the First whom many have regarded as a monster of cruelty during the First French Revolution, writing, when still a young and polished man of the world and of science, "Observations on the Manner in which Organisation Renders Man Obdurate and Cruel, Compassionate and Humane." If, says Marat, the soul be "united to gross organs, or to fibres too solid or too lax," it "becomes obdurate and inflexible; when united to organs delicate, elastic, and vigorous, it becomes compassionate and tender. Hence pity, although an artificial sentiment, is nevertheless, in every individual, modified by the organisation. The greater the sensibility of man, he may thence be the more humane; and by a very singular consequence, he may thence be the more cruel." A man, for instance, very solicitous for his own wellbeing, will be apt to regard those who threaten it with extreme hatred and will seek their ruin. "Let us therefore conclude, that the more sensible a man is, the more he is obnoxious to hatred, his cruelty is greater, and the more atrocious his character."

Marat was himself a conspicuous instance of the interaction of mind and body. In May, 1792, he returned from England, whither political persecution had driven him, and was compelled to hide in cellars and in sewers, like the characters in Hugo's "Les Misérables." Living the life of a human rat, this once fashionable medical man contracted a horrible skin disease, or developed the later symptoms of lues, and suffered physical agony for some three years, until stabbed by Charlotte Corday in July, 1793, when in his bath. In the bath he wrote the ferocious articles in his paper, the .1mi du Peuple, and here for a time he escaped the worst of his pains; but there can be little doubt that much of his ferocity, his suspicion, and his abnormal hatred of his enemies was due to maddening physical irritation and the knowledge of approaching death.

HEALTH OF THE STRAITS SETTLEMENTS.

ACCORDING to the annual report, just presented to Parliament, of the Governor of the Straits Settlements, Sir John Anderson, G.C.M.G., the present estimated population of the colony is 628,016. The deathrate in 1908 was 43 06 per 1000 of the population, as against 39 07 in 1907. The birth-rate in 1908 was 28 75 per 1000, as compared with 26 11 in 1907. There were 12 deaths from small-pox, 178 from cholera, and 12 from plague. The stringent quarantine regulations and the vigilance of the medical and municipal authorities have hitherto prevented these scourges from finding a permanent home in the colony. Of other important specific diseases beri-beri accounted for 1900 deaths and phthisis for 2988, as against 1626 and 2820 respectively in 1907. In spite of the high death-rate, the climate in the towns and in the country which has long been opened up cannot be considered unhealthy for Europeans, who, if they take ordinary precautions, can, with their higher and more sanitary mode of life, to a great extent avoid the malarial and other tropical fevers and dysentery which attack the Oriental inhabitants of the peninsula. Practically all the hospitals of the colony are under Government management and those maintained on estates are under Government supervision. The number of patients treated in the hospitals in 1908 was 32,805, of whom 974 were Europeans. In 1907 the corresponding numbers were 28,708 and 1193 respectively. Deaths numbered 3869 (62 being Europeans), as against 3688 and 74 in 1907. The rate of mortality was thus 11'8 per cent. of the total treated, as against 12'85 per cent. in the previous year. 417 persons remained in the colonial leper asylums at the end of the year, as compared with 389 on Dec. 31st, 1907. 118 deaths occurred, as against 135.

THE HOME TREATMENT OF TUBERCULOSIS.

At the Tuberculosis Exhibition held last week at the Chelsea Town The Tuberculosis Exhibition held has week at the Cheisea Lown Hall a series of popular lectures have been very well attended by the public. The subject dealt with on Saturday was "The Patient's Part in the Continuation of Sanatorium Treatment at Home." Sir James Crichton-Browne, the chairman, on introducing the lecturer (Mr. Stanley Bates) remarked that there could be no doubt that sanatorium treatment was frequently unjustly discredited from the fact that the patients on leaving, too abruptly resumed their occupations and former mode of life. In his opinion, a period of rigid hygienic discipline was always advisable after the departure of the patient from the sanatorium. It was with this period of transition that the lecturer would deal, recounting his own experiences as a patient. The chairman added that Mr. Bates had the approval of high authority for the open-air shelter he had devised and for the means he advocated for the successful continuance of sanatorium treatment under medical instruction. Mr. Bates, after emphasising the need for such medical supervision and advice, and the necessity of regarding his observations as those of a layman, treated his subject in a practical manner, illustrating his remarks with references to patients discharged from Frimley Sanatorium and with lantern slides demonstrating his own experiences.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Beek.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

TUESDAY.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION (Hon. Secretaries—J. Gray Duncanson, H. Charles Cameron): at 4,30 p.m.

Dr. Reginald G. Hann and Dr. R. A. Veale: A Fatal Case of Poisoning by Phosphorus taken as an Abortifacient, with Unusual Subcutaneous Hæmorrhages.

ascusson: on the Therapeutic Value of the Lactic Acid Bacillus, to be opened by Dr. Herschell. Dr. Haberson, Dr. Eyre, Dr. R. Hutchison, Dr. Goodbody, Dr. Vaughan Harley, and Dr. C. W. Miller, will take part.

Pathological Section (Hon. Secretaries—L. S. Dudgeon, C. Bolton) at Cancer Research Laboratory, Middlesex Hospital, W.: at 8.30 p.m.

ommunications:
Mr. Hastings, Mr. MacCormac, and Mr. Woodman: The Histology of Secondary Carcinomatous Nodules treated with Pitchblende (radium).

Mr. J. Bland-Sutton: Osteosarcoma of Breast.
Dr. H. A. Colwell: (1) Catalase; (2) Autolysis of the Tissues of Malignant and Non-malignant Subjects.
Dr. H. Beckton: Altmann's Granules as a Test for Malignancy or

Non-malignancy.

Dr. J. C. Mottram: A New Method of Estimating K and Na in Tissues, with Observations in Malignant and Non-malignant

- Mr. Bryden Glendining: The Spread of Carcinoma by the Miss Helen Chambers: A New Method of Studying Chemiotaxis.
- Demonstrations
- Dr. Lazarus Barlow: Skotographs.

 Mr. Pearce Gould: A Forearm removed for X Ray Dermatitis and Carcinoma.
- Mr. Somerville Hastings: The Effect of Testicular and Ovarian Extracts on the Development of Ascaridean Ova.
 Dr. Beckton: Altmann's Granules in the Embryo.
 Dr. Mottram: On the Existence in Tissues of Substance which Desensitises a Photographic Plate.

WEDNESDAY.

Balneological and Climatological Section (Hon. Secretaries—Septimus Sunderland, F. A. de T. Mouillot): at 5.30 p.m.

Papers: Dr. Clippingdale: The Chiltern Hills. Dr. Mahomed: Atmospheric Electricity.

Neurological Section (Hon. Secretaries—E. Farquhar Buzzard, Wilfred Harris): at 4.30 p.m.

Clinical Meeting:
Cases will be shown illustrative of Syphilis of the Nervous
System (excluding Tabes and G.P.I.).

Dr. James Taylor: (1) Recurrent Left-sided Convulsions, with Transient Motor Aphasia, in a Left-handed Woman; (2) Left Hemiplegia, with Left Third Nerve Paralysis, in a Woman, with Nodes on Forehead and Corneal Opacities.

Dr. Wilfred Harris: Two Cases of Chronic Syphilitic Poliomyelitis of the Upper Extremities.

And other Cases.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION (Hon. Secretaries-William J. Gow, G. F. Blacker): at 7.45 p.m.

Specimens.

Specimens:
Miss L. Garrett Anderson: Adeno-carcinoma of the Ovary.
Mr. J. Barris: A Tumour of the Uterus of Doubtful Nature.
Dr. Walter Tate: (1) A Case of Myxofibroma of the Ovary Removed under Spinal Anæsthesia; (2) Primary Carcinoma of the Fallopian Tube.
Dr. Clifford White: Quadruplets.
Dr. J. Abernethy Willett: Quadruplets.
Mr. H. J. Paterson: (1) Double Tuberculous Pyosalpinx; (2) A New Apparatus for Continuous Proctoclysis.
Dr. H. R. Spencer: Cæsarcan Section and Hyterectomy for Fibroids with Degeneration of Uterine Muscle.
Short Communications:
Dr. Philip D. Turner: Abdominal Hysterectomy 63 Hours after Labour for a Necrosed and Suppurating Subperitoneal Fibroid.
Dr. A. H. Lewers: Note on a Case of Cystic Tumour of the

Dr. A. H. Lewers: Note on a Case of Cystic Tumour of the Right Broad Ligament springing from the Uterus and apparently Developed from Gärtner's Duct.

CLINICAL SECTION (Hon. Secretaries: H. D. Rolleston, M.D., Albert Carless, M.S.): at 8.30 P.M.

- Mr. Herbert J. Paterson: Case of Gumma of the Breast Simulating Malignant Disease.
 Mr. John R. Lunn: A Case of Acromegaly.
 Dr. Mine (introduced by Mr. Carless): (1) An Acromegalic Giant: (2) Two Cases of Achondroplasis.
 Dr. McMullen (introduced by Dr. Rolleston): A Case of Adiposis Doloross

Dolorosa.

Dr. Herringham: (1) A Case of Aneurysm (2) in a Young Woman resembling that exhibited by Dr. McNaity last meeting: (2) Rheumatoid Arthritis in a Boy with Albuminuria and Enlargement of Glands, Liver, and Spleen.

Mr. A. Carleas: Removal of Large Stone (856 grains) from the Ureter.

Mr. W. G. Spencer: Case of Trephining for General Epilepsy (3

Years after).

Mr. J. D. Malcolm: Case of Cholecyst-duodenostomy for Acute

Emaciation.

Dr. Poynton: Congenital Œdema in Mother and Child associated with Cardiac Defect.

UNITED SERVICES MEDICAL SOCIETY, Royal Army Medical College, Millbank, S.W.

WEDNESDAY.—8.30 P.M., Fleet-Surgeon F. H. A. Clayton, R.N.: Notes on Seven-day Fever of Eastern Ports—its Occurrence in the Navy and its Relationship to Dengue.

HUNTERIAN SOCIETY, London Institution, Finsbury-circus, E.C. WEDNESDAY.—8 30 P.M., Mr. B. H. Fenwick: Surgical Aspects o Kidney Discase.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM, Chandos-street, Cavendish-square, W

Chandos-street, Cavendish-square, W.
 THURSDAY.—8 P.M., Card Specimens by Mr. S. Stephenson, Mr. N. B.
Harman, and others. Delaration of the Poll of the Society re
Amalgamation. 8.30 P.M., Mr. R. W. Doyne: (1) Description of
a Form of Conjunctivitis; (2) A Note on Family Chorolditis
(with patient); (3) A Note on Myopic Degeneration of the Lens
(with patient); (4) Note on a Form of Iritis.—Mr. M. S. Mayou:
Congenital Sarcoma of the Orbit.—Mr. A. P. L. Wells and Mr.
M. S. Mayou: A Round celled Sarcoma of the Lacrymal Gland.

NORTH LONDON MEDICAL AND CHIRURGICAL SOCIETY, Board Room of the Great Northern Central Hospital, Holloway-road, N. THURSDAY. - Mr. E. H. Shaw: Pathological Demonstration.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne street, Edgware-road, W.

Thursday. -8.30 P.M., Dr. W. H. Dolamore: Pyorrhica Alveolaris. -Dr. A. Fleming: The Specific Treatment by Inoculation of Infective Conditions of the Mouth.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c. ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

FRIDAY.—5 P.M., Mr. F. R. Cross: The Brain Structures concerned in Vision and the Visual Field. (Bradshaw Lecture)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

Chemics street, W.C.

Monday.—4 p.M., Dr. W. Evans: Clinique (Skin). 5.15 p.M.,
Lecture:—Dr. D. Ferrier: The Etiology and Treatment of
Tabes.

Tussday.—4 p.M., Dr. L. Guthrie: Clinique (Medical). 5.15 p.M.,
Lecture:—Mr. A. Carless: Some Fractures about the Wrist
Joint (with lantern illustrations).

Weddigay.—4 p.M., Mr. E. Corner: Clinique (Surgical). 5.15 p.M.,
Lecture:—Dr. G. Pernet.

Thursday.—4 p.M., Sir Jonathan Hutchinson: Clinique (Surgical).
5.15 p.M., Lecture:—Prof. W. Thorburn (Manchester): Some
Points in the Surgery of the Billary Passages.

FRIDAY.—4 p.M., Mr. V. Cargill: Clinique (Bye). 5.15 p.M.,
Dr. E F. Bashford: Some Result of the Comparative Biological
and Experimental Study of Cancer.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmithroad, W.

M. Monday.—10 a.m., Lecture:—Surgical Registrar: Demonstration of Cases in Wards.
 2 p.m., Medical and Surgical Clinics.
 X Rays.
 Mr. Dunn: Diseases of the Eyes.
 2.30 p.m., Operations.
 5 p.m., Lecture:—Mr. Bidwell: Practical Surgery.
 TUESDAY.—10 a.m., Dr. Moullin: Gynscological Operations.
 12.15 p.m., Lecture:—Dr. Pritchard: Practical Medicine.
 2 p.m., Medical and Surgical Clinics.
 X Rays.
 Dr. Davis: Diseases of the Throat, Nose, and Har.
 2.30 p.m., Operations.
 Dr. Abraham: Diseases of the Skin.
 5 p.m., Lecture:—Dr.
 R. Jones: The Treatment of Mental Cases by the General Practitioner.

Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. R. Jones: The Treatment of Mental Cases by the General Practitioner.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. B. Harman: Diseases of the Byes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Dr. Low: Prophylaxis of Tropical Diseases.

Diseases
THURSDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration
of Cases in Wards. 12 noon, Pathological Demonstration:—
Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays.
Mr. Dunn: Diseases of the Ryes. 2.30 P.M., Operations. 5 P.M.,
Lecture:—Mr. R. Lloyd: Amesthetics.
FRIDAY.—10 A.M., Dr. Moullin: Gynacological Operations. Medical
Registrar: Demonstration of Cases in the Wards. 2 P.M.,
Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of
the Throat, Nose, and Bar. 2.30 P.M., Operations. Dr. Abraham:
Diseases of the Skin. 5 P.M., Lecture:—Dr. S. Taylor: Pneumonia.

monia.

Saturday.—10 A.M., Dr. Saunders: Diseases of Children. Mr. B.

Harman: Diseases of the Eyes. Dr. Davis: Diseases of the
Throat, Nose, and Ear. 12.15 p.m., Lecture:—Dr. G. Stewart:
Practical Medicine. 2 p.m., Medical and Surgical Clinics.

X Rays. 2.30 p.m., Operations.

Fractical medicine. P.M., Medical and Surgical Clinics. X Rays. 230 P.M., Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

Monday.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery.
3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R.
Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Kar and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine.
3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Special Lecture:—Dr. R. Wells: Some Points in Cardiac Pathology.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Bye.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Rar and Throat. 2.30 P.M.. Dr. G. Rankin: Paralysis in Children in some of its Clinical Aspects.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. Saturday.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. Saturday.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of

10 a.M., Surgical and Medical. 11 a.M., Bye.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

Monday.—Clinics:—10 a.M., Surgical Out-patient (Mr. H. Evans), 2.30 p.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson). 4.30 p.M., Medical In-patient (Dr. A. J. Whiting).

TUERDAY.—Clinic: 10 a.M., Medical Out-patient (Dr. A. G. Auld). 2.30 p.M., Operations. Clinics:—Surgical (Mr. W. Edmunds); Gynæcological (Dr. A. E. Giles). 4.30 p.M., Lecture:—Dr. A. de Prenderville: The Status Lymphaticus and some Other Annesthetic Dangers.

WEDNISDAY.—Clinics:—2.30 p.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Bye (Mr. R. P. Brooks). 3 p.M., X Rays (Dr. H. Pirie).

THURSDAY.—2.30 p.M., Gynæcological Operations (Dr. A. H. Giles). Clinics:—Medical Out-patient (Dr. G. P. Chappel). 4.30 p.M., Lecture:—Dr. A. J. Whiting; Surgical (Mr. Carson). 3 p.M., Medical In-patient (Dr. G. P. Chappel). 4.30 p.M., Lecture:—Dr. A. J. Whiting: Exophthalmic Goitre. FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. H. Bvans). 2.30 p.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Rye (Mr. R. P. Brooks). 3 p.M., Medical In-patient (Dr. R. M. Leslie).

(Dr. R. M. Leslie)

HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.
THURSDAY.—4 P.M., Lecture (Surgical):—Mr. Lane: Some Abdominal Conditions.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

Queen-square, Bloomsbury, W.C.

Monday.—4 P.M., Lecture: Sir Victor Horsley: Surgical Diagnosis and Treatment of Diseases of the Nervous System TUESDAY.—3.30 P.M., Clinical Lecture: Dr. J. Collier: Cerebral

Tuesday.—3.
Syphilis.
Friday.—3.3

-3.30 P.M., Clinical Lecture:—Dr. A. Turner: Muscular

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W
MONDAY.—3 P.M., Clinical Demonstration: Dr. H. Campbell.
TUSDAY.—5 P.M., Clinical Demonstration:—Dr. J. Mackenzle.
WEDNESDAY.—3 P.M., Clinical Demonstration:—Dr. F. Palmer.
THURBDAY.—3 P.M., Clinical Demonstration:—Dr. T. D. Savill.
FRIDAY.—2 P.M., Clinical Demonstration:—Dr. P. Stewart. 5.30 P.M.,
Clinical Demonstration: Dr. E. Macnamara.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-

THURBDAY.—6 P.M., Chesterfield Lecture:—Fungous Diseases of the Skin—I., Tinea Circinata; II., Tinea Imbricata; III., Tinea Versicolor; IV., Erythrasma; V., Actinomycosis; VI., Madura Foot.

OPERATIONS.

METROPOLITAN HOSPITALS.

METROPOLITAN HOSPITALS.

MONDAY (6th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gymscological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopsedic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.).

St. Mark's (2.30 P.M.).

FUESDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), London Throat (2.30 P.M.), London Throat, Goldensquare (9.30 A.M.), Samaritan (9.30 A.M.), and 2.30 P.M.), Thomat, Goldensquare (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Bar (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Bar (Minor, 9 A.M., Major, 2 P.M.).

**TRUMERIALY (8th)... St. Bartholomew's (1 30 P.M.), University College.

Donoth Infoat and Bar (2 P.M.), Children, Gt. Ormonastreet (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Bar (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (8th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Smaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Guy's (1.30 P.M.), Royal Agr (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Bar (Minor, 9 A.M., Major, 2 P.M.).

WIURSDAY (9th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Kharing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), North-West London (2 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (9,700 A.M.), And 2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynsecological, 2.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Bartholomew's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), Middlesex (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), Cancer (2 P.M.), Children, Children, Gt. Ormond-street (9 A.M.), Cancer (2 P.M.), Children, Children, Gt. Ormond-street (9 A.M.), Cancer (2 P.M.), Children, Children, Gt. Ormond-street (9 A.M.), Cancer (2 P.M.), Children, Children, Gt. Ormond-street (9 A.M.), Children, Children, Gt. Ormond-street (9 A.M.), Children, Children

SATURDAY (11th).—Royal Free (9 a.m.), London (2 p.m.), Middlesex (1.30 p.m.), St. Thomas's (2 p.m.), University College (9.15 a.m.), Charing Cross (2 p.m.), St. George's (1 p.m.), St. Mary's (10 a.m.), Throat, Golden-square (9.30 a.m.), Guy's (1.30 p.m.), Children, Gt. Ormond-street (9 a.m. and 9.30 a.m.), West London (2.30 p.m.).

At the Royal Bye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 2nd, 1909.

Date.	Barometer reduced to Sea Level and 32° F.		Rain- fall.	Solar Radio in Vacuo.	Maxi- mum Temp. Shade.	Min.	Wet Bulb.	Dry Bulb.	Remarks.
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In Address

ON

A RENEWED RESEARCH ON THE SUBJECT OF ACUTE OVERSTRAINING OF THE HEART.

Delivered at the Opening of the Winter Session of the West London Post-Graduate College on Oct. 11th, 1909,

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MY LORD DUKE, LADIES, AND GENTLEMEN,—Before proceeding to read you my paper on acute overstraining of the heart, allow me to express my sincere thanks to the distinguished faculty of the West London Post-Graduate Medical College for the great honour they have conferred upon me by their kind invitation to deliver this address this evening.

While in the first half of the last century the valvular affections of the heart, with their train of symptoms, received the almost exclusive attention of the medical world, the chronic diseases of the cardiac muscle, and above all its functional disturbances, became later on the subject of much closer investigation. The organic changes in the heart muscle were in many cases not difficult to determine, either macroscopically or more especially under the microscope, but it was otherwise in the case of those disturbances which we denote as purely functional. it was here that—as must be familiar to everybody, especially in this country—the pioneer work of Peacock, and his observations on Cornish miners, acquainted us with the true character of cardiac overstraining. From that time forward this chapter of cardiac pathology has never ceased to command the sustained and watchful interest of the medical world. Furthermore, the great development of athletic sports which has taken place during the last two decades, especially here in England, has greatly increased the number of cases of cardiac overstraining which in consequence came under medical observation. observations of Peacock were confirmed later on by the investigations of Myers, Clifford Allbutt, Da Costa, Johann Seitz, Münzinger, and others. Nevertheless, knowledge of the true facts concerning overstrain of the heart could only win its way very slowly, for many declared themselves to be definitely opposed to the new teaching, whilst others spoke with very great caution and made known to the world their manifold doubts on the question, as, for instance, von Schroetter, E. Seitz, and Strümpel. It was the investigations of Levden and Fraentzel which once more gave a fresh impetus to the researches on this subject.

I myself have reported in the year 1890 at the Ninth Congress of Internal Medicine in Vienna a series of experiments which I made in order to determine whether bodily overstraining could produce alterations in a healthy heart, and also to determine eventually the nature of such changes. For this purpose I selected young, robust individuals, from 14 to 32 years of age, whose previous state of health, as well as the physical examination to which I subjected them, showed them to be free from any anomaly of the heart whatever. I made two of them wrestle with one another, resisting or lifting each other, until a high degree of dyspnea had been produced by the previously increased muscular straining. In a second series of experiments, in order to increase the dyspnœa and render the cardiac action still more difficult, I fitted a leather belt close under the costal arch of the subjects and made them wrestle while thus hampered. In both series of experiments I actually did find that, when such severe physical overstrain leads to dyspnœa, the heart undergoes a greater or lesser amount of dilatation. This I designated as acute cardiac dilatation, which, of course, is to be regarded as a temporarily abnormal, but not as a pathological, condition. This, as I mentioned at the time, is evidenced by the fact that in healthy, robust persons such an artificially produced cadiac dilatation can generally recede entirely within a very short time, often in one or two minutes. I must add

¹ See the Transactions of the Ninth Congress for Internal Medicine in Vienna, 1890. No. 4502. that in my first experiment the cardiac dilatation was determined, not only by a colleague and with ordinary percussion of the absolute cardiac dulness, but also by myself, and according to the method of my brother, August Schott, consisting in the percussion of the total heart limits with lateral limitation. The experiments I made with this method on animals, as well as the investigations conducted by me later on in the Berlin Maison de Santé on the human cadaver, have shown the possibility of determining the anatomical limits of the heart by means of this kind of percussion.

When, subsequently, the heart and its movements were made evident to the eye by means of the Roentgen rays, I found all the observations I had made by percussion fully confirmed, not only by the determination of the heart limits on the barium platino-cyanide screen, but by Roentgen photographs as well. It is especially these that show the expansion of the left ventricle, and notably with a depressed diaphragm. In order to find the true measures I rendered the nipples visible by means of small pieces of thin sheet lead, while by fixing the body of the subject under examination with straps around the head and shoulders, also by very exact drawings of the outlines of the feet on the floor, I had taken care to place the man always accurately in the same position relative to the apparatus, before wrestling and after. I had marked the nipples exactly by making dots on gelatine strips, and using these as reference marks I could verify their being again in the same place at the second examination. Naturally, only such experiments were regarded as conclusive in which all these precautions were rigidly adhered to. It was also the purpose of the above-described experiments to show that by a succession of bodily over-exertions the clinical picture of chronic cardiac overstraining may be developed. For, as I mentioned at the time, chronic overstraining of the heart is to be regarded as the result of a repetition of excessive muscular efforts. In order to illustrate this point I also added to my article the description of a few cases, and I found my views to coincide with the observations of Peacock, Clifford Allbutt, Fraentzel, Leyden, and several others.

Not only my experimental researches, but also my statements concerning especially such cardiac anomalies as follow the indulgence in excessive athletic sports, soon found confirmation in the works of Mendelsohn, and more particularly in the enlargements of the heart found in bicyclists by Albu and in ski runners by Henschen. Indeed, it seemed for a while as if chronic cardiac overstraining, solely produced by the cumulative effect of repeated and abnormally strong muscular efforts, was to be incorporated as a picture sus generis of cardiac pathology. This, however, did not last long. The former objection was heard again, that no heart can undergo permanent dilatation or hypertrophy through severe muscular overstrain unless previously altered, either in structure or in function. In this connexion doubts were also entertained whether, in my experimental investigations on acute overstraining of the heart, the subjects of the experiments had been entirely normal. These doubts were especially accentuated by the orthodiagraphic examinations of Moritz, Aug. Hoffmann, and de la Camp. Not only do these experimenters claim to have found in the course of their investigations no cardiac changes at all, or at best very insignificant ones, but they even state that best very magnificant ones, but they even state that they observed cases where a diminution in size of the heart had actually occurred. About the same time, as we shall see further on, others confirmed, on the strength of their own researches, the occurrence of acute cardiac dilatation. tion following acute overstrain in previously healthy individuals. Owing to material causes it was only in the year past that I was able to undertake further experiments on the subject which interests us here, and it is upon these, as well as upon other correlated experiences gained, that I wish to report here as briefly as possible. The first question to be considered is whether it is possible for a healthy heart muscle to hypertrophy from an excess of work.

If this question be answered in the affirmative, the question would also be answered whether an excess of work will cause a heart muscle to dilate, since nowadays there is hardly a divergence of opinion regarding the theory that dilatation is the primary, hypertrophy the secondary lesion. The old view of Fraentzel to the contrary may now be considered as controverted, while that of Thurn, Jürgensen, J.

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Bauer, and others is, with few exceptions, generally considered to be correct. It lies in the very nature of the case and my brother was the first to call attention to the fact-that in such conditions we have only to deal with an accumulation of blood in the cardiac cavities—in other words, with a passive, congestive dilatation, as opposed to a dilatation by compensation. And now the fine experiments of Külbs on young dogs working a long time on the endless inclined plane have revealed that cardiac hypertrophy due to work does occur, without arterio-sclerosis, without kidney affections, even without increase in size of other parts of the muscular system. Külbs communicates the results of the post-mortem examination of the hearts of such dogs as follows: "Through physical work we can succeed in bringing about, in young dogs of the same litter, of the same sex, and approximately of the same weight, a fairly considerable increase of weight of the heart, both absolute and relative. The proportion of heart to bodily weight changes in this sense, that the working dog acquires a cardiac weight approaching that of the roe-deer, whereas the dog kept for verification and comparison of results showed the proportional weights to be those of the ox."

It is thus physiologically established that simple performance of labour can lead to hypertrophy of the heart. But in men also it has been proved beyond a doubt that there is such a thing as pure, simple cardiac hypertrophy. The exaggerated pursuit of athletic sport, which during the last 20 years has been constantly on the increase, has confirmed all the observations reported in my first publication, and one may find a large number of communications concerning cases where it was simply the physical overstraining due to excessive indulgence in athletic sports that impaired the hitherto healthy heart and led to chronic cardiac overstrain, even in youths who had not suffered from previous maladies nor indulged in the inordinate use of alcohol, tobacco, coffee or tea. This is shown in numerous examples, which can be found in the extensive literature we already have on this subject, in very exact clinical histories as well as in the increased size of the heart found by means of the most diverse methods of percussion, also with the Roentgen rays, including the orthodiagraphic process. I need only here make a passing reference to the fact that sudden strong emotion, fright, or shock, are liable to produce very injurious effects on the heart, and medical men have ample opportunity of observing how prolonged anxiety or mental overstrain often impair the muscles and nerves of the heart. Von Frey in his physiological work very correctly points out that one finds dilatation with cardiac hypertrophy as the result of continued physical overstrain in persons whose hearts had not been subjected to any other noxious influences. And it is just exactly to this fact that I should like to call especial attention. All the former allegations regarding chronic cardiac overstrain having thus been confirmed, the only question requiring further consideration is, whether severe bodily overstrain is capable of exercising a direct effect upon the heart—in other words, whether abnormally severe muscular strain can bring about acute cardiac dilatation.

First of all, I should here like to meet the objection that my cases were persons whose hearts were abnormal, debilitated, or suffering from functional alterations. I experimented on 14 robust youths and young men, from 14 to 34 years of age, and with many of them I frequently repeated the experiments. I have kept most of them under supervision for many years, and to the present day their hearts have remained healthy without exception. As before mentioned, Mendelsohn, Albu, Henschen, and many others have recently confirmed the facts which I had established by percussion. Once more I must premise that the results I had obtained with percussion were corroborated by my radiograms in 1897. Not only did I find a cardiac dilatation, but also a change of form of the heart, which was oval before the experiments, whereas after the wrestling the dilated heart had acquired a more circular form, this with the diaphragm forced downwards. The left cardiac half, which did not reach the nipple line before, extended beyond it ufter the overstrain. The change of form as such is a fact. There might at most be a difference in the elongation of the transverse diameter due to shadow projection, but this cannot be of consequence, since by proper selection of the time of exposure, the person under examination being in the same position, the heart lies close to the

anterior thoracic wall, so that really only the thickness of the chest wall would have to be considered. And now the question arose whether, and to what extent, orthodiagraphic examinations give us better results.

It is not to be doubted that the discovery of orthodiagraphy by Moritz means a progress in the examination and observation of the interior of the body, this being especially the case where it is a question of determining the size of organs at rest or of foreign bodies within the organism. But it is a different matter when it comes to the determination of the size of organs in motion, of which one wishes to make comparative observations at different times. Not only does this apply to the heart but to other organs as well, such, for instance, as the stomach or the intestines while in motion, &c. For we should not forget that every orthodiagram we obtain is the orthogonal, therefore the vertical projection of the greatest extension in one plane. This plane is invariably the same in the resting immoveable body, and therefore in this way we always obtain the same exact size of this body. It is quite different, however, with organs whose position changes more or less like the beating heart. And we shall see that it is exactly these movements of the heart that have to be considered in our experiments. In his extensive work on the subject Guttmann has already pointed out that with orthodiagraphy rotation of the body or changed position of the individual could in repeated delineations or drawings of the cardiac boundaries in different planes lead to differences of from 1 to 2 centimetres and more. Excepting a paper read by Hoffmann in a former congress, I nowhere find any indication that in the experiments made on men or animals the same attitude and position had actually been maintained during the orthodiagraphic examinations made at different times. This repeated use of the same canvas frame does not of itself offer any guarantee of an identity of position. Attempts have been made of late to obtain photographs of the heart with the shortest possible exposure, even in a fraction of a second, and also with the kinematograph. Apart from the fact that the resulting pictures are often wanting in clearness we never know positively in which phase of the heart cycle such photographs were made.

Quite recently, in the course of my work at Nauheim, the two following cases, amongst others, have come under my notice which exactly illustrate my theme. The first case is that of a medical colleague, aged 38 years, whose roentgenogram had been taken by medical men experienced in taking orthodiagrams, and these skiagrams had shown an enlarged heart. The dilated stomach had displaced the heart outwards and upwards. As soon as normal conditions of the digestion were restored the size of the heart was found by percussion to be normal and there remained, without any other abnormality whatsoever, only a simple neurosis of the heart which suitable treatment by means of baths, exercises with resis:ance and massage, speedily improved. The second case is that of a Russian lady, aged 44 years, who has for several years had myocarditis on a basis of diabetes, with the heart dilated to the right and to the left. Both the mitral and the aortic valves had systolic murmurs. In addition there were pronounced symptoms of angina pectoris; yet in spite of all this the orthodiagram taken in Berlin, as also the electrocardiogram showed absolutely normal conditions.

I have already on former occasions called attention to the fact that in order to avoid errors it was necessary to resort to the use of exact marks on the persons to be examined, and in certain cases to fixations that do not interfere with the respiration. It is exactly this which is shown in the heart silhouettes in de la Camp's work, and which were made according to the rules laid down by Moritz. Not only does, as de la Camp states, a changed location of the diaphragm and increased thoracic circumference after wrestling take place, nay, the subject under examination, after the experiment, has actually taken an entirely different position relative to the apparatus. This is clearly evident from the fact that the position of both nipples, relative to a hypothetical horizontal plane, is different before and after the wrestling, this difference allowing a fourfold decrease in size of the heart silhouette amounting to 14 centimetres. In other words, the second results were obtained in an entirely different plane from the first ones, and therefore, even for this reason, they are not to be considered as conclusive. The drawings published by Aug. Hoffmann cannot be accurately judged of, since neither the right nipple nor the location of the diaphragm is depicted in them. After all that has been said, it is hardly necessary to maintain that in view of the possibilities of such great sources of error we are still far from being able to determine the superficies of the heart within one single square centimetre, or its contents in a quarter, a half, or in a whole cubic centimetre. But, as we shall see further on, the possibility of other sources of error will also have to be considered.

A number of further observations have been reported meanwhile by other authors, and these are likely to throw more light on the question of overstraining of the heart. According to the orthodiagraphic examinations by the three investigators mentioned, it appeared as if great interferences with the cardiac functions, changes which, in his experiments on dogs, de la Camp produced artificially in the cardiac valves as well as in the heart's muscular apparatus, had no immediate deleterious effect. And yet the observation of such changes in men should already lead to misgivings, for great dilatation follows acute valvular inflammation. To give a few examples. Beck in his work "Touring and the Heart" reports on 31 young men, in 28 of whom he had occasion to observe the immediate effect of mountainclimbing. We are, above all, interested in his statement that there had been no previous illnesses and that mountainclimbing, which simply produced palpitation and shortness of breath, was followed not only by cardiac symptoms but also immediate dilatation, which he was able to demonstrate by percussion, in one case even by radioscopy. He saw, just as I did, such dilatations disappear in a very short time, often after a few minutes, and he shares my opinion that it is only a matter of over-accumulation of blood within the heart cavities. Beck reports other cases in which the dilatation persisted for a longer time, though in the healthy heart never longer than until the following day. But he also saw cases where, solely through frequently repeated mountain climbing, in persons that otherwise had always enjoyed perfect health, the picture of myocarditis as well as that of mitral insufficiency developed itself. Staehelin, in his observations on Swiss recruits, also pointed out that mountain climbing may lead to acute dilatation of the heart in previously healthy young men, while Düms shows how, simply on account of the severer strain to which soldiers are subjected nowadays, the number of cardiac affections is on the increase in the armies of the different countries. Beyer attributes this evil to the ever-increasing indulgence in the sport of bicycling.

Two years ago Baldes, Heichelheim, and Metzger reported the observations they had made on a number of young men, otherwise in excellent health, after a march of 100 kilometres (60 miles) in one day. In a relatively large percentage of the examinations, by means of percussion of the absolute heart limits, they found dilatation. It is especially to this work that I shall have occasion to revert again. The number of observa-tions on the influence of bicycling on the heart is especially large, and the deleterious effect of this sport is confirmed by nearly all of them. This is particularly evidenced in racing, where heart troubles have been observed in relatively large numbers, also in cases where no other injurious factor was present. But in opposition to these observations we again have others, in which, even after very strenuous physical labour, no enlargement of the heart could be demonstrated, whether by percussion or by radioscopy. I only refer here, among others, to the investigations of Pfeiffer, published a few months ago, which he conducted on men, partly after protracted marches, partly after bicycling tours. In this category also belong the observations of Schieffer, to which I shall shortly revert. But the objections are by no means exhausted herewith. Even diminution in size of the heart after overstrain was found by means of orthodiagraphic examinations, such, moreover, as could not possibly be attributed to changes of position of the disphragm-for instance, the examination made on swimmers by Kienböck, Selig, and Beck, and which led to the risky theory that the heart was relieved by the increasing flow of blood to the abdomen.

This conflict of opinion grows in importance if we consider the following facts: Dr. Baldes, Dr. Heichelheim, and Dr. Metzger kindly allowed me to avail myself here of the results of their unpublished experiments. These gentlemen last year determined the heart limits on healthy persons, ortho-diagraphically, before and again after a march of 100 kilometres in one day. Moreover, these orthodiagrams were

made with the diaphragm in the same position, partly by an expert official of the United Electrotechnical Institute of Frankfort o/M., Aschaffenburg, and partly by Dr. Baldes, who for two years almost daily made radiograms with Rieder in Munich. And now, instead of the enlargement of the heart formerly made apparent by percussion, they found a reduction in size. The copies of their orthodiagrams, which you see here, show very changing pictures. Sometimes we notice an enlargement of the right cardiac half with a reduction in size of the left half, then again the reverse is the case. But most striking above all is the great difference of form in the heart before and after the march. Particularly instructive is the case of a man who had made a very quick run of several hundred metres and had been orthodiagraphed while labouring with dyspnœa. The enlargement of the right half of the heart amounts here to 1 centimetre. On the other hand, the left half not only shows you a transverse diameter reduced by 3 centimetres, but the totally changed and flattened form makes it evident that the orthodiagram of this heart was taken in an entirely different plane after the run than before. The difference in position of the nipples, relative to each other, in the pictures taken before and after the march, argues in favour of this.2 Like those of Hoffmann, all these orthodiagrams were made while the person under examination was in the erect position.

Last year a paper was published by Dietlen and Moritz, according to which they also found smaller hearts after bicycling. This paper exactly proves that it is by no means sufficient to register the results of orthodiagraphic examinations; also that orthodiagraphy of the quickly beating heart is still far removed from constituting an unobjectionable method for the determination of its size. Disregarding the fact that in these examinations by Dietlen and Moritz it is not conclusively proved that the cardiac diameter obtained before and after bicycling represent identical cardiac planes, the cases described do not at all come under the head of genuine acute overstraining of the heart such as I produced in my experiments. As evidenced by the communications themselves of both named authors, their subjects of experiments did not have any albuminuria or apparent palpitation as found by other authors, neither did any dyspnœa develop itself during the entire trip. Judging from this, there may have been a straining involving a quicker pulse, also great fatigue, but a real overstrain was out of the ques-And yet this is of capital importance.

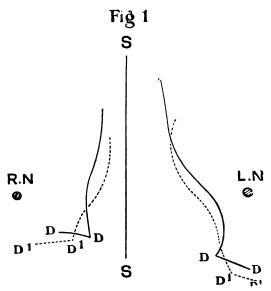
Schieffer, who works in Moritz's clinic, did not, with orthodiagraphy, find any change in the heart whatever immediately after bicycling. Regarding the degree to which the straining was carried, whether or not to the extent of dyspnœa, he fails to impart any information. So that here also there is no agreement between the facts as found and the orthodiagraphic examinations already mentioned. Yet this ought to be the case, were it not that, so far as the beating heart is concerned, orthodiagraphy shares with other methods of examination the disadvantage of inherent sources of error.3

Last autumn, and before I had any knowledge of the investigations above mentioned, I began to verify orthodiagraphically the results of my former experiments on acute overstraining of the heart. Again I had the wrestling and resistance exercises performed by men in absolute health, of unobjectionable health record, whose hearts exhibited normal limits and normal functions. The dispositions were exactly the same as in my former investigations. Measurements and drawings were taken only after excessive dyspnœa. profuse perspiration, palpitation, &c., had manifested themselves. Examinations of the blood pressure and sphygmographic drawings were dispensed with, their results being sufficiently known. The radiograms were obtained in St. Mary's Hospital in Frankfort o/M., partly by the director of the hospital's Roentgen cabinet, Sanitätsrat Dr. Schmidt, partly by Mr. Dessauer, director of the United Electrotechnical Institute of Frankfort o/M., Aschaffenburg.

² Dr. Baldes, whom I only saw in this connexion after these lines

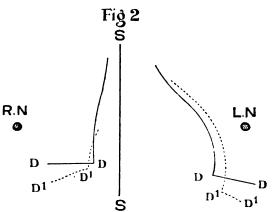
³ Dr. Baldes, whom I only saw in this connexion after these lines were written, remarked to me that he also had been struck by this change of mammiliary positions, this being one of the reasons why the three above-named authors could not decide to publish their results, preferring to make further experiments.
³ A few months ago Schieffer added two more publications to his former paper, also pertaining to this subject. The orthodiagrams, which are intended to show the influence of the different occupations and of military service on the size of the heart, were made exactly like those of Moritz and his pupils, as described above, thereby failing to offer any guarantee as to the reliability of the results obtained.

were made with Dessauer's trochoscope-orthodiagraph, it being claimed that this apparatus furnishes the most reliable results. I had made the wrestler's nipples apparent by pasting on them small pieces of thin sheet lead, and the middle thoracic line by a leaden wire fixed to the chest. The heart's limits were always determined during the condition of maximum diastole and lowest position of diaphragm by means of the well-known perforated screen. The dotting appliance was always exactly vertical over the anticathode of the tubes. In some instances the heart limits were traced directly on the man's thoracic integument, and in others on a horizontal drawing plane, adapted close to the thorax by



s designates the sternal line, RN and LN the right and left nipple, D and D¹ the location of the diaphragm. The continuous lines mark the cardiac outlines before, the dotted lines after, wrestling.

means of a holder. But even with such a perfected apparatus pictures are obtained that differ very much, this being due to several circumstances. It often, for instance, takes a long time before the person to be examined succeeds in reassuming accurately the same attitude in the horizontal position. Besides, it is very difficult for most people to lie quietly with great dyspnœa. Rotations of the entire body are especially apt to set in, which is, however, immediately made

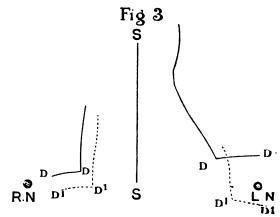


The continuous line indicates the limits of the heart after five minutes' wrestling, the dotted line after ten minutes.

manifest by the positions relative to each other of the marked nipples and sternal line. Or the heart, which in this position is strongly pressed upwards by the diaphragm, rotates considerably on its longitudinal axis. In addition to this, as I have shown in my first work on this subject, it happens that the lungs, being over-inflated through the dyspnæa, compress the heart more or less forcibly from both sides, diminishing its power of action, even displacing the greatest

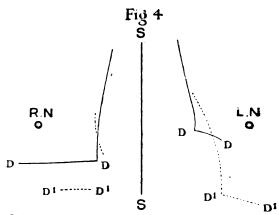
transverse diameter into another plane, unless the disappearance of this artificially produced pulmonary inflation be awaited.

All these elements have to be considered when we wish to obtain pictures susceptible of being mutually compared. I have kept accounts of all these points in my experiments and I now proceed to show you first two orthodiagrams taken by Director Dessauer. In the first one of these (Fig. 1) you see the heart exactly in a phase where, in stormy jerks, it is making powerful movements about its longitudinal axis. After about five minutes' wrestling the heart appears smaller in all its diameters. And in the second orthodiagram (Fig. 2)



Orthodiagram after a first bout of wrestling. The continuous lines mark the cardiac outlines before, the dotted lines after, wrestling.

you see the same heart after five more minutes' wrestling. Although it took a relatively long time to obtain these second outlines, the heart with diaphragm depressed appears manifestly extended to the left. The subject under examination was an absolutely healthy cabinet maker, 34 years of age. The frequency of the pulse had increased from 68 to 116 per minute, respiration from 14 to 28. The orthodiagrams were made on the drawing plane. In most of the experiments I also took notice of the apex beat, except where this was hidden by the costal arch, and after the wrestling I noted an outward and downward displacement. And what I should like to lay especial stress on here is that, with a careful examination, it is by no means so difficult, as claimed, to palpate the left lower limit of the heart muscle in the vicinity of its apex. When the index finger is held perpendicularly



Orthodiagram after a second bout of wrestling. The continuous lines mark the cardiac outlines before the wrestling was resumed, the dotted lines after the end of the wrestling.

to the heart muscle and pressed deeply into the costal interstices, the heart's impact may be felt very plainly, and this motion of the heart as such may be clearly differentiated from the concussion of the thoracic wall.

And here we have two orthodiagrams made by Sanitätsrat Schmidt. They belong to a robust, healthy man of 32, who had never used alcohol, tobacco, &c., in excess. The orthodiagram made after the first wrestling (Fig. 3) shows, even

with deeply depressed diaphragm, the heart forced out of position and in such a manner that the right cardiac half appears to have become smaller, the left, on the other hand, enlarged. And now we take the same man after a few minutes' more wrestling (Fig. 4). Here, with strong dyspnea, profuse perspiration, with an increase of pulsation from 70 to 123-125 and of respiration from 12-13 to 30-32, the picture is as follows: The right cardiac half, which was taken last, shows no change of transverse diameter with moderately depressed diaphragm; on the other hand, the left ventricle after 14 minutes of severe wrestling, naturally performed with several interruptions, has become enlarged 3 centimetres, this with a 5½ centimetre downward displacement of the diaphragm. Altogether a very considerable increase of the transverse diameter of the entire heart, as I have already described it in my first publication.

And now, before closing, I should like in a few words to revert to the question as to what might be the causes that led the several experimenters to such different results regarding the dimensions of the heart in cases of acute overstraining. First of all, we have to consider the circumstance that the determination of the cardiac dimensions may have been made under very different conditions. One investigator, for instance, may have examined during the period of pulmonary inflation; another one, perhaps, after the heart's dilatation had already diminished; while a third one may have determined the maximum cardiac extension while the heart muscle was in the state of greatest relaxation. Of course, it is evident that anyone who did not take part cannot render a reliable verdict on the correctness of the several results of percussion. True, the observations, as well as the nature of the experiments themselves, often differ so much that it is difficult to compare them with each other. To illustrate: Zuntz and Schumberg examined soldiers who had climbed high mountains, laden with accourrements, until difficulty of breathing ensued, and found, while simultaneously testing the inferior pulmonary limits, dilatations in the transverse cardiac diameter amounting to 2 to 3 centimetres, which results Staehelin confirmed. How different the result in Altschul's cases, of which he himself was the first subject of experiment. Namely, after he had bicycled a considerable time on a bad road against a strong head wind I noted-and so did he—a marked cardiac dilatation. On the other hand, he himself, a trained tourist, hardly found any cardiac changes at all in himself or in other trained tourists after a also not troubled with any particular difficulty of breathing. Again, we have the very opposite in the results arrived at by Beck, the men he experimented upon having scaled steep mountains until dyspnea set in. And just compare Pfeiffer's results of his experiments on the effects of protracted marches with those of Baldes, Heichelheim, and Metzger, also those obtained on bicyclists by Pfeiffer with those of Albu.

The cause of the divergence between the experimental results can be traced without any great difficulty, for according to the physiological researches of later years the heart is constructed in such a manner as to represent the most perfect motor with which we are so far acquainted, so that it is capable of answering to the smallest stimulus with a maximum development of power. Moreover, it possesses the faculty to adapt itself to changed demands. Thus, for instance, the dog's heart is capable of taking in six times its normal quantity of blood and yet the left ventricle succeeds in overcoming this amount and contracting again completely. Certainly the heart's work increases enormously in overcoming such obstacles, and the increased intra-cardiac pressure must also be taken into account. But it is a well-known physiological fact that the dog, as far as the heart is concerned, can be subjected without detriment to considerably greater and longer hardships than the human organism, although fortunately the latter also possesses in its cardiac muscular apparatus and in its vascular system all kinds of temporary compensatory arrangements. And to these compensatory powers it is due, as I particularly stated in my first report, that the limits of over-expansion of the healthy heart may lie far apart in the muscularly strong individual. At the same time we see, nevertheless, that the qualities of the heart as a muscle manifest themselves, and to these also belong laxity and expansion as a consequence of excessive strains.

My Lord Duke, Ladies, and Gentlemen, I am firmly convinced that every physician, especially here in England, who has the opportunity to observe a considerable number of cases of heart affections will easily find confirmation of the fact that in individuals previously normal, and solely through the most different forms of overstraining, the heart may be brought first to acute dilatation, and finally through its repetition to permanent dilatation, with all its consequent phenomena.

ON FUNCTIONAL DISORDERS OF THE COLON.*

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UNDER this heading it is proposed to describe all conditions of the colon which are associated with marked constipation without the occurrence of any gross disease. It includes, on the one hand, the extreme cases of idiopathic dilatation of the colon, most of which are congenital; and, on the other, those cases of chronic constipation which are probably due to a sluggish action of the large intestine. The necessity of considering such widely differing conditions together arises because of the existence of many intermediate groups of cases in which the colon is lengthened, dilated, and kinked and severe constipation exists, but it is impossible to determine whether the dilatation or constipation is the primary event. In other words, there are many cases in adults in which it is difficult to decide whether the colic hypertrophy is congenital or acquired, whether it is idiopathic or secondary, whether it is the cause or the result of chronic constipation. It is quite possible for well-marked dilatation of the colon to exist without causing any characteristic symptoms. For example, Baron relates the case of a boy, nearly two years old, who died from scarlatinal nephritis and in whom a well-marked mega-colon was found at the necropsy which had given no symptoms during life.

The following case, which occurred recently at the General Hospital, illustrates the latency which sometimes characterises the disease. A labourer, aged 61 years, was admitted to hospital in March, 1909, suffering from cyanosis, shortness of breath, and cedema of the legs. He had had no previous illness. There was great distension of the abdomen, but no tenderness or dulness to percussion. He died suddenly within 24 hours of admission. Post mortem no disease was discovered except an enormous dilatation, with lengthening of the colon. The following were the chief measurements:—

Part.		Len	gth.	No	ormal.	Cir	cumferenc	e.	Normal.
Cæcum .	••	3 in	ches	25	inches	••••••	15 inches		11 inches
Ascending colon	ļ	134	,,	4	••		_	····•	
Transverse colon									_
Descend- ing colon									_
Sigmoid		33₺	••	24	**	•••••	15½ inches		7 inches
		Total	len	gth, 92½	inches ;	normal	, 56; inche	8.	

The ascending and sigmoid portions of the colon were most markedly kinked, the sharpest angulation occurring 11 inches from the rectum. But there was no evidence of acute obstruction nor of peritonitis.

It may be possible, therefore, that a dilated colon exists as a congenital defect, but gives rise to no symptoms until adult life. It is well known, on the other hand, that any mechanical obstruction to the bowel will cause the intestine above to be affected in exactly the same way as is found in the congenital disease. Any adult case may, therefore, be one of congenital or acquired disease, but it is seldom possible to be sure which.

Historical.—The existence of extreme dilatation of the colon without any actual stenosis or obstruction has been described by a few authors many years ago. Billard,² in the early part of the nineteenth century, described a necropsy on a child 6 days old, in whom the whole of the colon was hypertrophied and sclerosed. Ammon ³ in 1822 related the

^{*} The superior figures throughout this article refer to the bibliography printed at the end.

case of a child who died soon after birth in whom the colon and rectum were dilated. Oulment4 (1843) and Favalli5 (1846) and Banks (1846) described cases which rather resembled those of chronic constipation with secondary distension of the large bowel. Gay 7 (1854) published an account of a boy, aged 3 years, who died from typhus fever, and in whom the whole large intestine was greatly distended, as he thought by paralysis. Instances of the more typical form of congenital dilatation of the colon were described by Henoch (1861) in a boy two years old; Jakobi⁹ (1869), Barth ¹⁰ (1870), Peacock ¹¹ (1872), Gee ¹² (1884), Bristowe ¹³ and Morris ¹⁴ (1885). In 1886 after Fütterer, Middledorpf, ¹⁵ and Garrille Morris ¹⁴ (1885). Gaum 16 had described isolated cases, Hirschsprung 17 collected all these previously published facts, together with his own observations, and gave an account of the general features of the disease. Hence it is known in Germany as "Hirschsprung's Krankheit," but it is evident that the facts do not justify this personal nomenclature, and it is better, therefore, to give it the descriptive name of "idiopathic dilatation of the colon." In its well-marked congenital variety it is a very rare disease, but if all cases of dilatation of the colon with severe constipation but without any mechanical obstruction be included, then it is possible to collect from the literature about 150 cases, and upon an examination of these the following account is based.

Pathological anatomy.—The whole colon alone may be distended, or more frequently only special sections are affected, the pelvic colon having the most marked tendency in this direction. In 93 cases where this point is specially mentioned the distribution of the dilatation is as follows:—

The degree of dilatation varies within very wide limits in different cases, and in the same case at different When the abdomen is opened the distended viscus is often described as resembling the stomach, or as being as thick as a man's thigh. It is frequently 18 centimetres in diameter, and between 50 and 60 centimetres in circumference in adult cases, and in infants it may reach 35 centimetres round. In several of the recorded cases the size of the distended coils varied very much under different conditions. In one of my cases the colon, which was so large as to obscure all the rest of the intestines at the time of the first operation of colostomy, was only of normal size when it was excised. Hawkins 19 describes a case of an infant 3 weeks old who died after an exploratory laparotomy, the whole colon down to the splenic flexure being so dilated as to cause a visible tumour through the parietes, and yet after death this part had resumed its normal appearance. This point will be referred to again in discussing the question of "phantom tumours" caused by colic In most cases the length of the colon is dilatation. increased as well as its diameter, but this does not always In the two following lists, taken from Löwenstein's article, 18 these facts are illustrated:

Cases illustrating the abnormal length of the colon.

Author. Age.			L	engi	th.	Greatest circumference				
Tittel 29	14	years		107	centimetres		21.3	centimetres.		
Berghinz 41	14	,,		98	,,					
Fenwick 42							20			
Concetti 43								,,		
Barth 10										

Cases of great dilatation with no increase in length of colon.

Author.	Age.	Length.
Bernheim Karrer 44	1 year	 83 centimetres.
Gourevitch 45	14 years	 73 ,,
Graanboom 46	4 months	 67 ,,
Baron 1	2 ,,	
Bjorksten 47		
Pfisterer 48		
Ring 49	5	19

In comparing the ages in these two lists, it will be noted that cases where there is no increase in length are generally very young children, which suggests that dilatation is the primary condition, and the increase in length comes on later as a part of the general hypertrophy. The capacity of the colon is greatly increased and in many cases it seems to be

only limited by that of the abdomen. In most cases this may be indicated during life by the large quantity of fluid which can be injected per anum, but this test is open to two fallacies, one to the fact that a kinking of the gut may prevent the fluid from filling the colon, and the other to the rapid absorption of the fluid as it runs in. The following figures relate to the amount of fluid that could be poured into the colon post mortem:—

Author.	Age of patier	Capa	city.		
Concetti 43	. 2½ years		4 litres.		
Le Roy des Barres 50			5	,,	
Barth 10			6	,,	
Futterer 15			8	**	
Peacock 11	28		16	**	

The enlarged, and often lengthened, coils of colon become necessarily kinked and twisted in order to accommodate themselves to the cavity of the abdomen. This is most notably the case with the transverse and pelvic portions. The former is dragged down by the weight of its contents so as to form a long dependent loop hanging into the pelvis. The latter assumes the horse-shoe or Ω shape, which is so characteristic of volvulus, and, indeed, as is mentioned later, it not infrequently is the preliminary stage of sigmoid volvulus. The normal flexures become exaggerated, the first part of the transverse colon with the hepatic flexure presenting a complicated folding like the letter W, and the two limbs of the splenic flexure lying in contact with each other for several inches. And lastly, there is in nearly all cases involving the pelvic colon a well-marked sharp kink at the beginning of the rectum. So much is this the case that Hawkins 19 remarks that it is often possible to wash out the gut through a rigid rectal tube when a flexible one will not pass into the pelvic colon.

The outward appearance of the bowel is normal as a rule, but white or œdematous patches occur on its surface sometimes. In children the lymph glands are often increased in size and number. The wall of the colon is usually thickened (6 millimetres) and this hypertrophy, whilst affecting chiefly the circular muscle layer, also involves the mucous membrane and submucous tissues. The tænia are present as broad bands 3 or 4 centimetres wide, and in some cases the longitudinal fibres exist as a continuous coat round the bowel. This thickening of the muscular coats is rightly insisted on by many authors (cf. Hawkins) as a clear evidence of the effort made by the bowel to empty itself of its contents, and is comparable to the hypertrophy of hollow muscular viscera—e.g., the heart or bladder—which often accompanies dilatation. In some cases (Treves, 54 Dodd, 28 Hawkins, 19 Case 9) one or more segments of the bowel are remarkably contracted, and when the contracted portion lies distal to the dilated it is probable that the former condition may be the cause of the latter.

According to the majority of authors inflammatory changes are comparatively rare, at any rate in their grosser forms of external adhesions or internal ulceration. The mucous membrane is often infiltrated by leucocytes and its connective tissue much increased. Ulceration which is secondary to fæcal impaction is sometimes found, and is to be inferred in those cases where much blood-stained diarrhæa occurs during life.

According to Löwenstein, 18 the blood-vessels—especially he arteries—are thickened and their lumen partly obliterated. Unfortunately the condition of the nerves is seldom mentioned, but in Gee's case 12 they were remarkably hypertrophied, and Geddes 74 has recently described an identical condition. In extreme degrees of the disease and in chronic cases the pressure of the dilated colon produces obstruction to the venous circulation, with resulting ædema and an enlargement of the collateral circulation. From the same cause the urine may be scanty and albuminous, or there may be pain in the front of the thighs from pressure on the anterior crural nerves (Grey). 32 The diaphragm becomes pushed upward, and the thoracic viscera correspondingly compressed and displaced. The heart's apex is lifted to the third or fourth interspace and the bases of the lungs are collapsed. These extreme chest abnormalities are only found in children; probably they are incompatible with prolonged life.

Physical signs.—In well-marked cases of the disease the abdomen presents an extreme degree of distension, being globular or barrel-shaped, and in children the contrast

between the blown-out belly and the contracted chest and the sunken face is very striking. The girth of the abdomen is usually greatest above the umbilicus, being, e.g., in a case related by Fenwick, 12 26 inches (65 centimetres) above and 24 inches (60 centimetres) below.

In young children the chest is very stunted in its growth and capacity, measuring often only 10 to 12 centimetres from the top of the sternum to the ensiform cartilage, and being only one-fifth or one-sixth of the distance between the ensiform cartilage and the pubes. The margin of the ribs is everted, the subcostal angle being widely opened out. The whole abdomen is tympanitic and the liver dulness is lessened as a rule, and in many cases it is comparatively flaccid and soft. Occasionally fæcal masses can be felt and even indented by pressure (Woolmer 33), and this sign is more likely to occur in cases caused by chronic constipation in adults than in the congenital variety in children. When these hard fæcal masses do occur, they are very likely to give rise to an error in diagnosis. There is no ascitic fluid found in the abdomen, and this fact seems to weigh very strongly against the existence of inflammatory changes in the peritoneal cavity. The parietal wall is very thin and often covered by large veins. Through it can be seen the distended coils of intestine so clearly that the part affected by the dilatation can often be made out before the abdomen is opened. The most usual disposition of these loops of colon is in a vertical direction. The distended pelvic colon lies usually as a large n, the apex of which may touch the costal margin. When the ascending and transverse colon form visible loops they, too, are disposed in the long axis of the abdomen. Next to the pelvic colon the ascending colon seems most frequently to form a visible coil, and the descending colon is most rarely thus affected. From time to time the distended coils can be observed slowly to contract, and a sluggish peristaltic wave is often accompanied by audible borborygmi. On rectal examination very different conditions may be found. In a few cases the sphincter ani has been found tightly contracted (Treves, 54 Grey, 52 Wilms, 55 Hawkins 19), but that this is not an essential feature of the case is shown by the majority not presenting it, and further, by cases in which it is patulous or paralysed (Kredel 56). A painful fissure in ano is a common result of the excoriation produced by the passage of hardened fæces.

Onset.—The severity of the symptoms varies very much in different cases, and in the same case from time to time. Remaining latent generally for some time after birth, insidiously arising after the distension has become wellmarked, and varying with treatment or diet, the symptoms of colic dilatation sooner or later become so severe as to cause death, either by pressure on the chest or by intestinal obstruction or perforation. The latent period is difficult to estimate, because when the condition arises in adults it is always in doubt whether there has been a long-standing or congenital dilatation of the colon, or whether this has arisen secondarily to the constipation. But that true and extreme cases can exist without symptoms is proved, not only by Baron's case of scarlatina, in which it was found at the necropsy, having given no symptoms during life, but also by the many cases in which, after the bowel had been mechanically emptied, the patients remained well for long periods (Brooks, ⁵⁷ Fletcher and Robinson, ⁵³ Grey, ⁵² Hawkins, ¹³ Case 5). But the great majority of even adult cases give a history of obstinate constipation which dates back to their childhood. Some writers (Hale White, 59 Hawkins, 19 Fenwick 12) have laid stress on the condition never being found in the new-born, and have argued from this that there is no proof of its congenital origin. But in addition to the improbability of such a condition occurring within a few weeks or months of birth without the existence of any obstruction there are several instances recorded in which the child was born with a greatly distended abdomen which subsequently proved due to the dilated colon (Escherich, ¹⁰ Stirnimann, ⁰¹ Hobbs, and de Richmond ²¹). In Escherich's case the newly born child had a girth of 77 centimetres, with a body length of 37 centimetres.

The first onset of symptoms, apart from mere constipation, may be in earliest infancy, occurring when the child is at the breast, in childhood, or in late adult life. Hawkins draws attention to the fact that most cases present themselves for treatment before 10 years of age, and that nearly all the adult cases are over 40, the incidence between these periods adult cases are over 40, the incidence between these periods chondriac regions, in the position of the ascending colon. being very rare. As exceptions to this, however, may be

mentioned a man of 28 (Woolmer ¹³), a woman of 21 (Brooks ¹⁷), and a woman of 36 (Groves). ⁷³ In 91 cases collected by Löwenstein is the time of onset of symptoms was as follows: 55 "since birth," 13 in first year, 11 between 1 and 20, 9 later than 20, and 3 at 70 or over.

The sex incidence shows a very marked preponderance of males, and this is more marked in the infant than in the adult The actual figures given by different authors indicate varying proportions, but all agree in the above statement. In 122 cases, 94 were males and 28 females (3.35:1). In infancy the proportion of males to females is 7 or 10:1; whilst in adult life it is 2 or 3:1.

Symptoms.—Obstinate constipation, loss of appetite, and emaciation are the chief features of the disease throughout its whole course. Usually the constipation is quite unmistakeable, the interval between the stools being over a week. In my case the patient would go for three weeks without an action, Grey's two or three weeks, '2 Johannessen's five weeks, 22 Roth's six weeks,23 Rolleston and Haward's nine weeks,24 and Gay's three months. Usually the constipation is well marked before distension occurs, but in other cases the bowels act quite regularly. This is important, because if the possibility is not recognised the nature of the case may be quite overlooked. Just as it is very common to get distension of the bladder associated with incontinence, so, too, there may actually be diarrhœa in cases of fæcal stasis. It is not enough for there to be a regular evacuation of the bowels, but unless the quantity evacuated is equal to that received by the colon fæcal accumulation must take place. It is common for attacks of diarrheea to alternate with constipation, and when this occurs the patient is often much relieved, and the distension diminishes, but the abdomen seldom resumes its normal proportions. The presence of blood and much mucus in the motions is rare, and when it occurs with diarrhœa it is of grave import, indicating ulceration of the intestine.

Emaciation very soon becomes pronounced in children, and is partly caused by the loss of appetite. In adults it is of great importance, because it indicates that the metabolism is being seriously disturbed. In this respect it would afford a valuable indication as to the necessity of treatment. As long as a case of constipation, however severe, remains well nourished, it will probably yield to drugs, enemata, and diet. But when progressive emaciation sets in, the patient has not long to live, unless some radical treatment is adopted. And with the faulty nutrition there is generally some affection of the nervous system. In infants drowsiness and convulsions are common, and the latter may be the cause of death. In Langmead's case 25 the child suffered from severe tetany. With older children the mental development may be greatly impaired (Grey 52), and in adults various degrees of neurasthenia or melancholia are very common. If persistent diarrhœa takes the place of constipation the temperature rises, symptoms of peritonitis set in, with vomiting and convulsions, indicating the occurrence of a perforation. But with the exception of this possibility, vomiting is quite unusual and is never stercoraceous. In young children various lung complications, such as bronchitis or broncho-pneumonia, are common causes of death, being caused, no doubt, by the great pressure on the thoracic viscera.

One other sign, that of the phantom tumour, remains to be discussed. The term is applied to an abdominal swelling which disappears when the patient is anæsthetised. It was first described in this connexion by Fitz 26 in 1899, and by Richardson 27 in 1901. In both these cases the patients were women of the neurotic type, in whom a "phantom tumour" might be expected. At first the diagnosis was regarded as being purely that of neurosis when it was found that the swelling disappeared under an anæsthetic. But in both cases the patients developed a degree of dilated colon which required surgical treatment.

In one of my cases 73 the same phenomenon was observed some time after the patient had had an ileo-colostomy performed. She was a woman, 37 years of age, who undoubtedly wished to attract attention to herself, for she was in the habit of making her thermometer register an alarming temperature by placing it against the hot-water bottle. She complained of attacks of abdominal pain, and at these times a very large resonant mass rose up in the right loin and hypo-

several days together the abdomen would be perfectly Then for two or three days the abdomen became distended, and at intervals the localised swelling would reappear. On one occasion, when it was well marked, she was anæsthetised, and it slowly subsided as she became un-conscious. She left the hospital for several months, but she then again complained of severe pain and begged for some further operation. On this occasion when she was in the hospital there was noticed a wave of contraction slowly passing along the swelling, from below upwards and to the left. At the operation, however, the ascending and transverse colon, which was excised, presented nothing unnatural in size, length, or appearance; and in Hawkins's 19 fourth case, in a boy three weeks old, a coil of colon proximal to the splenic flexure, which was greatly distended during life and during an operation, appeared to be quite normal after death. The phenomenon probably indicates a profound disturbance of the neuro-muscular mechanism of the bowel.

The faces.—Whilst the capacity of the colon is greatly increased it is not always filled with fæces, but is often distended by gas. In the chronic forms, and especially in adults, there may be a great accumulation of hard, solid material, so that as much as a kilogramme (2 pounds) can be washed away at a time. In some cases it is so hard that it has to be broken up in the rectum before it can be removed, and in Brooks's 57 case there was a mass of vegetable fibre in and in Brooks's ⁵⁷ case there was a mass of regements, which the pelvic colon weighing 20 ounces (560 grammes), which we provide the put. Usually had to be removed through an incision in the gut. the first fæces removed are slate-grey and very offensive, but in several instances (Hawkins 19) it is noted that they were remarkably odourless. In the more acute conditions of obstruction which often precede surgical interference the contents of the bowel are quite fluid, and can be evacuated through a tube.

Course of the disease.—The condition is essentially a chronic one, and except in the case of young children the patients may live for months or years after wasting has set in. One case is related which died 6 weeks (Pfisterer 43) and another 11 weeks (Hirschsprung 17) after the onset of symptoms. At first purgatives afford relief, but soon they become inoperative; then enemata are tried and give a longer period of respite. In several instances after the bowel had been emptied by operative or mechanical means the patient has remained well for an indefinite period (Fletcher and Robinson, 55 Brooks, 57 Grey, 52 Hawkins 19). The earlier the symptoms manifest themselves, the more rapid is the course of the case likely to be, and, indeed, in most of the adults a history of chronic constipation goes back as far as their memory. The actual cause of death may be some lung disease or convulsions in infants; perforation, peritonitis, or toxemia in any case.

Etiology.

The exact causes of this group of diseases will always remain in obscurity, because so many factors are involved and it is a matter of opinion in any given case as to the relative proportion of the different factors in bringing it about. At least seven different contributory causes have been recognised and it will be convenient to consider them severally.

1. Obstruction, in the sense of an actual blocking of the lumen of the gut, probably never occurs as a primary condition. When the bowel is examined post mortem there is usually no obstacle to the free passage of fluid throughout its lumen, and this is certainly the case after the colon has been removed. Occasionally, however, a hard mass of fæces becomes impacted in some part of the lumen (Brooks 57), and when this is removed the symptoms of the disease may disappear. It is extremely probable that this obstruction by fæcal masses often occurs as a secondary cause when the condition is of long standing. Having regard to the fact that in normal conditions the fæces do not assume a solid consistency before the lower part of the transverse colon is reached, this is perhaps one reason why the lower part of the bowel is more often affected than the upper. A degree of kinking may be present which affords no obstacle to the passage of fluid contents, but when a hard solid mass has to negotiate the same passage-e.g., the splenic flexure, or the sharp angle between the pelvic colon and rectum—it may well be that a blocking occurs. This may not be an absolute obstruction, but it is well known that a partial or intermittent obstruction of a duct is the

most potent cause of hypertrophy and dilatation of the hollow viscus behind it, as is seen so well in the case of obstruction of the ureter by a loose calculus, or of the urethra by a stricture.

- 2. Increased length.—There is no reasonable ground for supposing that the mere increase in the length of a healthy piece of bowel can cause any difficulty in the passage of its contents. The small gut, which is four times as long as the large, never is subject to the disability we are considering. But the large bowel is so tied down to the parietes that its undue elongation almost necessitates its taking the form of sharp turns and twists, and if the increased length has any share in the production of obstruction it can only be in this way. That this lengthening is not, however, a necessary condition is shown by the many well-marked cases already referred to in which the colon is of normal length. But several facts, on the other hand, seem to show that it must be regarded as a contributory cause in most cases. One of these is the sex incidence. is known that the colon is longer naturally in the male than in the female. Although this greater length may not amount to very much yet it is chiefly distributed in those parts of the bowel, such as the pelvic colon, which are not laid down in exact lines against the parietes. And for the same reason, therefore, volvulus of the pelvic colon is much commoner in men than in women. There seems to be no other explanation of the greater prevalence of these two diseases in the male sex than the greater length of the bowel.
- 3. Kinking.—That the kinking of the various dilated loops upon one another must greatly embarrass the onward flow of the fæcal contents is the most natural explanation, and it is irresistibly suggested by the condition of the abdomen filled by huge coils which are doubled sharply upon themselves. It is a matter for simple experiment that if a length of bowel removed from the body be laid in a confused heap in a basin there is some difficulty in filling it with water. One coil fills, and at the point where it is doubled upon itself the next coil is held closed. But whilst this does not represent the physiological condition in which the bowel itself affords the propelling force, it shows the increased difficulty caused by a sharp turn in the gut. It is particularly in those segments of the bowel which lie proximal to the natural or exaggerated angles of the colon which become most affected by dilatation. Thus the pelvic colon has a sharp kink between itself and the rectum, the ascending and transverse colon end at the splenic flexure, and it very often happens that it is one or other of these sections of the bowel which alone is dilated. The descending and iliac colon, on the other hand, which form the straightest part of the large intestine, are the parts most rarely affected by this disease
- 4. Muscular insufficiency.—As far as can be judged from the structure of the affected colon there is certainly no muscular weakness. Whilst the whole gut wall is much thickened, being often 6 millimetres-i.e., about three times as thick as usual—this hypertrophy affects chiefly the circular muscle. And that this hypertrophied muscles does contract vigorously during life is shown by the visible peristaltic contractions seen through the thin parietes, especially in children. It is probable, however, that when any segment of the bowel is dilated beyond a certain point, the muscle is so stretched that it becomes paralysed, for this is consistent with what is known of muscle physiology throughout the body. And judging from the analogy of other obstructed muscular viscera, the dilatation and hypertrophy are probably antagonistic to one another, and when the dilatation has overstepped a certain degree the hypertrophy is unable to keep pace with it. Further, it must be considered that with the increase of muscle there goes a certain degree of fibrosis, with an increase of cellular and connective tissue, which indicates a chronic degeneration of the muscle.
- 5. Spasm.—It is quite clear, however, that the muscular act which is necessary for the propulsion of the colic contents is not a simple contraction, but an orderly succession of such contractions by the circular muscle fibres coördinated with contractions of the longitudinal tænia. And at the time when the muscle is hypertrophying, to meet some difficulty caused by kinking or by constipation, if one particular section becomes stronger than another it may very easily actually hinder rather than help the fæcal stream. In several cases it has already been mentioned that the

sphincter ani has been tightly contracted, and, after all, the internal sphincter is only a specialised part of the circular muscle. In other cases (cf. especially Hawkins, 10 Dodd, 21 Treves 54) there has been a tight spasm of a considerable segment of the colon below the dilated portion. This in the cases mentioned affected a part of the pelvic colon, and was no doubt a large factor in the cause of the general condition. It may well be that this occurs very often in a lesser degree which disappears post mortem.

6. Disorderly nerve impulses. - Inasmuch as the muscular contractions are controlled by the nervous system, what has been said in the last paragraph applies with equal force to any irregularity in the passage of nerve impulses. The only anatomical ground for regarding the nerves themselves as abnormal is found in Gee's and Geddes's cases, 12 74 where the nerve plexuses were hypertrophied. But the disorder is one of function rather than structure. If the facts of the physiology of the colon be considered it is evident that the nerve control of the colic movements is very complex. Not only is there the coördination of peristaltic with antiperistaltic movements, but the different sections of the bowel are affected differently by nerve impulses. Whilst the greater part of the colon is under the control of the inferior mesenteric plexus, the lower portion-including the descending and pelvic portions—is made to contract by stimulation of the lower sacral nerve roots. This may serve to bring about that very spasm of a distal segment and dilatation of a proximal segment which we have seen does actually exist if there is any incoördination of the nerve impulses. In adults, at any rate, there is often noticed an association between conditions of neurasthenia and colic dilatation, which may be explained on this hypothesis.

7. Constipation.—How far constipation is the cause, and how far it is the result, of dilatation of the colon is a most debateable point in the etiology of this condition. But inasmuch as constipation is merely a negative condition resulting from an altered activity of the bowel, an altered consistency of the fæces, or a voluntary resistance of the desire for defacation, it seems unreasonable to regard it as the prime cause of the condition of the bowel, since it itself must be secondary to one of the above-mentioned conditions. The fæcal material is an inert passive matter in the grasp of an active vital tube, and, therefore, any stagnation of fæces must primarily be due to changes in the gut, rather than vice versa. But if constipation has once been caused by the firmness of the fæces, by neglect of evacuation, or by mechanical or vital insufficiency of the bowels, it may be a potent factor in increasing any abnormality of the colon. By the mere bulk of the fæces dilatation may be produced; by the increased absorption of bacterial products the muscular wall may be injured; the presence of a hard fæcal mass may block a kinked gut. But in any given case it is well-nigh impossible to say how large a share constipation has had in accentuating the pre-existing condition. One criterion there is, however, which helps to distinguish between cases of primary and secondary colic dilatation, and that is the history. In cases in which the patient has had obstinate constipation since infancy there is a strong presumption that the colon is dilated. In cases where constipation appears for the first time in adult life, and is found to be associated with dilatation of the colon, the latter may be secondary, but it is even then impossible to be sure that the anatomical abnormality has not always existed but been overcome by muscular hypertrophy, and that in later years the hypertrophy fails and gives place to dilatation. Two further signs there are which seldom occur in secondary dilatation: these are great abdominal distension and visible peristalsis. If these tests-viz., history, distension, and visible peristalsis—be used to distinguish idiopathic dilatation of the colon from the mere results of chronic constipation, then it is found that in the latter group there are present in the colon a somewhat different group of changes from those above described. I have elsewhere 75 described a well-marked case of primary constipation, with its secondary consequences, and I may summarise them here as being: A dilated condition of the cæcum, ascending and transverse colon; kinking of the hepatic and splenic flexures, and the displacement, with kinking, of the transverse colon; downward dragging of the pyloric part of the stomach, and the consequent acute flexion of the duodenum.

Biliary lithiasis and appendicitis are also no doubt remotely

connected with constipation; but in my case there was no evidence of any inflammatory adhesions binding the surface of the colon to neighbouring viscera. When I saw the specimen first, I thought that these did exist with the gallbladder, but further consideration leads to the conclusion that it is merely a peritoneal ligament; and it is certainly remarkable that throughout the literature (except in Lane's papers) all mention of peritoneal adhesions is absent in the description of the actual cases. The facts illustrated by the specimen referred to differ from those in idiopathic dilatation very little. The differences are two: the dilated part of the colon is the upper portion, and there is no evidence of muscular hypertrophy, whereas in idiopathic dilatation it is the pelvic colon which is most often affected, and muscular hypertrophy is well marked. A further point of distinction lies in the sex incidence. In idiopathic dilatation of the colon males preponderate, in adults in the proportion of 3 or 2:1, whereas in chronic constipation the proportion is more than reversed. In Lane's series of 39 cases of "chronic constipation," for example, 5 were males and 34 were females (1:7).

How many of the other affections which may be found in any case of constipation can be regarded as resulting from this will be a matter of opinion or speculation. If we accept Metchnikoff's idea that the intestinal decomposition lies at the root of all senile tissue degeneration, then we shall be prepared to regard everything abnormal associated with constipation as resulting from that. For instance, in my case scoliosis, enteroptosis, suppuration, and dislocation of the hip may have occurred as the direct or remote results of absorption of bacteria and toxins from the colon; but such a view is utterly at variance with the spirit of scientific deduction, which demands evidence rather than speculation in support of theories.

Mr. Arbuthnot Lane 51 has, however, followed the speculative line in the treatment of this subject to its extreme limit. According to this author the following conditions are caused by chronic constipation: fixation of the colon, especially the ascending and pelvic portions, by peritoneal adhesions; atrophy of the wall of the sigmoid flexure; the formation of special "mesenteries" at the hepatic and splenic flexures which drag upon the colon and produce kinking; adhesions of the transverse colon to the adjacent limbs of the ascending and descending colon; adhesions at the base of the appendix, dragging upon the right kidney; distension of the small intestine; pain in the right renal region from dragging on "adhesions" at the hepatic flexure, and in the sacro-iliac region from the dragging of the cæcum; dilatation of the stomach by "gases of decomposition" and by the back pressure through the small intestine; offensive breath, with a general "grave-yard" smell; mental depression and drowsiness, loss of fat, pigmentation of the skin over the face and in the flexures; matting of the ovaries and Fallopian tubes, displacements of the uterus, and loss of uterine tone; cystic degeneration of the ovaries and breasts, and sterility. But as Lane has brought forward no detailed description of actual cases which bear out his facts and no evidence which supports his theories, they must stand as the mere expression of opinion which is not supported by that of other writers.

Regarding the peritoneal "adhesions" I have pointed out that these are often merely normal variations of peritoneal folds, and that the surface of the colon is remarkably free from adhesions to adjacent structures. The process by which the ascending colon becomes more firmly tied down to the parietes than is normal is explicable much more simply than by supposing its surface to be dragged down and fixed to adjacent structures by inflammation. When the colon dilates its peritoneal covering will be insufficient and will become stripped off from its posterior aspect, so that instead of only a fourth of its surface being without peritoneum, nearly a half may so become destitute. The same reasoning applies to changes in the length of the gut. When a fixed part of the colon increases in length it becomes thrown into folds, and the peritoneum covering it will stretch in the form of tight bands from fold to fold, instead of always dipping down into the crevices between the dilated If these bands were inflammatory they would pouches. probably be adherent to structures outside the bowelthey are not-and would be tightly fixed to the bowel instead of being easily removed from it. But if adhesions are regarded as always resulting from some definite inflammatory

disease—e.g., appendicitis, gall-stones, or gastric ulcer—they will require direct surgical treatment, where this is possible, and even if obstinate constipation be associated with such conditions, it will be far more reasonable to classify these cases as chronic obstruction due to adhesions, rather than to confuse them with simple constipation or colic dilatation. In several of Lane's own cases (Cases 17, 19, and 21) this contention is proved by the sequence of events. That is to say, the patients had pain vomiting, and constipation, the abdomen was opened, and adhesions were found connected with gastric ulcers. The cases were treated, nevertheless, as though due primarily to colic stasis by ileo-colostomy or excision of the colon. This treatment either proved fatal (Cases 17 and 19), or had to be followed by a subsequent gastro-enterostomy, after which the patient made a good recovery (Case 21).

To summarise, then, the etiological factors, it is evident that any or all of seven causes may combine to bring about the final condition in extreme dilatation of the colon. These are:—obstruction by fæcal impaction, increased length of the colon, kinking, muscular insufficiency, local muscular spasm, ncoördinated nerve impulses, and constipation. But it cannot be certainly said that any one of these has been proved to be of primary and universal occurrence, the probability being that more than one factor exists primarily in most cases and that the others may play a secondary part

The classification of these conditions will depend largely on the view taken of their etiology. It is most commonly made into (1) primary or idiopathic, and (2) secondary or acquired dilatation, and although this distinction no doubt exists, it is of not much value because it is impossible to be sure that dilatation may not have existed for a long time in a latent condition. The more useful classification would be made on an anatomical basis, because this can always be made by radiography, and it is an important basis for treatment. In this we should distinguish three main groups: (1) proximal dilatation affecting the ascending and transverse colon and the execum; (2) distal dilatation affecting the pelvic colon, and much more rarely including the descending colon and rectum; and (3) general dilatation affecting the whole colon. And in cases of obstinate constipation without much dilatation this same classification will hold good if the term stasis be substituted for that of dilatation.

Treatment.

Whilst it is evident that in its extreme form "idiopathic" dilatation of the colon is one which requires surgical treatment, and that in its slight grades medical and dietetic measures will suffice, there must always remain an intermediate group of cases in which there is a difference of opinion as to what should be done.

Diet.—Dealing first with the slighter stages of the disease, most authors advise easily digested diet which leaves comparatively little residue—such being, of course, milk, fish, eggs, and white bread. But it is possible that in some cases the colon will react better when stimulated by bulky food residue, such as that left by brown bread, porridge, and vegetables, and Concetti da advocates such a diet as being the most satisfactory. There must, however, be some difficulty in determining if the colon is really emptying itself when fed with the coarse food. The motions may be bulky and even regular, but, on the other hand, there will probably be a larger residue left in the colon. This point could be decided only by mixing bismuth with the food and noting the condition of the colon by radiography.

Drugs.—In almost all cases these are useless, and they are worse than useless when great distension exists. Saline aperients, calomel, castor oil, and even croton oil cause some griping, but no evacuation of the bowels. One of my cases could take two drops of croton oil without any apparent result. Probably stimulating drugs such as strychnine, iron, and aloes will be more beneficial; and Grey ⁵² relates in one case how, after clearing out the colon by enemata, he was able by means of aloes and iron pills to restore the tone of the bowel.

Enemata.—Here, again, the use of rectal injections can only succeed if the bowel is capable of responding to the direct stimulation of distension, heat, or chemical agents, and if the injections can be thrown into the affected parts of the colon. Further, if an irregular spasm exists, as has been described in some cases, this spasm may be intensified by injections.

Therefore it is that enemata have only a limited usefulness. Probably some form of oil injection is the most valuable, because it is much more slowly absorbed, and because it will soften the hard fæcal masses. In one of my cases 75 a pint of olive oil was injected by a long tube at night, and the next morning an enema of hot soap and water with one ounce of turpentine was administered. By this means a daily evacuation was procured when all other means had failed.

Other tonic measures.—When diet, drugs, and enemata seem likely to give relief, the use of massage and electricity will be of use in aiding the recovery. In theory it would seem that an electric stimulus was the most ideal treatment, but in practice its value seems to be little more than that here indicated—i.e., an adjuvant to other measures. This may be due to the physiological facts relating to the coördination of muscular contractions and nerve impulses. An electric stimulus may start a colic contraction, but this may increase an already existing spasm, or it may excite the anti-peristaltic wave more than the peristaltic contractions. Conditions which cause or favour enteroptosis should be avoided. These are the use of corsets and the usual attitude of defectation. For these should be substituted an elastic abdominal belt and defectation in a squatting position into a utensil on the ground. Physical exercise should be taken with the special view of strengthening the abdominal muscles.

Surgical treatment.—In cases of true idiopathic dilatation of the colon there can be no doubt that surgical treatment is demanded and should be performed with the least possible delay. If all the means indicated above have proved inefficacious, operation should be advised before the patient's general nutrition has suffered by emaciation and toxemia. In cases where the diagnosis is doubtful and obstinate constipation is the most prominent feature, the indications for operative interference would seem to be as follows: A long history of constipation dating back to childhood and indicating probably a congenital defect in the colon; failure of diet, drugs, and enemata to afford permanent relief; marked and increasing distension of the abdomen; visible peristaltic contractions; progressive loss of flesh.

In comparing the results given by medical and surgical treatment respectively, Löwenstein 18 gives the following figures relating to 103 cases:—

But it has to be borne in mind that many of these cases occurred at a period when surgical interference was only resorted to as a last resource. Lane 31 has published accounts of 39 cases of so-called chronic constipation on whom he operated with 9 deaths (23 per cent.), but of these 39 at least 17 are cases of inflammatory diseases (colitis 3, gastric ulcer or adhesions 5, intestinal adhesions, usually from appendicitis, 9), and excluding these there are 22 cases of simple colic stasis, with 5 deaths (22.7 per cent.). Ito and Goyesima 32 relate 21 cases treated by resection, with 14 good results and 6 deaths (28.5 per cent.). The actual operations which have been performed for these conditions are: Mechanically emptying the bowel, colostomy, colopexy, colo-colostomy, colo-proctostomy, ileo-colostomy, and colectomy.

Removal of the bowel contents.—In some instances it would appear that the colon is so inert that it cannot contract until it has been mechanically emptied of its contents, and it may be impossible to do this through the anus. Brooks, in the case of a woman, 21 years old, found a hard vegetable concretion in an enormous pelvic colon. The bowel was excised, the mass removed, and she made a good recovery. Fletcher and Robinson, in a boy, aged 13 years, removed the semi-solid fæces by simple mechanical manipulation through a laparotomy wound with a successful result. Hawkins in (Case 6) describes the case of a woman, aged 39 years, in whom the colon was incised and washed out, but she died soon afterwards.

Colostomy.—To simply fix the most dilated coil to the parietes and open it seems the simplest treatment, but it seldom gives satisfactory results (Hawkins's 10 case, where the boy, aged 1 year, died; Harris (quoted in my paper 7),

when a further anastomosis was required). This is probably due to the fact that the most dilated coil is also the most inert, and has no power to empty itself. If an artificial anus is to be made it ought to be above the seat of dilatation, and as this will have to be, therefore, in the ileum or ascending colon, such an operation will be unsatisfactory, as it will give exit to a constant irritating stream of fluid fæces.

Colupexy. - When the dilatation affects the pelvic colon only, the chief element of obstruction may be due to the kinking of the bowel, either at the junction of the pelvic colon and rectum or by volvulus formation. In either case if the loop is anchored to the parietes this will be prevented, and in several instances this treatment has had good results (Woolmer, 3 Hawkins, 10 Roth, 23 Garré (quoted by Löwenstein ''), Kummel), and in one of Hawkins's cases it succeeded even when anastomosis and resection had failed. This remarkable fact was due to the persistent re-formation of a redundant loop of pelvic colon which occurred first after the anastomosis of the limbs of the loop, and again after the first loop had been resected. An exactly similar sequence of events occurred in Richardson's 27 case.

Colo-colostomy. - This operation has also been chiefly employed in cases of dilated pelvic colon, the two limbs of the loop being joined together at their base. But inasmuch as this procedure requires that the remainder of the colon above and below the anastomosis should be normal it often fails, either from the formation of another loop or by some further kinking or fæcal obstruction. Makins 19 in one of Hawkins's cases did a lateral anastomosis of the limbs of a pelvic loop with success in a boy aged 7 years. But, as mentioned in the last paragraph, in other cases this operation has had to be followed by subsequent resection or colopexy.

Colo-proctostomy. - In Treves's case, 34 where the descending colon was dilated and the pelvic colon contracted, he excised the gut from the splenic flexure to the rectum and anasto-mosed the transverse colon to the rectum with excellent results.

Ileo-colostomy. -This is the most direct method of treating all conditions of dilated colon. By it the fæcal stream is diverted from the small intestine directly into the pelvic colon or into the upper part of the rectum. It is, however, not enough to make an anastomosis; the ileum must be cut off from the cæcum, otherwise the fæces will continue to pass on by the old channel into the dilated colon. The simplest procedure is to make a lateral anastomosis between the ileum and the pelvic colon, choosing the part of the gut as low down as possible which will come together easily. The advantage of the side-to-side junction is that it can be made as large as is necessary (about 5 centimetres long), and will not have much tendency to contract. When the anastomosis is complete, if there is occasion for haste a simple ligature round the ileum below the stoma will be enough to occlude it, and actual division is unnecessary. But usually the bowel is divided between clamps, preferably by the thermo-cautery, and the two ends are sewn up by continuous sutures. When the ileum is thus anastomosed to the pelvic colon a mesenteric band is formed, stretching across the brim of the pelvis, and the space behind this should be obliterated by one or two stitches, attaching the mesentery to the parietal peritoneum, otherwise a loop of small intestine may easily become strangulated behind the band. I have never seen any reference to this point, but I noticed the formation of this clangerous band in one of my cases, and ever since I have employed the method of stitching it back against the parietes with very satisfactory results. In two of Lane's 11 cases, one a man aged 55 years and the other a woman aged 21 years, death from intestinal obstruction followed an anastomosis operation, occurring six months after, and immediately after, the operation in the respective cases. In neither case was a post-mortem examination performed, but it is possible that the mesenteric band was the cause in both these cases.

The treatment of the distal stump of ileum affords also a matter for discussion. Except in cases of resection of the colon it has always been dropped back into the abdomen after suturing. But if the colon proximal to the anastomosis is dilated either by gas or fæces it would seem desirable to provide some means of evacuating this. The readiest method of doing this is to tie up the distal piece of ileum with a purse-string suture and thrust the gut through a stab wound in the right iliac fossa. After the median incision through this the gas and the fæces in the large bowel are allowed to escape as much as they will, and then the whole colon is gently irrigated with hot water, some of which washes on into the rectum and some runs back through the tube. In this way the entire fæcal accumulation in the colon can be removed and the chief source of toxemia eliminated. If after this the colon remains empty the ileal fistula can be closed, but if frees continue to be passed by this route—as was the case so remarkably in Harris's casethe large colon will have to be removed down to the splenic flexure or to the anastomosis.

Ileo-colostomy is a much better method of treatment than any form of colo-colostomy for two reasons. In the first place, it excludes the greater part of the dilated colon, and, in the second place, it provides a fluid stream of fæces which will pass more readily on to the rectum and anus than the solid fæces which pass down the colon. remarks that in cases of chronic constipation which he has examined by the X rays the stasis occurs in the pelvic colon, and he deduces from this fact that it would be useless in such cases to exclude or excise the proximal parts of the colon. But this ignores the change in consistency which takes place in the fæces as they pass down the large intestine. A pelvic colon may be incapable of passing on solid fæcal masses into the rectum, but may be quite capable of dealing with the fluid contents of the ileum.

Examples of cases treated by ileo-colostomy are given by Lane, 51 who treated 10 cases by this method alone with 3 deaths; in 9 cases a subsequent colectomy had to be performed, 2 of whom died; in 20 cases the anastomosis was followed by a colectomy performed at the same time, and of these 4 died. In my case 75 ileo-colostomy gave a good result for a time, but a further colectomy was necessary later, and the same occurred in Harris's patient. further points have to be discussed in connexion with the subject of the exclusion of the greater part of the colon: these are the effects produced upon the nutrition of the patient, and the necessity of removing the colon as well as partially excluding it.

The first of these questions has been the special object of the research detailed in my former paper. 55 We have proved by the estimation of the quantity and composition of the fæces passed by these two patients that there is no metabolic loss involved by the operation. In both cases the amount of proteid, fat, carbohydrate, and water passed is not greater than falls within the normal average. A still more striking proof of the actual improvement in nutrition is afforded by the patients' weight. The boy increased three stones after the colon had been excluded, and the woman increased one stone after excision of the greater part of the colon.

Colectomy. - Excision of a part or the whole of the dilated colon remains to be considered. It is undoubtedly the most radical method of treatment and the only one which gives uniformly satisfactory results—that is, if the patient recovers Richardson, 27 Clutton 30) only a portion of the lower colon has been removed, but in more than one of these (Hawkins, Richardson) a further operation of resection or colopexy has been necessitated by the formation of a fresh volvulus. Removal of the whole colon down to or including the pelvic colon has been reported in 53 cases. Lane 31 gives 20 cases where primary colectomy was performed with 4 deaths, and 9 cases after a former ileo-colostomy with 2 deaths. Ito and Goyesima 32 relate 21 cases with 6 deaths, Bossowski 1 successful case, Harris's case died, and my own case recovered. In all, there have been 13 deaths, making an operative mortality of 24.5 per cent. In all the cases that survived the patients were cured of their symptoms except in the following: Ito and Goyesima had one case which remained unchanged; Lane had one which only showed "moderate improvement," one which gave only a "fair result," and two which required further operation for gastric complications.

The fact that so many cases have required colectomy after a successful ileo-colostomy proves that the colon, although cut out partially from the intestinal circuit, still causes severe symptoms. In my own case these were pain and the occurrence of a tumour due to the distended part of the proximal colon. Harris's case 75 is particularly instructive in this respect. He first performed a right-sided colostomy in a woman who had life-long constipation. Subsequently has been closed, a Paul's tube is tied into the ileum, and the ileum was divided and anastomosed to the pelvic colon,

but after a temporary relief with natural motions the fæces again came out from the opening in the ascending colon and none passed by the rectum. This induced him to do a resection of the colon which, however, proved fatal. Now in this case there must have been an anti-peristaltic movement in the colon, which is an exaggeration of the normal anti-peristalsis; and it is probable that this occurs in the other cases in which the colon has been partially excluded. In these cases the proximal part of the colon forms a blind pouch, and the anti-peristalsis will serve to drive feecal material, mucus, and gas into this, causing painful distension and decomposition. In my case the woman had diarrhea, with the passage of blood and mucus, In my case the after the ileo colostomy, but this ceased after the colon had been removed

The age and general condition of the patient when operation is undertaken will, of course, greatly affect the prognosis. The youngest recorded successful result is that of Bossowski, whose patient was only 2 years old. In clear cases of idiopathic dilatation all successful cases of operation have been younger than 30 years (Löwenstein); and although Lane has had 19 cases over 30 years on whom he has operated, these include no less than six of his fatal cases. (Two of his remaining fatalities were, in my opinion, due to primary gastric disease, and thus all except one of the fatal operations for colic stasis were in patients over 30.)

In the lesser grades of disease, where obstinate constipation without marked distension exists, it seems unreasonable to submit patients to so severe an ordeal as that of excision of the colon. One of two other measures ought to be tried first, and probably in the majority of cases will serve for a cure, and in the remainder excision can be reserved as a last resort. The first of these is a lateral anastomosis between the ileum and pelvic colon without division of the former. Mansell Moullin 76 has related several cases where this succeeded and he has had no fatalities. The second is a still simpler operation—viz., appendicostomy-which, as far as I know, has had no mortality, although it has now been often performed for various reasons. Keetley 77 has reported several cases, and the following instance in my own practice will serve as an example.

The patient, an unmarried woman, aged 27 years, was admitted to the Cossham Hospital on Jan. 21st, 1909, sufferirg from sickness and abdominal pain. She had a longstanding history of dyspepsia and constipation, the bowels never acting without the use of aperients. She frequently vomited, but with no special relation to food. The pain was diffused all over the abdomen, and for the past six months had been so severe as to prevent her from working. Her physical condition showed little abnormal. She was rather thin; the abdomen was not distended, and she had a tender retroverted uterus. On Feb. 15th I fixed the latter by an Alexander-Adams operation, but this had but little effect on her pain. The constipation and sickness continued. was very difficult to decide whether these symptoms were due to an atonic colon or to a gastric ulcer; the want of relation between the vomiting and the taking of food made me decide against the latter diagnosis. On March 19th I performed an appendicostomy, and whilst she remained in the hospital for three weeks the colon was washed out daily and she gradually improved. return home she quickly relapsed when the lavage had been stopped. She came into the hospital again and was taught to wash out the bowel herself. She has continued to do this regularly since and is now at work. I saw her in September, and her general condition was excellent. The pain and sickness have quite ceased and she has gained weight considerably. She is anxious to dispense with the appendicostomy, but I have advised against this.

Of course, this subject of the surgical treatment of chronic constipation is one which will always evoke a great difference of opinion from both surgeons and physicians, but it may reasonably be urged that, when medical means, and especially enemata, have failed to give relief, then some surgical means ought to be employed. In the cases with no marked or progressive distension appendicostomy or a simple lateral anastomosis between the ileum and pelvic colon will probably serve as a cure. Primary colectomy or colectomy following ileo-sigmoidostomy ought to be reserved for the more typical cases of idiopathic dilatation of the colon, and then only employed after the simpler surgical means have failed to effect a cure.

employed after the simpler surgical means have failed to effect a cure.

Bibliography.—1. Baron: Jahrbuch für Kinderheilkunde, 1907, p. 741
2. Billiard: Krankheiten der Neugebernen, Weimar, 1823. 3. Ammon 1822. 4. Ouiment: Dingfehren Krankheiten des Menschen, Berlin, 1842. 4. Ouiment: Dingfehren Krankheiten, 1845. 7. Gay: Transactions of the Pathological Society of London, 1854, vol. v., p. 174. 8. Henoch: Beitrage zur Kinderheilkunde. Berlin, 1895. 9. Jacobi: American Journal of Obstetries, 1869; Archives of Prediatries, 1885. 10. Barth: Wagner's Archiv der Heislunde, 1870, p. 132. 11. Pescock: Transactions of the Pathological Heislunde, 1870, p. 132. 11. Pescock: Transactions of the Pathological Heislunde, 1870, p. 132. 11. Pescock: Transactions of the Pathological Heislunde, 1870, p. 132. 11. Britatical Gest. Rarchological vol. i., p. 1085. 14. Morris: Ibid., 1886, vol. ii., p. 1211. 15. Fütterer and Middledorpf: Virthow's Archivel 1886, p. 555. 16. Gaum Revue Mensuelle des Maladies de l'Enfance, 1888, p. 18. Lowenstein: Centralbatt für die Aligemeine Pathologie, December, 1997, 1932. 19. Hawkims: Brit. Med. Jour., 1907, vol. 1., p. 477. 20. Tittel: Mensuelle des Maladies de l'Enfance, 1899, p. 632. 22. Hobbs and de Richmond: La Médveine Moderne, 1898, p. 632. 23. Robbs, rechiv für Kilnische Chirurgie, 1906, ii., l. 24. Rolleston and Haward: Transactions of the Clinical Society of London, 1858, vol. xxix., p. 201. 25. Langmend: Ibid., 1906. 26. Fitz: American Journal of the Medical and Sirgical Journal, 1901, vol. exilv., p. 155. 23. Dodd: Titter, Langmend: Ibid., 1906. 26. Fitz: American Journal of the Medical Sciences, 1899, vol. xxivil, p. 125. 27. Richardson: Beston Medical and Sirgical Journal, 1901, vol. exilv., p. 155. 23. Dodd: Titter, 1907, vol. 1907, vol. 1907, vol. 1907, vol. 1907, vol. 1907, vol. 1907, vol. 190 Clifton, Bristol.

ROYAL Institution. — The following amongst the lecture arrangements at the Royal Institution before Easter: Mr. W. Duddell, a Christmas course of six illustrated lectures on Modern Electricity, adapted to a juvenile auditory, to be given on the Tuesdays, Thursdays, and Saturdays in the fortnight after Christmas Day; Professor W. A. Herdman, three lectures on the Cultivation of the Sea; Professor F. W. Mott, Fullerian professor of physiology, R.I., six lectures on the Emotions and their Expression; Professor Silvanus P. Thompson, three lectures on Illumination, Natural and Artificial; Professor Sir J. J. Thomson, six lectures on Electric Waves and the Electromagnetic Theory of Light. The Friday evening meetings will commence on Jan. 21st, when Professor Sir James Dewar will deliver a discourse on Light Reactions at Low Temperatures.

THE RÔLE OF FATS IN THE TREATMENT OF DISORDERS OF THE STOMACH.¹

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THE use of fat in the treatment of gastric disorders, not merely as a foodstuff, but with the idea of producing a definite therapeutic effect on the disordered secretory activity of the stomach, is of comparatively recent development, and is based on the recognition of the frequency with which excessive secretory activity of the gastric glands obtains as a pathological condition, and on the demonstration of the depressant action of fats on the activity of

normal gastric secretion.

It had long been suspected that the presence of fats in the stomach interfered, in some way or other, with gastric digestion, a belief which was in some measure confirmed by the observation of Penzoldt, who found that a mixture of coffee and cream yielded a lower acidity of the stomach contents than coffee alone, and more conclusively by the later exact observations of Ewald and Boas who showed that the addition of bacon fat to the test breakfast associated with their names resulted in a prolongation of the period of gastric digestion and a marked diminution in the amount of free hydrochloric acid in the stomach contents. As at that period it was the prevalent belief that any deviation from the normal in the functional activity of the stomach must be in the direction of deficiency, and that the subjective manifestations of such deviation depended upon organic acid and gaseous fermentations initiated as the immediate consequence of deficiency in the antiseptic hydrochloric acid and stagnation of the contents from deficient motor power, the results of Ewald and Boas served but to emphasise the belief that the administration of fats in gastric disorders, and particularly in such as accorded with the type of acid dyspepsia, was contra-indicated in that they would induce further depression of functional activity and provide a possible source for the noxious acids themselves.

The investigations of the German school, and particularly those of Riegel and his followers, into the secretory activity of the stomach in gastric disorders demonstrated not only that excessive secretory activity of the gastric glands could obtain as a pathological condition, but that such was even more frequent than defective activity, and that in the so-called acid dyspepsia the frequently excessive acidity of the stomach contents was due not to organic acids but to an abnormally high content in hydrochloric acid itself. This conception of the disorders of secretory activity has been generally confirmed in its main theses, and in this country, although belief in the acid dyspepsia of organic acid fermentation still lingers, the frequency of pathological hypersecretion is now well recognised. To the brilliant investigations of Pawlow and his co-workers we are indebted for the basis of a more accurate appreciation of the nature and origin of these disorders of functional activity and also for suggestions as to their rational treatment. The observations of Chigin, Lobasoff, Wirschubsky, Lintwareff, and Sokoloff in the laboratories of Pawlow established that the liquid fats, olive oil and cream, were devoid of any excitative influence on gastric secretion when introduced directly into the stomach of the dog, and that their presence exerted an inhibitory influence on the normal energy of the secretory process excited by other foodstuffs.

Following on this demonstration of the depressant action of fats on the secretory activity of the stomach in the dog. certain continental observers, notably Strauss, von Aldor, Backmann, Akimow-Peretz, Piontkowski, Cohnheim, Walko, and others, began the administration of liquid fats in such morbid conditions of the human stomach as were associated with hyperacidity of the stomach contents. At first cream and butter were employed by Backmann, then emulsions of

almond oil by Akimow-Peretz and Strauss and von Aldor, and, lastly, pure olive oil by Cohnheim. Walke, and others. The results recorded were, with but few exceptions (Ewald, Fischl, Blum), so beneficial in alleviating the subjective discomfort and in improving the nutrition of the patient that the method well-nigh attained the dignity of an "oil-cure." Our own observations have confirmed in great measure the beneficial results of the administration of liquid fats in conditions of hyperacidity claimed by these previous investigators. They have demonstrated perhaps more completely than had been previously done the marked effect of such fats in diminishing the acidity of the stomach contents, and they have opened up some problems for further investigations.

It has been my (F. C. M.) practice at the Ancoats Hospital to include in the routine examination of such cases as manifested symptoms of gastric disorder (unless contra-indicated) a simple estimation of the secretory activity of the stomach. The method employed consists in the administration first thing in the morning on the empty fasting stomach of a modified Ewald-Boas test breakfast, modified to obtain what I regard as being of prime importance for comparative results, constancy of physical character and composition, consisting of 10 ounces of weak tea without milk or sugar, and four breakfast biscuits (Huntley and Palmer), which average about 30 grammes. The stomach contents are removed after an interval of one hour, the volume and appearance noted, and in the filtrate the amount of free hydrochloric acid and the total acidity are estimated approximately by titration with decinormal sodium hydrate—solutions of dimethylamidoazobenzol and phenol-phthalein respectively being employed as indicators. The results are stated in terms of the number of cubic centimetres of decinormal soda solution required to neutralise the respective acidities in 100 cubic centimetres of the filtrate. The peptic power of the filtrate is estimated by the length of a column of coagulated eggalbumin digested in 24 hours at 37 5°C. according to the method of Mett. and in some cases an approximation to the relative content in pepsin itself is made by the dilution method of Schiff and Nierstein.

This systematic investigation of the secretory activity of the stomach in all cases with manifestations of gastric disorder has demonstrated the frequency with which excessive secretion obtains, a feature which becomes obvious in the series of control analyses in the accompanying tables on comparing the values for free HCl and total acidity with the normal values, 20-40 and 40-60 respectively, for such a meal

With the appearance of Cohnheim's paper on the employment of large doses of olive oil this method of treatment was tried in a few cases, and with such obviously beneficial results, not only in diminishing the acidity of the stomach contents, but also on the subjective discomfort and on the general nutrition of the patient, that further investigation of the influence of fats appeared desirable. In some 62 cases in which there were subjective manifestations of gastric disorder, either with or without indications of organic disease of the stomach, the effect of the administration of oil of sweet almonds on the secretory activity of the stomach was determined. On consecutive days a plain test breakfast and a test breakfast preceded 30 minutes by one ounce of almond oil was given, and in the stomach contents the free HCl and the total acidity were estimated; in certain of the cases the digestive power of the stomach contents (peptic and tryptic) was also determined by the method of Mett. The stomach contents after the oil breakfast separated on standing into three layers—oil on the surface, the fluid contents with its granular sediment below, and between the two a narrow layer of emulsified oil, and but for the presence of the oil the contents were similar in appearance to those after the control meal; in no instance was there any evidence of the presence of bile pigments or of variations in the mucous content, and the quantity varied quite irregularly, being in some greater in others less than in the control.

The results of the analyses (see table) expressed in averages where a series of observations were made on any one case, show without exception that the administration of oil is associated with a marked reduction in the acid values, free HCl and total acidity, of the stomach contents. Although it is well recognised that in any individual, normal or otherwise, the acid values of the stomach contents, removed at a

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		6	Fast ri o	Ulcer.			
No.	Sex and	Plair	n T.B.	Oil	т.в.	Diffe	rence.
	age.	HCl.	T.A.	HCl.	T.A.	HCl.	T.A.
. 1	M., 48	46	82	37	73	9	9
2	M., 33	40	80	37	60	3	20
3	M., 32	40	65	31	52	9	13
. 4 . 5	F., 37 F., 28	13 71	34 95	Trace.	18	13	16
6	F., 38	60	90	48	74 82	19 12	21 8
7	F., 26	70	100	45	64	25	36
8	F., 40	35	51	30	42	5	9
9	F., 27	65	90	41	62	24	28
10	M., 25	49	70	42	50	7	20
11 12	F., 24 F., 30	70 65	89	35	53	35	36
13	F., 22	65 42	90 60	39	58 30	26 26	32 30
14	F., 28	46	65	32	44	14	21
15	M., 60	40	71	25	56	15	15
16	M., 64	37	86	28	52	9	34
17	M., 46	40	58	36	49	4	9
18	F., 24	30	56	12	32	18	24
19 20	F., 47	56	78	32	58	24	20
21	F., 42 M., 28	47 48	64 66	10 44	22 62	37 4	42 4
22	M., 18	48	74	3	20	45	54
23	M., 40	50	74	45	72	5	2
24	M., 40	34	60	28	53	6	7
25	F., 24	45	62	15	22	30	40
26	M., 28	60 1	78	32	42	28	36
27	M ., 54	Du 42	odenal 65	Ulcer.	50 1	10	0
28	M., 30	48	64	24	56 33	12 24	9 31
29	М., 50	34	54	14	30	20	24
	•	Caroir	uma oj	Stomac	h.		
30	M., 67	18	34	10	20	8 !	14
31	M., 48	0	14	0	12	-	2
32	М., 67	12	18	0	8	12	10
77	77 00		-	spepsia.	••		
33 34	F., 28 F., 22	28 39	49 55	8	18	20	31
35	F., 32	60	78	17 34	38 50	22 26	17 28
36	M., 30	32	52	20	40	12	12
	Dil	atation	of Sto	maoh (A	tonic).		
37 [M., 58	34	70	1 10	35 ₁	24	35
38	F., 19	22	45	18	34	4	11
39	F., 57	20	42	15	40	5	2
40	M., 38	43	69	30	63	13	6
41	F., 59	.30	54 70	10	26	20	28
42 43	M., 42 M., 35	12 28	32 46	Trace.	14 25	12 18	18 21
			Alcohol		_	10 ,	21
44 1	M., 38	27	50	15	32	12	18
4 5	M., 37	58	98	52	85	6	13
46	M., 45	16	41	10	34	6	7
47	M., 24	28	54	Trace.	18	28	3 6
48	M., 39	22	39	10	24	12	12
49 <u>!</u>	M., 40 F.,	43	68 50	32	60	11	8
50 51	M., 54	30 20	56 32	Trace.	37 12	17	19
52	M., 60	45	67	39	62	20 6	20 5
		C	o nstipa	tion.		,	
53	F., 67	20	40	16	32 ,	4	8
54	M., 36	14	48	10	40	. 1	_

T.B. = test breakfast. T.A. = total acidity.

No.	Sex and	Diamanta	Plain T.B.		Oil	T.B.	Difference.		
No.	age.	Diagnosis.	IICI.	T.A.	HCI.	T.A.	HC1.	T.A.	
55	M., 35	Gastritis.	28	46	10	25	18	21	
56	M., 27	Influenza.	35	59	29	50	6	9	
57	M., 55	Aortic disease.	35	52	26	46	9	6	
58	M., 26	Mitral disease.	35	68	10	43	25	25	
59	M., 64	Mitral disease.	50	65	18	35	32	30	
60	F., 37	Severe anæmia.	17	42	11	36	6	6	
61	M., 67	Phthisis.	40	57	17	44	23	13	
62	M., 49	Phthisis.	42	62	24	45	. 18	17	

T.B. = test breakfast. T.A. = total acidity.

Table of Averages.

Diagnosis.	No.	Plain	Т.В.	Oil	Г.В.
Diagnosis.	10.	HCI.	T.A.	HCl.	T.A
Total cases	62	38·1	60.7	23·3	42
Gastric ulcer	26	48.7	72·5	30.5	50
Duodenal ulcer	3	41	61	23	40
Carcinoma	3	10	2 2	3.3	13.3
Nervous dyspepsia	4	40	58· 5	20	36.5
Dilatation of stomach	7	26	51	13 2	34
Alcoholism	9	32	55·8	19	40-4
Constipation	2	17	44	13	3 6
Miscellaneous	8	35.2	56	18	40.5

definite time after a meal of constant composition, vary within somewhat wide limits, yet the constancy with which they are diminished after the exhibition of oil in so large a number of cases precludes the possibility of coincidence.

The effect, though constant, presents some interesting variations in degree not only in the several types of gastric disorder but also in the same type and the same individual on different occasions. On averaging the results in each of the several series it appears that the greatest absolute diminution in the acid values after the administration of oil obtains in those which present the highest average acidities with the plain test breakfast, and, as appears from a comparison of the average results, in the cases of gastric ulcer, duodenal ulcer, and nervous dyspepsia, irrespective of the presence or absence of any lesion of the stomach. In the individual cases also this is true of the majority; thus in 12 cases with a free HCl value of 50 or more the average absolute diminution of this value is 20, and in all but 4 the individual diminution ranges from 24 to 35.

In the cases on which a series of observations were made it was noted that whilst the diminution in the acidity was invariable it differed in degree on different occasions, and further, what is of particular interest, the effect of the oil was apparently limited to the period immediately following its administration; in no instance was there any evidence of its having a more enduring effect on the acid values of the stomach contents. The averages, and also the majority of the individual observations, further show that the absolute diminution of the total acidity exceeds that of the free HCl. This result is difficult of interpretation, since it apparently depends on a diminution of other factors than the HCl, free or combined (assuming the latter to remain approximately constant with the constant proteid content of the test meal), which contribute to the total acidity of the stomach contents, and which it might be anticipated would be increased by the liberation of fatty acids in the splitting of the neutral fat by the hydrochloric acid and the possible gastric lipase.

Turning to the peptic activity of the stomach contents it was found in 12 cases in which observations were made that the digestive power was diminished with the acid values, a result in part, no doubt, of the deficiency in HCl, but also, as shown by the dilution method, of an absolute diminution

in the peptic content of the filtrate, and which is obvious in all but No. 25 of the following six observations.

No.	Test-meal.	HCI.	Total acidity.	1	Pepsin	Trypsin.	
25	Plain.	45	62	a 42	ь 27	· · · · · · · · · · · · · · · · · · ·	0
1	Oil.	15	22	2.25	64	12	0
26	Plain.	60	78	182	144	42	0
	oil.	32	42	81	41	12	0
28	Plain.	48	64	182	144	30	0
i	OII.	24	33	41	38	. 6	0
33	Plain.	28	49	72	67	27	0
	Oil.	8	18	_	13	1	0
34	Plain.	39	55	60	81	22	0
1	Oil.	17	38	25	36	. 17	0
35	Plain.	60	78	225	132	36	0
	Oil.	34	50	41	84	30	0

* a, Filtrate alone. b, Fourfold dilution with $\frac{N}{10}$ HCl. c, Sixteenfold dilution with $\frac{N}{10}$ HCl.

In three cases the oil was given simultaneously with the testmeal and resulted in a similar diminution of the acid values of the stomach contents.

The explanation of the phenomena following the administration of fats on a subsequent meal is a problem for the exact methods of experimental physiology rather than for the methods of clinical research. The investigations which have dealt with the matter by the exact methods of Pawlow leave it still in doubt whether the observed phenomena are due to a true depression of gastric secretion or to dilution and neutralisation by regurgitant alkaline duodenal contents.

Pawlow from his earlier experiments, in which the introduction of clive oil directly into the stomach of the dog by means of a sound resulted in a marked depression of secretory activity as tested by a subsequent meal of flesh, concluded that fat inhibits the normal energy of the secretory process, that the inhibition is central by reflex stimulation of the inhibitory nerves of the glands or the inhibitory centres of these nerves, and is not a mere mechanical effect of the covering over the mucous membrane and preventing excitation of the nerve endings. With the object of testing whether oil might act in some such mechanical way we made a number of observations in which oil was replaced by petroleum, but in no instance was there any diminution of the acid values of the stomach contents.

The later experiments of Sokoloff on animals with gastric and duodenal fistulæ showed that the presence of undigested fat in the duodenum suffices to inhibit the secretion of gastric juice and he concluded that the inhibitory effect of fat originates chiefly from the surface of the duodenal mucous membrane and not from the stomach. Boldyreff, on the other hand, following up some observations of Damaskin, found that the introduction of oil into the stomach of the dog led to an undoubted flow of bile, pancreatic juice, and intestinal juice into the stomach. Experimenting on himself and one of his associates, he found that the stomach contents removed one or one and a half hours after the ingestion of 80 cubic centimetres of a 2 per cent. solution of oleic acid in olive oil contained trypsin and a lipase of pancreatic origin. These investigations have been repeated on the human subject by already a considerable number of observers, Volhard, Faubel, Mohr, Schittenhelm, Levinsky, Molnar, Mahlenbrey, and others, but with another object-namely, of obtaining via the stomach a sample of the duodenal contents in order to estimate the functional capacity of the pancreas, and in the majority of instances it has been found that the administration of oil on the empty stomach sufficed to cause a regurgitation of the duodenal contents into the stomach.

In nine observations in which we administered 100 cubic centimetres of oil on the empty stomach, in four only where the oil was withdrawn after the lapse of half an hour was bile pigment present in the mixture, which was acid in reaction, devoid of HCl in a free state, contained pepsin, and in one case gave a very slight tryptic digestion. In the contained personach identical.

for an hour, and in four of these neither bile pigment nor trypsin was present in the mixture, which contained a small amount of free HCl and pepsin, and in one there was a faint greenish tinge of bile pigment. But, as already mentioned, in no instance was the presence of bile pigments or trypsin noted in the stomach contents after an oil breakfast.

Whatever the explanation may be, it remains that the neutral liquid fats administered before food lead to a diminution of the subsequent acidity of the stomach contents, the more so the greater the tendency of the secretory activity of the stomach to exceed the normal. Clinically, our experience of the administration of fats, such as cream, butter, almond oil, in conditions in which hyperacidity of the stomach contents has been found to exist, has shown this action of fats to be associated with a very definite amelioration of the subjective manifestations of the condition. In simple forms of hyperacidity depending on slight degrees of digestive hypersecretion (the so-called hyperchlorhydria of Riegel) the addition of cream and butter in abundance to the diet, with a diminution of the starches, will often suffice to remove the subjective manifestations. It is only in the more severe types, and particularly the severe degrees of digestive or continuous hypersecretion so commonly associated with chronic ulcer about the pylorus or duodenum, in which heartburn, acid pyrosis, the sudden gnawing pain in the epigastrium ascribed to pyloric spasm, and the vomiting of acid fluid, that the administration of almond oil is undertaken, and then in doses of 1 ounce first thing in the morning and repeated before subsequent meals if necessary. This method has proved of value in not only alleviating the symptoms which follow the digestion of food in the stomach, but also in contributing very considerably to the nutrition of the patient, and is certainly preferable to the sole use of alkalies for the purpose of neutralising the hyperacid stomach contents and so obtaining relief from the symptoms. In no case have we found that oil so administered has been badly tolerated or in any way proved objectionable.

Bibliography.—Ageron: Münchener Medicinische Wochenschrift, 1902, No. 30. Akimow-Peretz: Wratsch, 1898, No. 4. Backmann: Zeitschrift für Klinische Medicin, 1900, vol. xl., p. 224. Boldyreff: Archiv für die gesammte Physiologie, 1908, vol. exxi., p. 13. Bloch: Archiv für die Verdauungskrankheiten, 1907, vol. xiil., p. 606. Blum: Berliner Klinische Wochenschrift, 1905, Nos. 20 and 21. Cohnheim: Zeitschrift für Klinische Medicin, 1904, vol. lil., p. 110. Ewald and Boas: Virchow's Archiv, 1826, vol. civ., p. 271. Faubel and Volhard: Münchener Medicinische Wochenschrift, 1907, p. 403. Fischl: Prager Medicinische Wochenschrift, 1903, Nos. 10 and 12. Strauss and Aldor: Zeitschrift für Diätetische und Physische Therapie, 1898, vol. 1., p. 117. Walko: Zentralblatt für die innere Medicin, 1902, No. 45.

A FURTHER NOTE UPON THE RELATION-SHIP BETWEEN AVIAN AND HUMAN TUBERCULOSIS.

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In the Proceedings of the Royal Society of Medicine, Pathological Section, December, 1907, we published, in conjunction with Dr. C. G. Seligmann and Dr. P. N. Panton, the results of an investigation upon the above subject. Our conclusions as therein stated were as follows.

The human tubercle bacillus is pathogenic to the pigeon in a very limited degree only. It sets up no disease of the intestine or of the abdominal viscera when introduced (in sputum) with food into the alimentary tract, even for prolonged periods (six months) and in excessive quantities. It sets up a local or a local and glandular disease only, in the pigeon, when injected (in sputum) into the muscles or subcutaneous tissues. It sets up a local or a local and glandular disease only in the pigeon when injected into the muscles or subcutaneous tissues from the organs of guinea-pigs which have been infected by incculation with human sputum. The avian tubercle bacillus as tested from various kinds of birds is pathogenic to the guinea-pig in a very limited degree. The human bacillus has not, so far, in our hands, proved convertible into the avian by identical

In the present note we append the results of a series of passage experiments carried out with the object of ascertaining whether a repeated transmission of the avian bacillus through the guinea-pig would bring about any exaltation of its virulence, or whether a repeated transmission of the human bacillus through the pigeon would produce a similar pathogenic change.

In neither set of experiments has any increase whatever of virulence been induced. The avian bacillus when passed through a series of guinea-pigs produces only a local lesion and does not acquire any of the more virulent qualities which distinguish the human bacillus when injected into this animal. The human bacillus when passed through a series of pigeons continues to set up no more than a purely local lesion.

At the Ninth International Veterinary Congress held at The Hague (Sept. 14th-19th, 1909) one of the subjects diswas the transmission of avian tuberculosis to mammals. Dr. Mohler 1 insists, as we have already done,2 upon the urgency of studying the relationship between the avian and other varieties of tuberculosis, by reason of the prevalence of the avian disease and the general consumption of birds as articles of food. It is to fowl tuberculosis that Dr. Mohler has especially directed his attention. positive results arrived at by the feeding of fowls with the tuberculous organs of fowls are given, and the discovery of large numbers of tubercle bacilli in the faces suggests, it is pointed out, the ease with which the disease may be spread through the flock. In our paper we recorded both the impossibility of inducing visceral tuberculosis in pigeons by means of injections of the human tubercle bacillus in sputum and the impossibility of setting up any intestinal or other disease by prolonged feeding with tuberculous sputum; we recorded, however, the converse results of feeding pigeons with the tuberculous viscera of other birds (pheasants, &c.) dying from tuberculosis.

The fundamental question as to the relationship between human and avian tuberculosis is not touched by Dr. Mohler's observations. We cannot regard all the forms of mammalian tuberculosis (including, i.e., the human) as being identical, without proof. Dr. Mohler was able to infect the pig with tuberculosis from the carcasses of tuberculous chickens. But what disease the tuperculosis so induced in the pig would set up in man is not determinable by such an experiment.

That the avian bacillus is not physiologically identical with the human Dr. Mohler's observations prove, and so confirm those recorded by other observers, including ourselves. With the eggs laid by tuberculous fowls he inoculated guinea-pigs, using the white upon some and the yelk upon others. In none of the animals did more than a local lesion result. The spleen in one was enlarged, but though bacilli were demonstrated by smears, no lesions were visible. Neither in a second guinea-pig were tuberculous foci found, but the spleen and mesenteric glands were proved to contain bacilli by sub-inoculations of other guinea-pigs, which presented well-marked lesions (not stated to be visceral). From these, typical avian cultures were raised upon egg media. The guinea-pigs inoculated from the yelk developed no disease whatever.

These observations confirm those already made by ourselves upon guinea-pigs, using the viscera of tuberculous birds. What Dr. Mohler has failed to show is that the avian tubercle bacillus sets up in the guinea-pig the lesions that are produced by the human organism, and, this being so, the onus of proving the identity of the two rests upon those who

The Passage of the Avian Tubercle Bacillus from Guinea-pig to Guinea-pig in order to Ascertain whether it will Acquire a Higher Virulence towards the Guinea-pig.

Summary. - This series of passage experiments of the avian bacillus (derived from the pheasant) to the guinea-pig was commenced on Nov. 25th, 1907, and terminated on July 24th, 1908 The avian bacillus (in a salt suspension from the tuberculous spleen and liver of a pheasant dying from the disease) was injected into a guinea-pig on Nov. 25th. From this guinea-pig the bacillus was carried (by making a

suspension of the resulting local lesion in sterilised salt solution) into a succession of others, the transferences being made on Dec. 14th, 1907, and Jan. 13th, Feb. 18th, April 15th, May 15th, June 26th, and July 24th, 1908. In no animal did any more than a local lesion arise, accompanied in some cases with an insignificant involvement of the adjacent lymphatic glands. In the two guinea-pigs last inoculated no disease whatever ensued. As tubercle bacilli were present in the pus used for this concluding inoculation the numbers introduced must have been too few to set up even a local lesion. It will be seen, therefore, that no increase of virulence was brought about in the avian tubercle bacillus (derived directly from the diseased organs from a fatal case of avian tuberculosis) as tested by repeated passage through the guinea pig. The bacillus continued to produce only a local lesion, and acquired none of the pathogenic characters of the human bacillus from its prolonged growth in the mammalian tissues and fluids of the guineapig. It did not in the least degree acquire any virulence indicative of a transformation into the human microorganism.

The Passage of the Human Tuberole Bacillus from Pigeon to Prgeon in order to Ascertain whether it will Acquire a Higher Virulence towards the Bird.

In order to free the sputum of other micro-organisms a guinea-pig was inoculated with human sputum (which was full of bacilli) on Nov. 27th, 1907. The animal was killed on Dec. 14th, 1907, and presented the typical lesions of tuberculosis at the site of inoculation, in the inguinal and lumbar lymphatic glands, and the spleen. Two pigeons were inoculated on Dec. 14th, 1907, with a salt suspension of the inguinal and lumbar glands and the spleen, rubbed in a sterilised mortar, the injections being made into the pectoral muscle at the base of the wing. The birds were killed (35 days after inoculation). The first showed no local lesion; the spleen was normal on the surface and in section. In the case of the second bird there was a minute vellow focus at the surface of the pectoral muscle, too small to make further use of. The spleen was normal. On Sept. 23rd, 1907, two pigeons were injected with 2 cubic centimetres of a salt emulsion of human tuberculous sputum which contained large numbers of bacilli into the pectoral muscle at the base of the wing of each bird. On Oct. 10th the birds were killed. In each there was a firm, dry, brownish encapsulated focus of necrotic muscular substance. The lesions, which were of elongated form, were cut out, minced in a sterilised mortar, and rubbed up in sterilised salt solution. This was injected into two birds. On Oct. 24th these birds were killed and in each there was a narrow insignificant brownish necrotic focus in the pectoral muscle less than 1 centimetre in length. A portion of one was used to smear two slides; these showed the presence of tubercle bacilli, necrotic muscle fibre, and a notable number of cells. The rest of the lesions were made into a suspension as before and the whole injected into the base of the wing of another pigeon. On Nov. 7th this bird was killed, and at the site of the injection a necrotic lesion was found too insignificant for further use.

It was clear that the human tubercle bacillus produces in the pigeon only a local lesion and evinces no tendency to increase in virulence on four successive passages through the

The Inoculation of Fowls with Human Inberculous Sputum.

In the pigeon the intramuscular injection of human tuberculous sputum is followed only by a local lesion which eventually becomes obsolete, and never by visceral disease; nor can the pigeon be infected by means of human sputum administered by the mouth for long intervals. That what is true for the pigeon might not be true for the fowl is an obvious criticism that can only be met by experimenting with the latter bird. Yet even Nocard, who was an advocate for the identity of human and avian tuberculosis, confesses that he was unable to infect fowls by the administration of human sputum.

In the following experiments sputum was injected intramuscularly into two fowls, as it was in the case of the pigeons. The sputum used was in all cases found to contain large numbers of tubercle bacilli. An emulsion of human tuberculous sputum was made in sterilised salt solution, and with this two Buff Orpingtons were injected on Nov. 25th, 1908, into the pectoral muscle. On Dec. 18th, 1908, neither

¹ Report in The Lancer, Oct. 2nd, 1909, p. 1031.
2 Loc. cit.
3 Proceedings of the Royal Seciety of Medicine, Pathological Section, December, 1907.

bird presented any local lesion, and into one 6 cubic centimetres of sputum emulsion were injected into the pectoral muscle as before, and on March 24th, 1909, a third injection was made into the same bird, 6 cubic centimetres being injected into the opposite pectoral muscle. On April 26th, 1909, the bird which had received three injections was killed. The abdomen was opened and the spleen removed with complete aseptic precautions. It was found to be free from disease on naked-eye examination. It was rubbed in a mortar with a small amount of boiled sait solution and injected into the subcutaneous tissue of a guinea-pig's leg. The examination of the body of the fowl was then completed. None of the viscera, abdominal or thoracic, presented any trace of disease. In each pectoral muscle at the site of injection there was an extensive area in which the muscular substance was pale and indurated. The altered tissue was recognisable, on reflecting the skin, by its different colour. There was no swelling or unnatural vascularity about it, and the tissue was so firm and solid that it could hardly be parted into bundles by teasing. The change did not extend to the deepest side of the muscle. In the midst of this firm tissue were scattered a few lines of soft yellowish material, smears made from which (in both muscles) showed large numbers of tubercle bacilli and giant cells.

The microscopic sections, made so as to include the periphery of the condensed tissue and the normal muscle beyond, show that the pale indurated tissue is not necrotic, but the seat of a diffuse interstitial inflammation. The muscle fibres, which have not lost their striation, are separated by extensive groups of endothelial cells and lymphocytes. The cells have almost everywhere a definite arrangement in circular or oval groups, and many of the groups contain one or many giant cells. The nuclei of the latter are devoid of a peripheral disposition. The whole picture reproduces that met with in the case of the pigeon when experimentally injected with avian tuberculosis, but with the marked difference that whilst the avian bacilli were demonstrable with the greatest ease in the second case none of the human could be shown in the first.

There is no necrosis of the new formation. The lesion ends somewhat abruptly, and is succeeded by normal muscle, but there is no limiting zone of intervening fibrous tissue. A certain amount of fibrosis accompanies the tuberculous lesion, the tubercles or giant-celled systems in places lying in the midst of fibrous tissue.

The subsequent history of the guinea-pig inoculated from the apparently normal spleen of this bird was as follows. It was killed about eight weeks after inoculation and was found to be free from tuberculous disease. The second fowl, which had received only one injection of human tuberculous sputum (viz., on Nov. 25th, 1908), was killed June 25th, 1909. It was in perfect general condition. In the substance of the right pectoral muscle there was a narrow elongated focus of fibrous tissue, in the centre of which, at one spot, there was a softer, whitish material. The lesion was rubbed up with sterilised salt solution and injected into a guinea-pig. The spleen of the fowl (which to the naked eye, like all the other viscera, was normal) was rubbed up in salt solution, and the whole injected into the thigh of a guinea-pig. The first guinea-pig died July 13th; the necropsy showed no trace of disease at the site of the injection or elsewhere. The second animal was killed August 4th. The necropsy was absolutely negative.

The Inoculation and Feeding of White Rats with the Avian Tuberole Bacillus.

The wild rat occasionally suffers from a disease characterised by the formation of multiple granulomata of the skin and viscera, in which dense clusters of acid-fast bacilli are present. In this country the disease has been fully investigated by Dr. George Dean, although observations upon it had been previously published by Stepansky (1903) while working at plague in Odessa, and whose results were confirmed by Rabinowitch in Berlin. Dr. Dean was able to transmit the disease to black-and-white rats by subcutaneous and intraperitoneal injection of suspensions of the bacilli from the infected tissues, but was unsuccessful in his attempts to cultivate the micro-organism. In the latter particular, and in the marked density of the bacilli in the lesions, this disease recalls human leprosy; the closeness of the similarity is manifested, moreover, by its inoculability

only to other animals of the same species—i.e., to rats; for attempts to infect guinea-pigs, rabbits, mice, and macacus rhesus failed; and in man leprosy is transmitted only from one individual to another. After subcutaneous inoculation a local lesion in several instances ensued. The lesion consisted of a nodule containing a semi-caseous substance resembling that present in the skin of the naturally infected animals. The acid-fast bacilli are very numerous in these local lesions. The lymphatic glands in such cases, even at a distance from the lesion, were sometimes invaded by the bacilli. The most marked lesions, however, resulted from intraperitoneal injections.

Amongst tuberculous diseases the density of the bacilli is matched in the avian variety. In the various forms of avian tuberculosis the acid-fast bacilli are as thickly clustered as they are in this leproid disease of the rat. It was with the object of ascertaining whether the two conditions were the same that we injected a series of white rats with a pure culture of the avian bacillus, and also with the tuberculous spleen and liver of a pheasant dying from typical tuberculosis.

The Inoculation of White Rats with a Pure Culture of the Avian Tubercle Bacillus.

Five white rats were injected into the muscles at the root of the tail with a pure culture of the avian bacillus suspended in sterilised salt solution.

Rat 1. A rat was killed 11 days after inoculation. At the site of injection there was a lesion of about the size of a small pea, with a somewhat yellow centre. Smears made from the local lesion showed large numbers of acid-fast bacilli. The abdominal viscera presented no marks of disease. The lumbar gland of one side was slightly enlarged; microscopic sections of this showed foci of endothelial proliferation and giant cells; the giant cells held considerable numbers of tubercle bacilli.

Rat?.—A rat was killed 18 days after inoculation. At the root of the tail there was an intramuscular lesion, as in the previous experiment, but less extensive. Smears from this showed considerable numbers of tubercle bacilli. There was no disease of the lumbar glands or viscera.

Rat 3.—A rat was killed 100 days after inoculation. There was no local lesion at the site of inoculation and no disease of the lumbar glands or viscera.

Rats 4 and 5.—The remaining rats were killed 127 days (18 weeks) after inoculation. In one there was a small encapsulated intramuscular caseous mass at the right side of the root of the tail; smears from this showed considerable numbers of tubercle bacilli. The viscera presented no signs of disease. The second animal presented no local and no visceral lesions.

The Inoculation of White Rats with the Tuberculous Spleen and Liver of a Pheavant.

In the two following experiments a salt suspension of the tuberculous spleen and liver of a pheasant dying from tuberculosis was used as an injection, the inoculation being made into the root of the tail.

Rat 1.—One of the rats was killed 49 days (7 weeks) after inoculation. There was no local lesion and no disease of the viscera. The lumbar gland of the left side was enlarged, but without caseation; smears from the cut surface showed a very few bacilli.

Rat 2.—The second rat was killed 89 days (nearly 13 weeks) after inoculation. There was a small localised abscess, not caseous, in the muscles at the base of the tail. A smear from this showed numbers of polymorphonuclear leucocytes and giant cells, each kind of cell being full of tubercle bacilli. The lumbar glands were not enlarged; there was no disease of the viscera.

The Freeding of White Rats with the Diseased Organs of Tuberculous Birds.

Three white rats were fed with the tuberculous spleens and liver of three pheasants (received within a few days of one another) on Nov. 16th, 18th, 20th, 25th, and 26th, 1908. They consumed large quantities of the material with avidity.

Rat 1.—A rat was killed 58 days (8 weeks) after feeding. The intestine was slit up, washed, and minutely examined.

⁴ Journal of Hygiene, vol. v., No. 1, January, 1905.

⁵ The bacillus was from a subculture carried on from a strain kindly supplied to us by Professor Delépine, who raised it from a tuberculous fowl.

There was no trace of tuberculous disease within the intestine or on the peritoneal aspect. The viscera were normal.

Rat 2.—A rat was killed 98 days (14 weeks) after feeding. The intestine and stomach were slit up, washed, and carefully examined. There was no trace of disease in the mucosa or peritoneal coat and the viscera were normal.

Rat 3.—A rat was killed 125 days (18 weeks) after feeding. A close examination of the intestine revealed no disease of the mucosa or peritoneum. The viscera were normal.

Conglusion.

These various results show that the white rat is immune to the avian tubercle bacillus, whether the bacillus is experimentally injected (in pure culture or directly from the diseased viscera) or whether it is introduced in large quantities by the mouth.

ON THE USE OF RADIUM FOR LOCAL APPLICATION WITHIN THE BODY.

BY ALFRED C. JORDAN, M.D. CANTAB.,

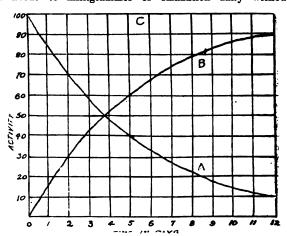
MEDICAL RADIOGRAPHER, GUY'S HOSPITAL, AND ROYAL HOSPITAL FOR DISEASES OF THE CHEST.

THE supply of radium is at present so small that the limits of its therapeutic usefulness have not yet been fully determined. Hitherto radium has usually been employed in the form of crystals of radium bromide. These crystals are contained either in a sealed glass tube or in a button with a covering of thin glass, aluminium, or mica. More recently they have been spread in a thin layer upon a flat surface and covered with a layer of varnish. Such buttons and spread preparations are suitable for application to the surface of the body.

Of the three types of radiation given off by radium (the alpha, beta, and gamma radiation) the view commonly accepted is that the gamma rays have a selective action, destroying diseased cells while leaving the normal cells intact, whereas the alpha and the soft beta rays are said to have a destructive action, destroying not only the diseased cells but also the normal cells. Much further investigation is required before this point can be finally settled. In the meantime it seems wise to accept the statement provisionally and to use means to prevent the alpha and soft beta rays from reaching the body. For this purpose a filter consisting of 1 millimetre thickness of lead is suitable.

The gamma radiation appears to consist of ether rays of the same kind as very penetrating X rays, and there will only be an advantage in applying radium as compared with the application of X rays if it be shown that the gamma rays have a more definite selective action than have the X rays. In the interior of the body—as, for instance, in the mouth, throat, cosophagus, rectum, and uterus—it is not possible to apply the X rays directly in most cases. In such cases there appears to be a very real indication for the use of radium, and the method to be described was devised for the purpose of carrying out this indication in practice. For this purpose I have been enabled to obtain radium emanation in sealed glass tubes. The emanation is obtained from a solution of 400 milligrammes of radium bromide. solution is kept in a flask to which is attached a Töpler air-pump. The air in the flask is kept partially exhausted, and whenever any radium is required the pump is worked until at the low pressure the solution commences to boil. Radium emanation is carried with the water vapour and residual traces of air into the tube leading out of the flask; this may then be collected in a small length of glass tubing inverted over a cup of mercury, and the tubing sealed up in the flame. Thus the original stock solution is never touched. The sealed glass tube containing the emanation behaves physically exactly like a similar tube containing crystals of radium bromide. All the forms of radiation are given off from it in exactly the same way: but there exists a great difference-viz, that the radio-activity of the emanation tube immediately begins to decay according to an exponential law as expressed in the accompanying curve (see figure), so that at the end of about four days it has lost half its radio-activity. The radio-active value of the emanation tube is determined when it is first sealed by means of an electroscope, measuring it by its |

gamma radiation against a standard preparation of radium bromide. By means of the curve it is then a simple matter to determine the exact strength of the emanation tube at any subsequent date. While the emanation in the sealed tube is decaying the original radium (which had lost an equivalent amount of radio-activity) is recovering. With a stock solution of 400 milligrammes of radium bromide it is possible to withdraw the equivalent of about 40 milligrammes of emanation daily without



Decay and recovery curves of radium emanation from "The Radioactive Substances" (W. Makower). International Scientific Series, vol. xcii., p. 149.

diminishing the value of the solution. If more than 40 milligrammes be removed daily then the stock solution loses strength, and the withdrawal of emanation must be discontinued for a few days to enable it to regain its full value.

I have had lead "compo" tubing made of suitable sizes, the wall of the metal being 1 millimetre in thickness in every case. Every glass tube of emanation is enclosed in a length of this tubing, the ends of the metal being closed down over the glass, rounded off, and welded up. All the soft beta rays are absorbed in this metal (the alpha rays are not able to penetrate the glass), while some of the hard beta rays and practically all the gamma rays are able to escape. The metal tubing is enclosed in a tube of rubber, the ends of which are closed by a silk ligature, a considerable length of silk being left attached to one end. The tube is then ready for insertion into the rectum or cervix uteri in a case of recurrent or inoperable carcinoma. A 10 milligramme tube may be left in situ indefinitely (say all night and through the greater part of the day) without fear of producing any destructive action on the normal tissues. In the case of a growth high up in the rectum or in the sigmoid flexure—i.e., beyond the reach of the finger—the "compo" tube containing the emanation tube may be placed within a long rectal tube of rubber, and in this way may be passed up to the required spot. In the case of the esophagus the compo-tubing containing the emanation is placed in a Symonds's tube or in a stomach tube, and the tubing is passed down to the required place. In this case the tube must be removed for the purpose of administering food to the patient. It is easy to make sure by an X ray examination that the tube lies at the required place.

It is true a glass tube containing crystals of radium bromide might be used in a similar manner, but there is a very obvious advantage in using sealed tubes of emanation, for there is considerable risk of losing a valuable tube of radium crystals if it be left in the rectum, while the loss of a tube of emanation involves nothing more serious than the loss of a fortnight's treatment. A further advantage is due to the fact that the whole length of the emanation tube is uniformly radio-active, while the crystals fall to one end of the tube. The cases in which I have applied this method have included recurrent carcinoma of the rectum, cervix uteri, esophagus, and floor of the mouth. Although it is too early to give detailed results I may say that the results so far obtained are promising. It is scarcely necessary to point out that the use of sealed glass tubes containing emanation is not in any sense comparable to the use of emanation by injection

into the blood-stream or by inhalation, both of which methods have been tried. The method I have described is exactly the same in its nature as the use of crystals of radium bromide in sealed tubes, while my method is far more convenient and does not involve the risk of losing valuable tubes of radium salts.

Considering the enormous energy given out by radium, and considering that the alpha rays possess about 100 times as much energy as the beta and gamma rays together, it is obviously a matter of great importance to decide whether it is not possible to make use of the alpha radiation in treatment. For this purpose the suggestion of Makower should be carried out. He points out 1 that "we have only to expose a negatively charged conductor, for example a wire, to the emanation in order to concentrate the maximum possible quantity of active deposit on its surface. It is thus possible, without any difficulty, to obtain surfaces whose activity per unit area is enormously greater than could be obtained by any other means." Needles thus rendered active could be inserted into the interior of malignant growths where they would be able to exert the whole of their energy. The activity of these needles decays very much more rapidly than is the case with the emanation; they decay to half value in about 20 minutes. At the end of this time they can be recharged and reinserted into another part of the growth. Electrodes of various forms could be charged and held in contact with localised growths e.g., in the larynx -for a suitable time, which must be determined by trial. I have not yet attempted to apply this method, which is necessarily experimental and requires the resources of a large institution. Weymouth-street, W.

Clinical Aotes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON A CASE OF ENURESIS WITH HYPER-METROPIA.

BY ALBERT H. FARDON, M.D. CANTAB., M.R.C.S. ENG.

ENURESIS in children has had many and varied pathological conditions put forward as a causal factor, but hypermetropia, as far as I know, has not yet ranked amongst them. The following case seemed to indicate that possibly it should do so, and may be of interest for that reason.

The patient was a girl, aged 7 years, who attended my outpatient department for lack of control over the bladder. Her mother stated that the child had been in the habit of wetting herself for more than a year, and every day she returned from school wet through. The condition was first noticed soon after she began to attend school. The trouble occurred only at day-time, and she never wetted the bed. She had gradually been getting worse, and at the time she came to me she would pass urine six or eight times a day-in fact, she did so whilst I was talking to her. She was always conscious at the time and was a perfectly intelligent child, and said that she was quite unable to prevent it although she tried hard. She had no local condition to explain the trouble, and the urine was quite normal. She had no suspicion of adenoids and had not suffered from worms. She was the younger of two children, the elder girl being quite healthy. One infant had died from "convulsions," but apart from that there was no history of epilepsy. She never complained of pain in passing urine, and was not examined for a calculus. The patient was treated in the ordinary way with belladonna for some weeks, with no improvement. Bromides were also given a trial. The fact that the enuresis was diurnal only, and also that the trouble started soon after she commenced her schooling, suggested to me that her eyes might be the source of the trouble, and I accordingly performed a retinoscopy under atropine and found that she was hypermetropic to the extent of over 5 D. She was ordered glasses for constant wear and no further medication. In 10 days the mother said that the child was much better, and a week later she had

been four complete days without wetting herself. She has been wearing her glasses for six weeks at the time of writing and is entirely free from her trouble.

County Hospital, Guildford.

AN UNUSUAL CASE OF H.EMO-PERICARDIUM.

BY A. J. WILLIAMSON, M.A., M.B., CH.B. ABERD., HOUSE SURGEON TO THE LIVERPOOL STANLEY HOSPITAL.

THE body of a man, aged 35 years, was brought to the Liverpool Stanley Hospital on the morning of Oct. 20th, 1909. He was a labourer, and according to the account received had fallen from a box a couple of feet high to the ground, where he continued to breathe in a stertorous manner for about 20 minutes when death supervened.

At the necropsy I found on opening the chest that the pericardium was greatly distended and that it projected well over to the right side of the sternum. It was found to contain about 18 ounces of well-formed blood-clot, and at the first glance it was rather difficult to locate the source of this effusion. The pericardium had a healthy appearance and there was no visible rupture of the heart. The organ itself was in a condition of well-marked fatty degeneration, the muscle being pale, flabby, and atonic. Beyond slight atheroma at the mouths of the coronary arteries these seemed to be in good condition. But when the organ was washed, in addition to two well-marked "milk spots," there were seen on its surface several small ecchymoses. These ecchymoses were situated on the right ventricle, and to a less extent on the left ventricle, and when sponged clean blood was seen flowing from the mouths of minute vessels in their centres. At the aortic valves some thickening was noted and the aorta was enlarged and atheromatous. There was no evidence of aneurysm. Congestion was present in the abdominal organs, which were in general very healthy. The liver showed signs of commencing fatty degeneration, and the stomach was large and contained the partly digested residue of a meal. The brain was perfectly healthy.

Death seems to have been caused by sudden stoppage of the heart from increasing pressure within the pericardium, and the causative effusion followed the rupture of several small cardiac veins which were in a condition of congestion from a feebly acting left ventricle.

Liverpool.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

MEDICAL SECTION.

The Role of Fats in the Treatment of Disorders of the Stomach.

A MEETING of this section was held on Nov. 23rd, Dr. J MITCHELL BRUCE being in the chair.

Dr. F. CRAVEN MOORE and Dr. R. L. FERGUSON contributed a communication on the Rôle of Fats in the Treatment of Disorders of the Stomach, which was read by Dr. Craven Moore, and which is published in full on p. 1737.

Dr. A. F. HERTZ said that, in his experience, the administration of olive oil before meals was not sufficient to relieve symptoms. He found that the best results were obtained by placing patients on an exclusive diet of olive oil.

Dr. R. SAUNDBY did not consider that the use of clive oil was necessary in order to relieve pain. He had observed that when these patients were put to bed pain disappeared. He maintained that in cases of hyperacidity a useful treatment was half a pint of infusion of hops taken before going to bed.

Dr. R. HUTCHISON pointed out that many patients with hyperacidity had a repugnance to taking oil; he had known patients who preferred to suffer the pain of the condition rather than take oil. He suggested that the treatment by oil might be limited in its application.

Dr. FERGUSON and Dr. MOORE then replied and the meeting ended.

¹ The Radio-active Substances, W. Makower, International Scientific Series, vol. xcii., p. 176.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

The Laboratory Diagnosis of Syphilis.

A MEETING of this society was held on Dec. 3rd, Dr. NEVILLE T. WOOD, the President, being in the chair.

Mr. Hugh W. Bayly read a paper on "Laboratory Methods for the Diagnosis of Syphilis." In Part I., Serum Diagnosis, he discussed the technique and rationale of the Wassermann and Bordet-Gengou reactions and described the terms commonly employed. Part II. Micro-biology.-The ultra-microscope, or reflecting immersion condenser, and the technique for its use were described. It was stated that the treponema pallidum can be demonstrated in practically every early untreated chancre and is also found in papular rash and mucous plaques. It appears as an extremely fine spiral from 5-25 μ long, with very regular and closely set spirals. Number of spirals range from 5-25. Distilled water is the best medium in which to examine them. Giant forms may be seen when examined in serum, and in this medium the movements are more active and last longer than in water. The movements consist of bending, snake-like movements, local wave contraction. Viscosity develops as organism becomes less motile. Agglutination occurs in serum only. The older the infection the greater the tendency to clump (auto-agglutination). Diagrams were shown for differential diagnosis of "spirochæta refringens," "spirochæta balanitidis," &c. Part III. Inoculation experiments.—Path of infection and mode of entrance discussed; small superficial erosions the most dangerous. Incubation: The more resistant the animal the shorter the incubation period. In apes positive inoculation obtained with material from the bone-marrow. spleen, and, much less frequently, testicle and lymphatic glands. In man: Positive inoculation obtained from wellmarked secondary syphilis. Virus: Attenuated by passage through apes. Prophylactic measures discussed. Conclusions: (1) That syphilitic infection is easily preventable; (2) that such infection can be diagnosed with certainty on the first appearance of a primary sore by means of the microscope; (3) that the earlier that the treatment is begun the better for the patient; (4) that a positive Wassermann, in the absence of a few diseases, is pathognomonic of syphilis; (5) that the Wassermann reaction forms a very useful guide to treatment, and that antisyphilitic treatment should be continued till a succession of negative results are obtained; (6) that the blood should be examined every six months for a couple of years at least after the first negative reaction is recorded.

Colonel F. J. Lambkin, R.A.M.C., said that for a year all the syphilitic cases admitted in the Rochester Row Hospital had been subjected to Wassermann's reaction. He quite agreed as to the value both for the treatment and diagnosis and quoted cases. He mentioned that the cases treated with arylarsenates had shown no toxic symptoms.

Captain Harrison, R.A.M.C., had carried out the test in Rochester Row Hospital and confirmed all that Colonel Lambkin had said. He hoped that much might be learnt and done for the treatment, &c., of syphilis by the use of the Wassermann test in the army on account of the efficient system of supervision which is required in these cases. He thought it advisable in the case of negative reaction to repeat the test with untreated patients' serum.

Mr. J. ERNEST LANE said that he agreed with the value of Wassermann's test. It would allow early treatment and at the same time avoid the treatment of non-syphilitics with prolonged courses of mercury, which had undoubtedly occurred. He spoke as to the toxic effects of the arylargeners.

Mr. C. GIBBS agreed with the great advance in syphilology due to Wassermann's reaction. He also spoke on the arylarsenate question.

Mr. REGINALD H. HAYES hoped that the test would settle the relative values of the modes of administering mercury.

Mr. J. E. R. McDonach said that there was a tendency for the test to be negative in undoubted syphilitic cases whilst taking mercury. He pointed out the great use of the test in women who aborted. He had found a tendency for the test to remain permanently positive in the cases of

children suffering from congenital syphilis, however long they were treated with mercury. He mentioned some causes of failure of the test and how to remedy them.

Dr. F. E. BATTEN spoke and Mr. BAYLY replied.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases.—Therapeutics of Radium.—Dyspepsia and Early Tuberoulosis in Children.

A MEETING of this society was held on Dec. 1st, Dr. BYROM BRAMWELL, the President, being in the chair.

The PRESIDENT exhibited a man, unmarried, aged 32 years, who suffered from Preataxic Tabes. The case was both of theoretical and practical interest as these tabetic attacks of gastric and intestinal crises were often mistaken in practice for other diseases. The man had been operated on for appendicitis two years ago, and since then he affirmed he had been subject to very severe attacks of abdominal pain. On examination nothing abnormal could be made out in the abdomen and it was at first thought that the attacks were due to post-operative adhesions. On further inquiry, however, it was discovered that the man had suffered from similar attacks for six months previous to his operation. He had never had lightning pains or ataxia, but his knee and Achilles jerks were completely absent; the Argyll-Robertson phenomenon was present. His blood showed marked lymphocytosis (400 in each field) and the Wassermann test was He admitted having contracted syphilis nine years ago. The attacks, which were very severe, occurred about once in six weeks and were accompanied by tenesmus. He was being treated by X rays and the patient felt himself to be better.

Mr. A. A. Scot Skirving showed a man who illustrated certain Defects of Memory after operation for Middle Meningeal Hæmorrhage. The patient fell downstairs five months ago and was unconscious when admitted to the infirmary. On examination there were no symptoms of compression, the pupils were equal, and paralysis was absent. One hour later, however, it was found that there was right-sided paralysis and the left pupil was double the size of the right. Hæmorrhage from the left middle meningeal artery was diagnosed. At the operation a fairly large clot was removed. By next day the paralysis had gone, but the patient remained perfectly unconscious for nearly three weeks. He then began to recover, but for many months subsequently marked weakness in the right arm and hand remained with slurring of the speech, especially in words with the letter "s," and loss of memory. He was formerly a clerk, but could not perform simple sums for nearly 18 months after his accident. At present he has greatly improved and his mental faculties and speech were returning.

Dr. Francis D. Boyd exhibited a man to illustrate the benefit of a Salt-free Diet in certain forms of (Edema. The patient suffered from a syphilitic ulcer on the forehead. When admitted to the ward he was perfectly waterlogged and the ædema extended up to the shoulder-blades. The excretion of urine was very scanty, and especially the chloride excretion. He was put on a varied diet (meat, eggs, &c.) but one free from sodium chloride, and immediately there was an enormous diuresis with great loss in weight. He was discharged almost well, but on resuming his ordinary diet his diseased condition soon returned. On placing him again on salt-free food he rapidly improved and was at

present perfectly well.

Professor H. ALENIS THOMSON exhibited a boy, aged 11 years, in whom, on account of a Periosteal Sarcoma of the Right Humerus, the middle third of the shaft was resected and a portion of the fibula inserted in its place. Formerly the only treatment for such a disease was amputation, but the history almost always was that the patient died from recurrence. At first excision was only employed for the less malignant forms, but it seemed only right to give the boy the chance of recovery in this case. The operation was performed three months ago. The tumour, with 3 inches of bone, was resected, and those parts of the muscle which were infiltrated were also removed. Unfortunately the musculo-spiral nerve was sacrificed. About 5 inches of the boy's left fibula, together with its periosteum, was excised, and the ends having been

sharpened they were jammed into the cut ends of the humerus. The wounds were quite healed and there seemed to be firm union between the bones. The cut ends of the musculo-spiral nerve were spliced into the musculo-cutaneous nerve and restoration of function was hoped for. Treatment by X rays was being carried out in order to prevent recurrence of the growth if possible.

Dr. JAMES RITCHIE, jun., gave a demonstration of Wassermann's reaction.

Dr. DAWSON TURNER read a paper on the Use and Effects of Radium, and illustrated it by patients and lantern slides. The paper will be published in a future number of THE LANCET

Dr. A. DINGWALL FORDYCE read a paper on the Differential Diagnosis and Treatment of a common form of Dyspepsia and of Early Tuberculous Infection in Children, in the course of which he said: The introduction within recent years of new methods and new tests has conduced to greater precision in diagnosis, and, through the recognition and differentiation of various conditions in their early stages, has been of value in rendering possible early active treatment. There is considerable difficulty in certain cases in children in ascertaining whether the symptom-complex is due to a chronic digestive or metabolic disorder, or whether a chronic infective condition-e.g., tubercle-lies at the root of the evil. The cases here considered are marked by vagueness in personal history and in symptoms, all have very chronic symptoms, mostly gastro-intestinal, there are no definite abnormal physical signs, and the children are going about, are comparatively well, and have approximately normal temperatures. Accurate and prompt diagnosis is essential to permit of active treatment. The special points in the diagnosis are: 1. The capacity of digesting fat. This capacity is considerable in cases of early tuberculous infection whereas it is markedly diminished in dyspepsia. 2. The reaction to tuberculin tests. Pirquet's cutaneous tuberculin reaction is of great value in diagnosing cases of this kind. A positive reaction to either the human or bovine form of tuberculin is a call for active antitubercular treatment. 3. The quantitative and qualitative estimation of the sulphates in the urine. 4. The opsonic index. Most of the tuberculous cases of which I speak are those of glandular tuberculosis. The treatment in the two classes of cases varies considerably: in chronic dyspepsia, markedly reduced diet, &c.; in early tubercle infection, free diet, fresh air, the prevention of sources of glandular irritation and infection, and tuberculin. My own impressions as regards the administration of tuberculin in obviously glandular infections—mainly abdominal or cervical glands -or in cases which by the previous methods of diagnosis I have diagnosed as latent tuberculosis, and I think these are chiefly glandular, are: 1. That this treatment is very unsafe when large doses are employed or when the temperature is unsteady. 2. That it is quite safe in the minute doses hereafter mentioned, when commenced with a practically normal temperature and when the patient is kept under observation. 3. That in many cases tuberculin treatment appears to have no definite effect upon the condition one way or another. 4. That in cases in which treatment by rest, climate, feeding, and careful nursing can be employed, improvement by these means alone is usually so marked that it is impossible to attribute to tuberculin, when given in these cases, its due meed of praise or to judge whether it takes any part whatever in the improvement. 5. That, however, when treatment by rest, climate, feeding, and careful nursing cannot be properly adopted, tuberculin is often of very marked value. These are the cases which otherwise do badly, and tuberculin treatment is, with them, of the greatest importance. 6. That T.R. is, as a rule, preferable to P.T.R. 7. That for routine use the method of hypodermic injection is greatly superior to that of oral administration—the effect of giving tuberculin by the mouth varies very much. These impressions are derived from the treatment of about 100 cases during the past three years. At the commencement I used the opsonic index as a guide, but early found it impossible and, I think, unnecessary to take the index in selected cases such as these. The condition of the temperature is, I think, a sufficient guide for the initial administration and the clinical symptoms thereafter in relation to each injection. The forms of tuberculin I have used have been Koch's new tuberculin, T.R., and the

corresponding bovine tuberculin, P.T.R. The two varieties I originally employed in order to determine their varying results in cases showing different reactions to von Pirquet's test with human and bovine tuberculin. I have come to the conclusion, however, that, no matter to which strain of bacillus von Pirquet's reaction is positive, T.R. is the tuberculin of the greater therapeutic value. culin was given hypodermically and by the mouth. By the mouth the doses I gave varied from 1-1000th of a milligramme to 1-250th of a milligramme and the results I considered very disappointing; only very occasionally was any satisfactory result noticeable. By hypodermic injection the initial dose varied from 1-10000th of a milligramme to an infant 9 months old, to 1-3000th of a milligramme to a child aged 12 years. The injections were repeated weekly or fortnightly, and the dose increased at long intervals and by very minute amounts, the rapidity and amount of increase desirable being gauged by the clinical condition. In all cases diminished vitality or health-apparent in any manner whatever—during the few days following an injection was considered a sign, either to diminish the dose or increase the intervals between doses, the conditions aimed at being that after each injection the child should continue steady improvement or show a step in advance. In several instances a child while under tuberculin treatment had apparently attained sound health; the tuberculin treatment was stopped for two or three months, the child relapsed, only again to improve on the renewal of the injections. Dr. JOHN W. SIMPSON thought that it was almost impossible to diagnose chronic intestinal catarrh from tuberculosis of the intestine in children and was of opinion that reaction to the tuberculin test was not of very much value because it could be obtained in perfectly healthy children.—Dr. D. CHALMERS WATSON said that the same difficulty in diagnosis existed in young adults as in children. He drew attention to the value of thyroid in tuberculous cases.—Dr. J. S. FOWLER and Dr. BOYD also took part in the discussion.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Operative Treatment of Fracture.

A MEETING of this section was held on Nov. 19th, Mr. JOHN LENTAIGNE, the President, being in the chair.

The President, in his introductory remarks, commented on the falling off in the attendances at the meetings, although during the past session many valuable papers had been read and many cases of extreme interest had been exhibited.

Mr. R. Lane JOYNT read a paper on the Operative Treatment of Fracture. He said that X ray examination of united fractures of the femur which had been treated by the common methods showed in many cases an amount of deformity which was little short of that seen in a number of museum specimens which were formerly regarded as examples of mal-union. The functional result in most of these cases The only way in which shortening could be was very bad. prevented and the fragments got into perfect line was by operation. Even when complete asepsis was not obtained suppuration was usually slight, and the results were much better than when the older methods were employed. A striking feature after the fixation of the fragments was the rapid disappearance of pain. He then described minutely the details of the operation for wiring, and of that in which Lane's steel plates were used. He looked upon Parkhill's method as being superseded in some cases; but there were others, notably where there was a compound fracture of the tibia with excessive suppuration and necrosed bone, in which it would be folly to attempt to suture or screw with Lane's plates or to use wire.

Mr. W. I. DE C. WHEELER read a paper on the Operative Treatment of Fracture and showed four cases where simple treatment had failed, but continuity and union were afterwards established by the use of screws and metal plates. In one case the operation was performed 3½ months after a compound fracture of the tibia and fibula which failed to unite, so that the limb was rendered useless. After operation complete union was obtained, the wound, which was partially open, healing over six screws holding two plates. The

fibula was wired. A second patient presented himself for treatment 11 months after the accident for a false joint of the tibia and an ununited fibula following simple fracture. Firm union was obtained after excision of the joint, and the introduction of screws, wire, and plates. The third case involved the surgical neck of the humerus, with a marked outward tilt of the upper fragment; the upper end of the lower fragment was embedded in the muscles under the coracoid process. A fortnight's treatment under the guidance of X rays failed to reduce the deformity. A single plate supported by an encircling wire was introduced to hold the fragments in position. The last case was that of a child, aged four years, who sustained a long spiral oblique fracture of the femur. Extension under an anæsthetic and immobilisation of the fracture in plaster-of-Paris failed to reduce the overlapping of the bones. Finally, an operation was performed, two plates and three encircling wires being introduced. All the wounds healed by first intention.

The PRESIDENT of the Academy (Sir CHARLES BALL) said that Mr. Joynt had given a very good demonstration of the application of practical mechanics to surgery. The instruments that had been shown were excellent on account of their size and capability, whereas the majority of instruments used for bone surgery were small and incapable. He had often speculated as to how the long American spindle turnscrew could take out a screw that could not be touched with a short one, and until that night he had never heard anything

like a reasonable explanation.

Sir Thomas Myles said that he had in 1884 brought forward a suggestion for the operative treatment of fractures. A quarter of a century had passed since then, and 30 years since the introduction of antiseptic surgery, and yet it was only to-day that the operative treatment of fractures was becoming general. Mr. Joynt had shown that, even when suppuration ensued, if proper provision was made for drainage, the results of operative treatment were decidedly better than those of non-operative treatment, no matter how well carried out. Most of the surgeons present had, however, tried the method of wiring, the method of the Lane plates and the Parkhill method, which was capable of being used in many cases with less disturbance than the method discussed that night.

Mr. R. C. B. MAUNSELL cited cases in which he had got good results by wiring, but with great difficulty, whereas when he had used screws and plates in identical cases the

operation was not at all a hard one.

The PRESIDENT said that if an operation was to be performed in a case of fracture the sconer it was done the better; delay added to the difficulty of the operation and interfered with the beneficial result. He had found the Parkhill clamp difficult to employ; it left several holes in the skin and there was always an increased danger of sepsis.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.-A meeting of this society was held on Dec. 1st, Dr. A. Fulton, the President, being in the chair.—Dr. F. H. Jacob showed an unusual case of Pernicious Anemia with microscopic specimens of the patient's blood. Dr. Jacob also read a few notes on a case of Delayed Chloroform Poisoning. The patient, aged 12 years, suddenly became maniscal 36 hours after the administration of chloroform, and very closely simulated a case of acute septic meningitis. A lumbar puncture revealed increased cerebro-spinal pressure but nothing else. Microscope slides showing fatty degeneration with areas of necrosis of the liver were shown.— Mr. A. R. Anderson read a paper on Some Remarks on the Treatment of Uterine Cancer. He considered first the possibilities of a cure and called a case "a cure" which was free from recurrence five years after the operation. The author maintained that the majority of cases can be cured if operated upon early enough and that the prospects of a cure are better than in cancer of the breast. The operation of choice was abdominal hysterectomy, which was completely superseding vaginal hysterectomy. As regards the operability of a case, all early cases, where the disease was confined to the cervix and the uterus was moveable and the broad ligaments were free, should be operated upon. But in his hospital practice only 1 in every 8 cases was thus favourable. Cases where the rectum and bladder were nvolved were clearly inoperable. By far the larger number of cases came within the intermediate doubtful

area. Mr. Anderson then read notes on a series of 20 such doubtful cases upon which he had operated in 1897 and the four succeeding years. A mortality of 30 per cent. in this series induced him to advise against operating in these doubtful cases. But Wertheim's encouraging figures in 1905-induced him to follow his lead with gratifying results. Finally, Mr. Anderson uttered a plea for the more early recognition of the disease and the more frequent vaginal examination by medical men.—The President, Dr. J. Watson, Dr. Purves, Dr. C. H. Cattle, Mr. A. M. Webber, and Dr. G. A. Coulby took part in the discussion.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of this society was held on Nov. 18th, Mr. T. H. Bickerton, the President, being in the chair.—Mr. Thomas Guthrie read a note on the Removal of a Tooth-plate which had remained Impacted in the (Esophagus for three weeks by means of Brüning's (Esophagoscope. The instrument was demonstrated, and radiographs by Mr. C. Thurstan Holland showing the tooth-plate in the esophagus were exhibited.-The note was discussed by the President, Dr. A. G. Gullan, Dr. T. R. Bradshaw, Mr. R. A. Bickersteth, and Mr. E. M. Stockdale.—Dr. W. B. Warrington read a note on the Results of Treatment in some of the Grave Cases of Diabetes Mellitus. The note was illustrated by lantern slides of charts showing various diets and the results of usage.—It was discussed by the President, Dr. Bradshaw, and Dr. J. Hill Abram. - Dr. F. H. Barendt showed a child suffering from Erythema Multiforme. -Dr. Nathan Raw showed the Brain of a child, aged 12½ years, dead from Hæmorrhage into the Right Lateral Ventricle .-Dr. Henry Briggs read a paper on the Restoration of the-Female Pelvic Floor by Operation or an Extended Perineorrhaphy. The object of the paper was to urge, on anatomical and clinical evidence, that: (a) reparable damage (mainly obstetrical) to the pelvic floor calls for a prompt remedy during the parous period of life; (b) irreparable atrophy of the pelvic floor is a consequence of the still too frequent postponement of radical operative treatment until the post-parous period of life; (c) modern advances in anatomical knowledge and in surgical methods justify an earlier restoration of the pelvic floor; (d) loss of tissue by excision of any portion of the vaginal walls is unnecessary and no longer an argument against operation during the parous period of life; and (e) a safe, simple, and effective operation was described.—The paper was discussed by the President and Dr. J. E. Gemmell, and Dr. Briggs replied.

ULSTER MEDICAL SOCIETY.—A meeting this society was held on Dec. 2nd, Dr. J. J. Austin, the President, being in the chair.—Dr. H. L. McKisack showed a man with Wasting of Certain Muscles of the Neck, Chest, and Arms as an example of Erb's Progressive Muscular Juvenile Atrophy. -Mr. Robert Campbell read a paper on the Treatment of Exophthalmic Goitre, dealing very fully with the suggested medical and surgical treatment, and giving full details of his own cases, in which the had, successfully and with good after-results, removed a portion of the thyroid gland. An interesting discussion followed.—Dr. T. Houston and Dr. J. Rankingave a demonstration of the laboratory method of diagnosing syphilis following Fleming's modification of Wassermann's reaction. They also supplied a series of interesting printed tables showing:—(1) Cases with Definite History and Definite Syphilitic Lesions at the Time of Examination; (2) cases with Definite History of Syphilis; (3) Parasyphilitics; (4) cases with other Diseases; (5) Normal Controls.—Dr. J. A. Sinton showed preparations of the Spirochæta Pallida. -Sir John Byers, in the name of the large audience present, thanked Dr. Houston and Dr. Rankin for their extremely interesting piece of research work, which reflected the greatest credit on the clinical side of the Belfast Medical School.

NEWCASTLE-UPON-TYNE CLINICAL SOCIETY.—A meeting of this society was held on Dec. 2nd, Mr. J. W. Leech, the President, being in the chair. The following cases were shown: Dr. T. M. Allison: (1) A case of Fibroid Phthisis with marked dislocation of the heart; and (2) a case of Oystic Kidney.—Dr. G. Foggin: Some cases of Albinism.—Dr. D. W. Patterson: A case of Morphea.—Dr. G. Hall: A case of "Acute Ataxy" occurring with a pneumonia in a child aged 3 years.—Dr. A. Parkin: A case of Mucous Colitis.—Mr. John Clay read a paper on an Irrigation Urethroscope

—Dr. F. C. Pybus read a paper on Appendicostomy as a Surgical Procedure. The speaker dilated on the technique of the operation, contrasting its results from the points of view of treatment and desirability with colostomy in the same region. Later he outlined the various conditions both above and below the appendix which were improved and cured by the operation.—The discussion was postponed to the next meeting.—Dr. W. T. Sewell then gave an Historic Review of Serum and Vaccine Treatment. In an interesting survey of the whole of the history of such treatment he traced the various steps of evolution in the methods from the earliest times right up to and including the processes involved in the modern method of vaccines.

Reviews and Notices of Books.

The Life of Sir William Broadbent, Bart., K. C. V. O., F.R.S. Edited by his daughter, M. E. BROADBENT. London: John Murray. 1909. Pp. 306. Price 10s. 6d.

THOSE who only knew Sir William Broadbent in his days of prosperity can hardly picture him as a man of small beginnings and hard struggles, but the simple annals which lie before us tell us in plain and ungarnished language—often, indeed, in his own words—that his ultimate triumph was well deserved and honestly won. In the preface to these memoirs the writer tells us that "no one can be more conscious than I myself of the deficiencies of this attempt to convey an impression of my father's life; but as a sketch may sometimes be more suggestive than a finished picture, so it is hoped that the portrait of him which emerges from the record of his own words and actions may be one which those who knew him will recognise and welcome as adding to their understanding of his character, while those to whom he is but a name may accept it as faithful within its limitations." In our opinion the picture has been well and faithfully drawn. Moreover, it portrays him as a man no less loveable in his private life than he was great in his professional capacity. As we read the early chapters of his life it is the indomitable pluck and determination of the ambitious young Yorkshireman which arouse our admiration, and which may well put heart and courage into many a young medical man now struggling along the same thorny path.

As a boy William Broadbent was educated at a day school in his native village of Longwood, whence he proceeded to Huddersfield College as a weekly boarder. At the latter institution he distinguished himself by winning several valuable prizes, but at the early age of 15 he bade farewell to school life and entered upon a business career. Shortly afterwards, however, in deference to his personal wishes to enter the medical profession, he became apprenticed for five years to his uncle, who was in practice in Manchester. In spite of the hard and anxious work which this apprenticeship entailed, it appears that young Broadbent found time and energy to attend lectures at the medical school in Manchester and to acquire the necessary knowledge for passing with distinction his professional examinations both at the Colleges and the University of London. His original intention was then to take up an appointment as house surgeon and subsequently to settle in practice in Huddersfield, but he failed in every application that he made, and was greatly discouraged and perplexed by such a continued series of disappointments. These initial rebuffs were the determining point in his career, for they led immediately to a step of the utmost importance, for he went to Paris without delay. Paris at this time was the chief centre of medical science in Europe, and coming into association with such teachers as Trousseau, Desmarres, Rayer, Ricord, and Piorry, it is impossible to exaggerate

the influence that such minds must have exercised on a young man of Broadbent's narrow and provincial experiences; indeed, it is not difficult to trace these influences on his character as a man, and in his scientific work as a physician. Moreover, it is highly probable that the first germs of his famous hypothesis in the bilateral association of the higher nerve centres fructified in the genial medium of the Salpêtrière. Broadbent's later successes, his Fellowship of the Royal Society, his work on the heart and on the pulse, his appointment as physician-in-ordinary to the Prince of Wales, his Baronetcy, and his work at St. Mary's, are still fresh in the memory of contemporary medical men and were recorded in these columns at the time of his lamented death. It is, however, as the clinical physician that Broadbent deserves best to be remembered. His powers of diagnosis and his capacity for forming an accurate prognosis were equalled by few physicians of his time; but on these points his memoirs are regrettably, but perhaps necessarily, silent.

In reading Sir William Broadbent's life it must occur to all those who only knew him in a professional capacity that his path would have been smoother if he had been less downright in his methods. Sir William Broadbent disdained to fight with the velvet glove. Neither had he the gift of tongues to round off the edges and asperities of his honest convictions. But in the annals of medicine he will live as one of the great English clinicians. This pleasant little memoir will be a delightful souvenir to those who personally had the honour of his acquaintance.

Archives of the Middlesex Hospital. Vol. XV. The Eighth Report from the Cancer Research Laboratories. London: Macmillan and Co. 1909. Pp. 204.

This volume opens with tabulated synopses of the postmortem examinations and operations in cases of malignant disease at the Middlesex Hospital during the year 1908, with records of the results of microscopical examination. Statistical studies of the cases of malignant disease of the cervix uteri based on the records of the Middlesex Hospital from 1904 to 1908, by Dr. H. MacCormac, and of malignant disease of the breast for the same period by Dr. H. Beckton, form a continuation of previous studies published in the Archives. Dr. Helen Chambers contributes an interesting paper on Malignant Disease of the Thyroid Gland. She concludes that the diagnosis between an innocent and a malignant tumour of the thyroid is often extremely difficult, and maintains that only those cases are to be regarded as malignant in which infiltration of surrounding tissues occurs. Apart from this evidence of infiltration, tumours other than sarcomata cannot be diagnosed as malignant from their histological structure alone. She states that carcinoma of the thyroid often pursues a very protracted course. Dr. Bryden Glendinning contributes a paper on Primary Malignant Disease of the Ovary, comprising a statistical study of 41 cases of primary carcinoma of the ovary, 16 cases of primary sarcoma, and 50 cases of papilliferous cystadenoma. Dr. Hector A. Colwell, in an interesting study of the erepsin in the tissues in malignant disease, finds that the ereptic values of tissues from cases which are the subject of serious and chronic organic disease tend to be lower than the normal, and that malignant disease conforms to this general rule. In a further contribution in collaboration with Dr. MacCormac on the ereptic power of the tissues of normal and cancerous mice, the results obtained seemed to suggest a slightly higher ereptic value in the tissues of mice harbouring a tumour than in the normal mice. Dr. J. C. Mottram describes a spectroscopic method for the quantitative analysis of the tissues for potassium and sodium. Dr. W. S. Lazarus-Barlow deals with the influence of carcinomatous and non-carcinomatous tissues upon electroscopic leak—a research which forms part

of this inquiry into the evidence as to whether there is any connexion between radio-activity and the carcinomatous process. He also records some experiments made in conjunction with Dr. Victor Bonney on the influence of radioactivity on the division of animal cells. The cells employed were the ova of the Ascaris megalocephala of the horse. The results obtained from X rays, radium, thorium, and uranium In small doses these substances caused were twofold. division to proceed at a faster rate than normal, whereas in large doses an inhibitory effect was obtained leading to total arrest of development in some instances. Sometimes monstrosities and irregular divisions were obtained. Another paper by Dr. Lazarus-Barlow and Dr. Colwell deals with the influence of atomic weight and valency upon the radio-activity of uranium and thorium compounds. Dr. MacCormac in a preliminary communication describes the power possessed by certain micro-organisms, notably staphylococcus pyogenes aureus and albus, bacillus diphtheriæ and bacillus tuberculosis, to affect a photographic plate in the dark. Dr. Beckton, in a paper on the granules in cells of normal tissues and new growths, states that in malignant new growths granules tend to disappear or are absent from the particular type of cells involved. Mr. C. W. Rowntree discusses the histology of X ray dermatitis in an interesting paper. Some experiments on the action of certain animal and other substances on the development of the ova of Ascaris megalocephala are described by Dr. Lazarus-Barlow and Mr. Somerville Hastings.

As a record of laborious work in the endeavour to throw light on the complex problem of the genesis of malignant disease this volume is worthy of high commendation.

Text-book of Anatomy. Edited by D. J. CUNNINGHAM, F.R S., Professor of Anatomy, University of Edinburgh. Third edition. London: Hodder and Stoughton; Oxford: Henry Frowde. 1909. Pp. 1427. 936 illustrations. Price 31s. 6d.

THE preparation of this edition of his well-known text-book was the last task of Professor Cunningham's life; he died a few days after he drafted its preface. He was not only a master-anatomist, he was its master-expositor; he had, beyond all cavil, the most gifted pen of modern British anatomists. He was a voluminous writer, but of all his works it is most likely with this text-book that his name will pass onwards amongst medical men. Only three chapters of it are actually written by himself-those on the brain and spinal cord, on the respiratory system, and on the ductless glands—but it is not too much to say that there is not a page of the book that does not reflect his influence, his precision, and his kindly spirit. This is naturally the case, for his collaborators were pupils of his own or of his master, Sir William Turner. There is no better text-book of anatomy in the English language than this product of the Edinburgh school; indeed, in many respects it is the best book.

Of the 14 sections into which this work is divided only two have undergone alteration for the present edition—the section on Osteology by Professor Arthur Thomson of Oxford University, and that by Professor A. M. Paterson, of Liverpool University, on Myology. The parts by the editor are unchanged; the Digestive System by the late Professor Ambrose Birmingham, the Urino-genital System by Professor A. F. Dixon, the section dealing with Joints by Professor D. Hepburn, the Organs of Sense and the Integument by Professor R Howden, the chapters on Embryology and the Vascular System by Professor A. H. Young, now unfortunately withdrawn from anatomy, and by Professor A. Robinson, now of Edinburgh University, and the chapter on Surface and Surgical Anatomy by Mr. Harold J. Stiles all remain practically as they were in the edition last reviewed by us.

The chapter on Osteology has undergone revision and extension. Illustrations have been added, showing centres of ossification as seen in radiograms; the articular surfaces of the bones have been emphasised by the use of colour; and areas of muscular attachment have been shown on specially drawn figures. In an appendix inserted at the end of the section Professor Thomson has given a most useful summary of the variations of the skeleton, of the terms and methods used in physical anthropology, and of the various problems concerning the morphology of the skull and skeleton. In only his section of the book are references given to recent or, indeed, to any literature. In a book of this size and standard the senior student has a right to expect guidance as to literature. The alterations in the chapter on Myology are connected chiefly with the introduction of new illustrations, and to these must be extended the very highest praise. They are artistic, truthful, and yet diagrammatic enough to convey the most essential features. The description of the pelvic fascia has been altered; but in spite of the fact that Professor Paterson is our leading authority on this complicated structure it cannot yet be said to be simple and easy of understanding.

In the sections that have been rewritten the nomenclature proposed by the Basle committee has been adopted as far as is possible. We are glad to note from the preface that the late Professor Cunningham was not altogether convinced that the adoption of the Basle terminology, which is being forced upon medical students in many parts of the world, especially America, was altogether advantageous for British anatomy. We are certain it is not. Many of the proposed terms are clumsy and unpractical. If we adopt this method of naming structures the anterior layer of the triangular ligament becomes the fascia diaphragmatis urogenitalis inferior, the internal arcuate ligament the arous lumbo-costalis medialis, the trapezoid of the wrist the cs multangulum minus, clumsier terms which give an advantage to no one.

We wish this text-book every success. In the preparation of the new illustrations no expense has been spared.

LIBRARY TABLE.

The Practical Medicine Series. Comprising 10 volumes on the Year's Progress in Medicine and Surgery. Vol. II.: General Surgery. Edited by John B. Murphy, A.M., M.D., LL.D., Professor of Surgery in the Northwestern University, Chicago. Chicago: The Year Book Publishers. Series 1909. Glasgow: Gillies and Co. Pp. 617. Price 8s.—The rapid expansion of surgery makes it practically impossible for the surgeon to be fully conversant with the most recent advances in the science unless he is able to refer to one of the several valuable annuals in which the progress of medical science is recorded. This volume is, we believe. the only one in the English language which is devoted only to surgery, and under the able editorship of Professor Murphy it is sure to be representative and accurate. It is true that many points suggest themselves for criticism, and here and there we consider that the material has hardly been adequately digested, but we appreciate the difficulty of dealing with such a large amount of added knowledge. The editor is wise in commenting on some of the new operations suggested, but it would have enhanced the value of the work if we had been provided with more of these comments from his pen. It is sometimes difficult for the reader to form an exact idea of the value of any suggested change from the necessarily short account presented to him in an annual, and therefore we should like to have had the opinion of Professor Murphy on these points. A good many illustrations are contained in this useful book.

Guide to Promotion for Non-Commissioned Officers (Corporal to Staff-Sergeant) and Men of the Royal Army Medical Corps, with Appendix on Hints to Young N.C.O's on Clerical and Other Duties in a Military Hospital. Compiled by Captain S. T. BEGGS, M.B. R.U.I., Royal Army Medical Corps (Reserve of Officers). Second edition. London: Gale and Polden, Limited, 1909. Illustrated, Pp. 380. Price 3s. 6d. net.—The favourable reception accorded to the first edition of this book having fully realised the hope expressed by the compiler that the guide should fulfil a useful purpose in the Royal Army Medical Corps and induce men to go in for promotion, he has accordingly issued a second edition. Great care has apparently been taken in bringing all matter up to date in accordance with the latest regulations, official text-books, and army orders, all of which have been strictly adhered to. New matter has also been added to make the guide applicable for the subjects connected with promotion to staff-sergeant, and a new section is embodied dealing with semaphore signalling, which is now authorised as part of the instruction of the Royal Army Medical Corps in field training. The Guide should also be useful for Royal Army Medical Corps officers, especially those of the junior ranks who may have to give courses of instruction to their corps orderlies-The practical value of the book has been greatly increased in the present edition by the inclusion of blank leaves between the various chapters and sections for notes, and also by the inclusion of references to the Military Medical Regulations, from which answers to questions have been taken. It is to be regretted that the author has not seen fit to include an index.

The Shadows of the Valley. By the Rev. A. G. MORTIMER, D.D. London: Skeffington and Son. 1909. Pp. 275 Price 5s. net.—The sub-title of this book, "A Practical and Devotional Guide in Sickness and Death," sufficiently explains the purpose of its author, who is the Rector of St. Mark's, Philadelphia, in having written it. The work is divided into three parts, of which Part I. may be called a commentary upon the Office for the Visitation of the Sick as it appears in the Prayer Book of the American Church: the Office is practically the same as that appointed by the English Church. Parts II. and III. deal with sickness and death respectively, and treat of these two all-important matters from the point of view of the sufferer and his spiritual adviser. There comes a time to all medical men when they can do no more for their patients, and at such times the physician of the body gives place to the physician of the soul, who, even if the dying man is unconscious, can comfort those to whom he is dear. Dr. Mortimer's book should be of much use to the clergy, to the sick themselves, and, in fine we may add, to all those who believe that the end of this life is not the end of all things. There is an excellent chapter upon the care of the dead.

Norwegian Self-taught, with Phonetic Pronunciation (Marlborough's Self-taught Series). By C. A. Thimm. Fourth edition, revised and enlarged by P. Th. Hanssen. London: E. Marlborough and Co. 1909. Pp. 128. Price, wrapper, 2s.; cloth, 2s. 6d.—In noticing previous volumes of this series we have mentioned that they are likely to prove useful to all who wish to obtain a speaking or reading acquaintance with a language without devoting too much attention to the grammar. This volume is very similar to the others which we have reviewed. It contains just those words which are likely to prove useful to a traveller in Norway. The grammar supplied is very elementary and occupies only some nine pages. The phrases are many and convenient, and wherever a Norwegian word is used its pronunciation is given under a simple system so that the reader should

have no difficulty in pronouncing the word so as to be understood by the inhabitants of Norway, even though the finer nuances are necessarily missed.

JOURNALS AND MAGAZINES.

Archives of Pediatrics. Edited by LINNEUS EDFORD LA FÉTRA, M.D., and ROYAL STORRS HAYNES, M.D. Vol. XXVI., No. 9. September, 1909.—This American journal is well known all the world over to those who are interested in the diseases of children. The September number of this year is an excellent one and in it Dr. P. J. Eaton contributes a very practical paper on "A Few of the Things a Pediatrician Should Teach." The great fault of specialists in diseases of children is that few of them have had opportunity for studying the infant and the child in health. The management of the nursery and the training of the infant are of far greater importance than subtle points in diagnosis and pathology. Dr. Eaton insists strongly that physicians should be able to instruct mothers and nurses on such important matters as the regulation of sleep, exercise, digestion, and defectation. He insists that dentition is only a physiological process when normal, and that lancing of the inflamed gums so as to free the erupting tooth at once relieves symptoms and restores the alkalinity of the saliva. Dr. G. R. Satterlee quotes a case in which the status lymphaticus was diagnosed during life, and apparently confirmed by Roentgen ray photography; the case, which was shown at the Section of Pediatrics (New York Academy of Medicine) gave rise to an interesting discussion. Altogether this number of the Archives is a good one; it reflects great credit on the joint editors and will well repay perusal. An article on Bacterial Vaccines by Dr. B. Raymond Hoobler, and a report on two cases of empyema by Dr. Oscar M. Schloss especially deserve attention.

Edinburgh Medical Journal.—Two introductory addresses appear in the November issue of this magazine—one by Professor Arthur Robinson, entitled "A Glance at Anatomy from 1705 to 1909," and the other by Mr. H. Alexis Thomson on the subject of surgery. Both deal retrospectively with the Edinburgh school, and together they indicate the connexion between anatomy and surgery and between surgery and physiology. Dr. Lachlan Grant writes on the Medical Man as a Reformer and enforces the need for a Minister of Public Health, supported by an adequate staff of experts, to deal with the whole field of public health administration. This paper has been already noticed in The Lancet. Mr. James M. Graham advocates the treatment of mammary abscess by suction and quotes a series of cases in which strikingly good results were obtained.

The Medical Chronicle. - The October number of this journal contains an account by Dr. Judson S. Bury of an interesting case of sarcoma affecting the crus, corpora quadrigemina, and optic thalamus, in which there was no hemianopsia, and none of the usual symptoms of intracranial tumour, in the form of vomiting, headache, or optic neuritis, but paralysis of the motor nerves of the right eye and loss of stereognostic sense in the left hand. Dr. W. J. S. Bythell deals with the skiagraphy of renal and ureteral calculi, emphasising the importance of proper preparation of the patient, and illustrating his article with a series of typical X ray photographs. Dr. Eugene S. Yonge writes on Paroxysmal Rhinorrhœa and discusses the indications for surgical interference in these cases and the varieties of operation which may be undertaken. --- In the November number is published an abstract of a dissertation by Dr. George Duncan Dawson on the Pharmacology of Phytolacca abyssinica, which would seem to contain an active principle allied to digitalin in its action, increasing the force of the

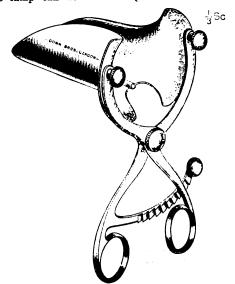
heart's beat, constricting the blood-vessels, and raising the arterial pressure. It is not at present in clinical use, but the author believes that it may prove of value. A somewhat brief abstract of a similar dissertation by Dr. C. E. Lea deals with Cardiac Arrhythmia, with especial reference to so-called nodal rhythm, in which the contraction of the ventricle coincides with or precedes that of the auricle. Dr. Lea finds that it occurs chiefly in mitral disease and in arterio-sclerosis.

The Dublin Journal of Medical Science.—An introductory lecture delivered by Dr. A. Campbell Geddes, and published in the November issue of this magazine, is devoted to a study of the Aims of Anatomy. He endeavours to correlate certain physical and physiological peculiarities, suggesting, for example, the existence of an abnormal human type possessing short bodies, long legs, and a lack of reproductive power, and also a connexion between full veins on the thoracic wall, and increased intrathoracic venous pressure due to smallness of the pulmonary veins. This latter peculiarity may induce defect in the lymph-flow and favour the lodgment of the tubercle bacillus. Mr. William Taylor records two cases of hæmatemesis successfully treated by operation. He advocates such treatment in all cases of bleeding which is apparently due to a chronic, as opposed to the ordinary acute, ulcer of the stomach.

Hew Inbentions.

BLADDER SPECULUM FOR OPERATIVE WORK.

THE illustration represents a dilating bladder speculum made for me by Messrs. Down Bros., St. Thomas's-street, London, S.E. The handles of the speculum are provided with a toothed rack, and may be used closed when examining the prostatic region or the pouch left after prostatectomy, or expanded, as shown in the figure, as when excising villous growths. On the hinged side of the speculum an opening is left through which an electric lamp can be inserted (unless a head lamp be



preferred). The reverse side of the speculum gives sufficient dilatation to allow freedom for operative work, such as the excision of the base of a villous growth, the bevelling of the blades enabling the base of the growth to be brought near the surface and the mucous membrane of the bladder sutured. The speculum was designed to meet a distinct want, and the various bevels and dimensions have been carefully worked out; it has proved in practice to be a very useful instrument.

Bristol. THOMAS CARWARDINE, M.S.Lond., F.R.C.S.Eng.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

FRIDAY, Nov. 26TH.

The Council resumed its sittings to-day, Sir DONALD MACALISTER, the President, being again in the chair.

The Medical Curriculum.

The debate on Dr. J. Y. MACKAY'S motion approving of the recommendations of the Education Committee with regard to the curriculum in medicine was continued.

Mr. Hodsdon said it was evident from what had fallen from previous speakers and also from the various proposals laid before the Council that the present state of affairs was not quite satisfactory. As had been pointed out, they must keep in mind that the General Medical Council had to legislate for duly qualified medical practitioners and not for specialists. When the curriculum was extended to five years the intention was that the fifth year should be devoted to clinical work. But when they came to look at the figures they found that taken all over, there was only an average of 13.8 per cent. of students who qualified in five years. If they looked to the cause of this and closely studied the figures put forward by the chairman of the Education Committee, they found that the earlier subjects had been encroaching on the final group to a great extent, and the remedy was either to lengthen the curriculum, which was not expedient at present, or to adopt some such proposal as was put forward by the Education Committee. That proposal would constitute a new departure and it therefore behoved the Council to proceed cautiously. But he was convinced that if the proposals of the committee were adopted-and he hoped they would be—the effects would be beneficial. Licensing bodies would see that the earlier subjects were taught with a sense of due proportion and the importance of clinical work would be made permanent. Further, the student would have it brought under his notice that unless he devoted a certain time to clinical work he would be retarded, and consequently he would quickly adapt himself to the new circumstances. He supported the report cordially and hoped that it would be adopted.

Mr. THOMSON said that hardly any one of the speakers had gone into the details of the committee's recommendations. Dr. Norman Moore had spoken in generalities. Christopher Nixon had carefully avoided any question of detail and had expressed the hope that whatever happened the medical student might not be hardly dealt with. The President had for their benefit paraphrased the recommendations of the committee. It seemed to him (Mr. Thomson) odd that the recommendations of such a committee should require such a paraphrase or any explanation. From the remarks the President made it appeared that what was meant was that for two and a half years the student would give his undivided attention to the final studies, and that he would not be allowed to go up for examination in them until two years had elapsed after passing the examination in anatomy and physiology. Dr. Mackay had expressed dissent from this reading of the recommendations by the l'resident. He (Mr. Thomson) had had the same difficulty in understanding the recommendations as many members of the Council had. There was no mention of a "block' Dr. Mackay's address when he introduced the matter. It was in the details of the scheme that its application might be harmful. Dr. Mackay had advanced as evidence in proof of the sufficiency of five years for the curriculum the fact that a certain percentage of men in the Victoria University obtained their qualification in five years. He had also mentioned the fact that in Glasgow there was a large proportion of men who took their degree in the same time. He was grateful to Dr. Mackay for having drawn attention to that fact. In the Education Committee's report of 1908 they would see under the heading "University of Glasgow" that 20 men out of a total of 56 passed in a 57 months' course. Let them look at the total length of time occupied in the first and second examinations and they would find it was 34.2 months. The time given to the examinations in medicine, surgery, and midwifery was only 22.8. It was not

his business to explain these figures, but he would draw from them a certain inference—that was, that the men who were delayed by the high standard of examination were able by their own energies to recover and acquire the sufficiency of knowledge which Dr. Mackay himself emphasised by a reference to the inspector's report. Now, Dr. Mackay could not have it both ways. If he set this forward as a proof that the work could be done in five years, he (Mr. Thomson) must point out to him that it was also the most convincing proof of the possible hardship which the insistence upon these 27 months subsequent to the passing of the anatomy and physiology examination would result in. If they insisted on these 27 months it would mean that the men who by their own industry and energy had endeavoured to do their best would be penalised. If these 27 months were insisted onand they could only be insisted on by a process of "blocks" it would be impossible for any man, certainly in the Scottish Universities, to get his qualification within the five years.

Dr. Knox confessed to a slight feeling of disappointment concerning the report of the committee. He had looked for a little more progress in the proposals and a little more bold-When the Council last interfered with the curriculum they lengthened it, and they proposed that the last year should be entirely devoted to clinical work. Those proposals were loyally received and acted upon in Scotland, and even up to the present they remained the ideal which both teachers and students in Scotland were working up to. The value of these proposals had been rather neutralised by the raising of the preliminary science subjects to such an important position that practically all students devoted their first year entirely to them. The increasing severity of those scientific subjects had also affected the progress of the student. A great number of extra subjects had been introduced into the final stage of the student's curriculum, subjects like insanity, bacteriology, diseases of the eye, ear and throat, to all of which the student felt he must devote a considerable amount of time. These things had altered the aspect of affairs since the Council last amended the curriculum. For these reasons he would have expected that when now they had tackled the question of the curriculum they would have shown a little more boldness than they had done and would have endeavoured—he did not say by what means—to lighten the student's work, to make it easier, and to promote so far as possible a greater attention to the final subjects. The effect of the committee's recommendations seemed to be that all students with the view of being certain in their anatomy and physiology would devote still more time to these subjects. That was not in itself a bad thing. But when they considered there was such a short period of 21 or 27 months for the final subjects he did not see how they could possibly be otherwise than hindered and their examinations in the final subjects retarded. He thought the curriculum would be extended considerably owing to this implied or avowed "block" in the middle of it. He did not like a "block" at all, and especially disliked it between anatomy and physiology on the one hand and medicine and surgery on the other. As a teacher of surgery he rejoiced when he got hold of men who knew their anatomy well. That was the way men made greatest progress in surgery and distinguished themselves in examinations. Surgery and anatomy were one and indivisible, and even in the case of physiology it was impossible to separate it from the practical. If there was to be any "block" he would leave it to the students to find where it was possible to expand their energies and where it was possible to concentrate. So far as he could see from the discussion that had taken place they were face to face with an extension of the curriculum. How it should be done and in what way he did not know, but he would be inclined to suggest, seeing there was a difference of opinion on the subject, that the Education Committee should take back their report to see whether they could not make a more advanced proposal. The report was such a slight advance that no great harm would be done if a pause were made to allow the committee to bring up further proposals modifying and probably extending the curriculum.

Dr. TAYLOR expressed dissent from the views enunciated by the last speaker. He thought there should be a period of undivided clinical study. He had been struck with the fact Mr. Thomson mentioned, that so few speakers had tackled the details of the recommendations, and he had also been

impressed with the fact that nobody had moved an amendment. Therefore the conclusion must be drawn that they were all agreed upon it. He was convinced that a student could not adequately study medicine unless he knew his anatomy and physiology thoroughly, and to invite students to learn medicine in their second year before they had got a thorough grasp of anatomy and physiology was a mistake. He was in favour of the principle underlying the committee's recommendations. The question of whether two years or two and a half years should be adopted was not before them in that particular form, and it might be safer to adopt a minimum of two years to begin with. In the case of two and a half years he did not see any exceptional difficulty so far as the five years' curriculum was concerned.

Dr. LATIMER said that although the curriculum had been extended to five years it was not a five years' curriculum. The curriculum from various causes reached an average of nearly seven years. He thought, however, that they should aim at something which would enable students to learn their profession and practise it confidently within a period of five years. If there was to be a "block," it should be at the commencement of the curriculum and not during its progress. The earlier subjects could be taught in schools to enable the students to pass in them in the preliminary examinations.

Dr. D. C. McVail said that nobody had proposed to lessen the number of subjects required for the medical diplomas. Nobody had proposed to leave out biology, physics, chemistry, or anatomy. All these subjects had been taken for granted in the debate, and none of the subjects introduced 15 years ago were to be got rid of. Were any of these subjects examined in with undue severity? Had the Universities and the Colleges required too much knowledge in the subjects of biology, chemistry, physics, or anatomy! Not to his know-He had seen no complaints of that. Nothing had come before the Examination Committee to show that the examinations in these subjects had been unduly severe. one proposed that there should be less practical teaching. Where was the difficulty then? The difficulty was in the five years. Five years had become too short a time for the average student. That was all. He did not think it showed failure in their system of teaching or examining that so few took their curriculum in five years. There were, no doubt, exceptional men who in five years could master all the subjects, but they must always be in the minority. If any student who desired to take a reasonably good position in his profession were to ask him what time he should devote to his curriculum he would reply, "No less than six years, and if possible seven." The average man could not put all these subjects into five years, and the very good men did not want to do it. They would never get a five years' curriculum with the present subjects. That being so, it seemed to him it was no business of theirs to try to impress on the examining bodies or the students that they should qualify in five years. The General Medical Council had to see that the persons to be entered on the Register had been adequately taught and examined. It lay with the Council to say what the subjects should be in the qualifying examination, but for the Council to try by any artificial manœuvre to make the bulk of the students cram up all these subjects in five years was not their duty. He was entirely against introducing any "block." The student would introduce his own "block." The schools were doing admirable work. The difference between the questions set at examinations 30 years ago and now was almost inconceiv-The progress that had been made by the profession able. since the General Medical Council was called into being had been enormous, and that had been largely brought about by the Council itself. There was not the slightest need for the Council now to take up the whole thing by the roots. He knew how enormously the schools in Scotland had improved in teaching and how much better the students were educated in them than when he knew them first. In England what a wonderful development there had been in regard to the two old Universities, and what a wonderful development there had been particularly in the schools in London! The examinations of the London Conjoint Board and the London University were entirely different from the examinations 30 or 40 years ago. Why should they begin in the way suggested? The schools of London, and others, were perfectly able to give advice to their students without the Council devising any artificial "blocks." Where were the "blocks" to be? Different places had been suggested. If he

were in favour of a "block"—which he was not—he would put it before the men went up to their clinical subjects. talk about a "block" after the science subjects with the assumption that they might be taught in public schools seemed to be quite futile. There were some public schools where no doubt they could be taught, but they could only be properly taught to boys who had got quit of their English, Latin, and mathematics. He was satisfied with the present state of affairs. The last cycle of inspections and visitations showed a level that never had been reached before, and when the time came for another circuit he had not the least doubt that still greater improvement would be shown. While it had been very serviceable that the Education Committee should have collected all these facts and figures he did not think that any case had been made out for the Council to interfere just now. Therefore he could not support the committee's resolution in so far as it involved the putting in anywhere of a "block."

Dr. McManus said he realised that anatomy and physiology were the foundation of all things, but he suggested that the sooner they got the young men into the wards and the longer they kept them there the better it would be for the public. Although he sat under some of the greatest professors in Dublin, he did not remember a word of their lectures, but what he learned from these same professors in the wards he had never forgotten. If they had fewer lectures and more practical work the better it would be for the rank and file of the profession.

Dr. ADYE-CURRAN said that year after year he had listened to suggested proposals for adding to the curriculum, and heaven only knew where it would end. In a year or two the curriculum would be extended probably to ten years, and it would cost £1000 to qualify. If this perpetual addition to the final was to go on something should be taken away from the preliminary. In the first year or two the student learned nothing about medicine proper. All he learned were extraneous subjects that could be referred to the schools. What would be the result of these proposals before them? Their result would be that there would be no medical students, because parents could not afford to keep their sons six or seven years while they completed their studies. He hoped the five years' curriculum would be fixed definitely once and for all, and that it would not be left in the unsettled state it was in at present.

Dr. CATON said the committee's recommendations offered a via media which would allow the student to disencumber his mind of the earlier subjects and so leave him free to give his sole attention to the later subjects.

Dr. MANN said they ought to insist upon the student's knowledge of chemistry, physics, and biology, so as to have well-educated men in the profession. He agreed with Dr. McVail about the difficulty of getting these subjects taught in schools. He knew the kind of thing that was taught in schools: the students got a smattering of all the "ologies" and got nothing of anything that was worth preserving. To put these subjects into the elementary part of the student's career before he began the study of his profession would result in the profession itself suffering.

Dr. MACKAY, in reply, said the Education Committee had been assailed on two sides. On the one hand, they were attacked for having gone too far, for having put forward proposals which would seriously retard the student, and for not considering the student. On the other, they were assailed because their action was not bold enough. The committee had adopted a via media. The reports of the committee on this subject were spread over three or four years, and because all these reports were not before the Council he admitted it was a little difficult to grasp all the Those reports contained many findings on many subjects, but the committee had not put all the findings before the Council; they had simply taken out what seemed to be the most pressing necessity of the time and addressed themselves to that. They had put forward a conclusion which referred directly to the length of the curriculum. The other matters in the reports were not ripe for solution and might be taken up hereafter. He had decided to put before the Council an amended motion in more formal and precise terms in place of the motion on the paper. This was as follows:

That in the opinion of the Council the regulations of the licensing bodies should be so framed as to ensure that the study of the final group of subjects in the medical curriculum, including pathology, medical jurisprudence, public health, therapeutics, midwifery, surgery,

and medicine, shall be pursued (a) throughout a period not less than two and a half academic years (27 months) following upon the completion of the examination in anatomy and physiology; or (b) throughout a period not less than three academic years (33 months), two of which (21 months) shall be subsequent to the completion of the abovementioned examination.

The committee believed there was no danger in overlapping if it was not carried too far, and they desired each body to select either of the alternatives, which were absolutely equivalent in time value. There was no proposal in the scheme to limit the period of final study to the last part of the curriculum. The final study might begin at any time according to the wishes of the body. It had been pointed out to him that there were cases in which it would be exceedingly hard to enforce those rules absolutely, and he proposed to add to the motion he had just read the following:—

Any case of exemption from this rule should be reported to the Council by the licensing body granting the exemption.

That admitted the principle of exemption and freed the bodies to suggest any form of exemption they thought The committee did not think the time had come necessarv. to establish a six years' course, but the laying down of the reforms in the motion would have the effect of forcing many of the bodies to reconsider the arrangements of the earlier part of their curriculum, and indirectly it would prevent the necessity for a six years' course in the immediate future. When the time came to make another rearrangement it would probably be the final portion of the course that would require extension. That, however, was a matter for future consideraton. The committee at the present moment did not think the time was ripe for relegating to the schools the medical requirements in chemistry, physics, and biology. An interesting experiment was being carried on at present in connexion with this matter. The English bodies had recognised a certain number of selected schools, and students were coming up from these schools, having passed through the school curriculum in these subjects. The committee had not yet had time to judge of the results. The greater number of the schools in the country were not in a position to take up the requirements in these subjects and deal justly with them, particularly in the department of biology. Although he was a young member of the Council he had already learned that the business of the Council was to lead and not to drive, and that they would likely do damage if they pressed bodies to adopt any policy or course against their will. That was the reason why the committee had put forward no drastic proposal. They sought only to establish a principle which they felt would be accepted. It could be extended in due course if it was found necessary or expedient.

At the suggestion of the PRESIDENT, Dr. MACKAY did not put the amended resolution in the form in which he read it to the Council. Instead he proposed the motion in the following terms:—

That the regulations should be so framed as to ensure that the study of the final group of subjects should extend over not less than two and a half academic years after passing of the examination in anatomy and physiology.

S'r HENRY MORRIS said he thought they should do what was practicable and likely to be accepted by the various bodies. He thought, considering what had been practicable up to the present, the time had hardly come when they could ask all the examining bodies to insist upon two and a half years. He therefore moved as an amendment that the following should be substituted for Dr. Mackay's motion:—

That the regulations should be so framed as to ensure that the study of the final group of subjects should extend over not less than two years after the passing of the examination in anatomy and physiology.

Dr. NORMAN MOORE seconded the amendment.

On a vote Sir Henry Morris's amendment was carried by a substantial majority. It was then put as a substantive motion and agreed to, with two dissentients.

On the motion of Dr. MACKAY, it was decided that the two years mentioned in the resolution should be defined as 24 months.

The PRESIDENT said that the addition suggested by Dr. Mackay regarding exemptions was not necessary as exemptions were already provided for.

Sir HENRY MORRIS moved :-

That it be referred to the Education Committee to consider further the place in the student's career which the preliminary sciences should occupy; and that the committee be requested to frame and submit to the Council a pattern scheme of medical education whereby the required minimum of the several subjects to be included in the curriculum can be adequately studied and the requisite examinations

thereon passed by the average student within the period prescribed by the curriculum.

In the near future, he said, the question of the re-arrangement of the earlier part of the curriculum must arise. He had had investigations made with regard to the matter, and the figures showed that those boys who had been trained in the early subjects in the general schools of the country passed in greater proportion than those who had been trained in the various medical schools. He proposed the motion with the view of trying to standardise the minimum required for the curriculum.

Sir C. NINON seconded. The main consideration of the Education Committee, he supposed, would be to see whether they could not put the subjects of the preliminary education outside the medical curriculum. If the motion meant anything it meant a reconstruction of the medical curriculum.

The PRESIDENT: No, I don't think that.

Sir C. NINON: Then what does it mean?

The PRESIDENT: The Education Committee will tell you when they report.

Sir C. NIXON said he supported the motion believing it desirable that a radical change should be made in the medical curriculum.

Dr. MACKAY said the Education Committee would gladly do its best to look into this question, although he was not hopeful that a curriculum could be drawn up which could be done by the average man in less than five years.

Dr. McVAIL said that knowing, as he did, the system of medical education in Scottish Universities he felt perfectly certain they would never dream of accepting school botany, school zoology, school chemistry, or school physics as part of the curriculum for the medical degree.

The PRESIDENT: I do not think that is raised here.

Dr. McVail: I think it is. The Council was going to ask the committee to lay down a pattern scheme. That meant that the Council was dissatisfied with the present scheme, and that it admitted the present scheme was not a pattern scheme. That was what certain of the Scottish Universities would never look at, and if the Universities of Scotland would not take it on it was extremely unlikely the English Universities would do so. It would create a big division between degree-granting authorities and authorities that did not grant degrees but granted diplomas. It was a dangerous resolution in his opinion, and he objected to it being sprung on the Council without notice.

The motion was carried by 17 votes to 5. Ten members did not vote and two were absent.

Dr. SAUNDBY moved that -

The question of allowing candidates to enter for each of the subjects separately of the final examination in medicine, surgery, and midwifery be remitted to the Examination Committee for consideration and report.

He mentioned that a great deal of interest was taken in this matter. This was particularly so at Edinburgh. He would content himself in moving his motion in a few words.

The motion was agreed to.

Penal Procedure.

The Council received in camera a report from the Executive Committee with regard to penal procedure.

Penal Cases.

The Council resumed the hearing of penal cases.

The case was considered of William Shaw, registered as of Larne, co. Antrim, Lic. R. Coll. Phys. Edin. 1886, Lic. R. Coll. Surg. Edin. 1886, who was summoned to appear before the Council on the following charge as formulated by the Council's solicitor:—

That you were convicted on March 24th, 1903, and again on March 23rd, 1909, at the Larne Town Court of being found drunk in a public street, and on August 24th, 1909, at the Larne petty sessions of the following misdemeanour—namely, of being found on licensed premises in contravention of the provisions of the Licensing Acts.

Mr. Shaw did not attend but he sent a letter of explanation.

The PRESIDENT, in delivering the decision of the Council, said: I have to announce that William Shaw, having been proved to have been convicted of divers mislemeanours alleged against him in the notice of inquiry, the Registrar has been directed to erase his name from the Medical

The Council then considered the case of Harry Robert Ruthority or combination of Authorities must conduct the Emms, registered as of 132, Winson Green-road, Birmingham, Mem. R. Coll. Surg. Eng. 1896, Lic. R. Coll. Phys. be examined in all three subjects by one Medical Authority

Lond. 1896, who was summoned to appear before the Council on the following charge as formulated by the Council's solicitor:

That you were on June 16th, 1909, convicted at the Cambridge Borough police-court of having on May 28th, 1909, feloniously stolen a bicycle belonging to one Debendra Mohan Bose, and on June 7th, 1909, of having feloniously stolen a New Chesterton bicycle belonging to one Alfred Conway, and a Standard Triumph bicycle belonging to one Thomas James Mudd.

Mr. Emms did not attend.

The PRESIDENT, in intimating the finding of the Council, said: I have to announce that Harry Robert Emms having been proved to have been convicted of the felony alleged against him in the notice of inquiry, the Registrar has been directed to erase his name from the Medical Register.

The last case was that of James Alexander Pettigrew registered as of 11, Lowther-street, Whitehaven, Cumberland, "in practice before July 22nd, 1878."

The Dental Committee to whom the case was referred found that the following facts were established by the evidence:—

That on Jan. 4th, 1909, the said James Alexander Pettigrew was convicted at the Lancaster Quarter Sessions of unlawfully and wilfully neglecting certain children under the age of 16 years in a manner likely to cause them unnecessary suffering and injury to their health, and was sentenced to six months' imprisonment with hard labour. The evidence before the Committee consisted of the certified copy of the said conviction.

The PRESIDENT, in delivering the decision of the Councilsaid: I have to announce that James Alexander Pettigrew having been proved to have been convicted of the misdemeanour alleged against him in the notice of inquiry, the Council has directed the Registrar to erase from the Dentists Register the name of James Alexander Pettigrew.

The Apothecaries' Hall, Dublin.

The report by the Examination Committee on the report of the final examination of the Apothecaries' Hall, Dublin, held in January, by the assistant examiners in surgery (Sir Lambert H. Ormsby and Professor Conway Dwyer), was received.

Dr. McVail moved that the report on the final examination of the Apothecaries' Hall held in April should likewise be received and entered in the minutes.

The Examination Committee mentioned in the report that the assistant examiners were satisfied with the manner in which the examination was conducted, and they (the assistant examiners) considered the standard of proficiency in medicine, surgery, midwifery, and ophthalmology required from the different candidates was searching and sufficient in every detail. The Examination Committee drew attention to a case in which a candidate was exempted in a subject of medicine in the final examination on the ground that he had passed in it elsewhere. Some correspondence had passed between the registrar and the authorities of the Apothecaries' Hall, Dublin, on the subject. A part of that correspondence was included in the report. Mr. H. E. Allen, the registrar of the General Medical Council, in the course of a letter pointed out it did not appear to be permissible to exempt the candidate in a subject in the Final Examination. Mr. Henry W. Mason, the secretary and registrar of the Apothecaries' Hall, in replying stated that "when the candidate made application for admission to our Final Examination he requested exemption in Midwifery, having already passed in this subject elsewhere. Before acceding to his request, being ourselves doubtful on the point, we wrote you on 2nd of October, 1908, for definite information on the point of exemptions. Your reply of October the 3rd was very full and explicit, stating that there was no rule on the subject, and consequently the candidate was admitted to Examination and allowed the subject. We therefore hold ourselves blameless in the matter, and would not have acted as we did save and except for your reply." Examination Committee in their report quote from the minutes a similar case in 1903, where it is stated that the recognition of a final subject passed before a different licensing body is quite irregular, in view of the opinion expressed by the Council's legal adviser, that "the Examination must be one Examination, in the sense that one Medical Authority or combination of Authorities must conduct the whole Examination of the Candidate; that is, that he must or combination of Authorities." The report concludes as follows:

The Examination Committee regrets that again a procedure should have been adopted by the Apothecaries Hall which in the opinion of legal counsel is illegal. The Examination Committee is of opinion that the Council should draw the attention of the Apothecaries' Hall to the opinion given by the Council's legal adviser regarding what constitutes a Qualifying Examination. The Committee is further of opinion that the Council should call the attention of all the Licensing Rodles to this opinion. The Committee regards the Reports of the Assistant Examiners to the Apothecaries' Hall as not sufficiently full and definite, and it suggests that in future the Assistant Examiners be supplied with a form of schedule to be filled in by them in the case of each candidate.

Dr. ADYE-CURRAN took objection to the reception of the report on the ground that the full replies of the authorities of the Apothecaries' Hall were not included in the correspondence. In conclusion, he moved as an amendment:

That the report of the Final Examination of the Apothecaries' Hall of Ireland be again postponed till the May session, in order that the remarks of the body concerned may be added.

Dr. McManus seconded.

The debate was adjourned and the Council rose.

SATURDAY, Nov. 27th.

The Council resumed its sittings to-day. Sir DONALD MACALISTER was again in the chair.

The Apotheoaries' Hall, Dublin.

The debate was resumed on Dr. Adye-Curran's amendment to Dr. McVail's motion with regard to the report on the Final Examination of the Apothecaries' Hall, Dublin.

Dr. McVail reviewed at some length the matters dealt with in the report. The Council, he said, was responsible for having things done according to law, and he did not think that the report should be postponed at all.

Dr. ADYE-CURRAN maintained that everything that had been done by the Apothecaris' Hall, Dublin, had been done There had been a mistake. For years past there had been every endeavour on the part of the Hall to fall in with the wishes and decrees of the Council in every possible way.

Sir HENRY MORRIS asked whether there was any objection to the report being postponed for six months. It might be desirable if the matter were important to have the remarks of the body concerned.

Dr. McVail read the correspondence which was not printed in the report.

Dr. ADYE-CURRAN withdrew his amendment on the understanding that this correspondence would be included in the minutes.

The motion to receive the report was agreed to.

Dr. McVail then moved that the Council should express approval of the following paragraph in the report:-

The Education Committee regrets that again a procedure should have been adopted by the Apothecaries' Hall which in the opinion of legal counsel is illegal.

Dr. NORMAN WALKER seconded.

Dr. Adye-Curran considered that the motion was rather severely worded. The Hall was not to blame. The Council had made a mistake.

The motion was carried by by 19 votes to 4. members did not vote and seven were absent.

The three other paragraphs in the conclusion of the report

Apothecaries' Hall, Dublin: Preliminary Examination.

Dr. MACKAY, chairman of the Education Committee, submitted the following report:

The Committee, having considered an application from the Apothecaries' Hall, Dublin, regarding the recognition of its preliminary examination, passed the following resolution: "That the application be refused, and that for the reasons the applicants be referred to the decision of the Council as reported in the minutes for 1894 and 1908."

In moving the adoption of the report, Dr. MACKAY said the committee believed that it was not right that a body which was concerned purely with medical education should conduct a preliminary examination in general education. Such an examination should be conducted only by a body which was in close touch with the general education of the country and never by a body whose sole interest in such an examination was the admission of students to the medical curriculum. The committee wished in no way to discourage the legitimate efforts the Apothecaries' Hall were making in Ireland. If there were difficulties in their way now was the time that a serious effort should be made to remedy these

difficulties in a proper manner. They had now in Ireland new universities, and it would be a very proper thing if all the bodies in Ireland concerned were to get from the new universities a preliminary examination in general education conducted by an impartial body representative of them all. He trusted the action of the Council would have the result of bringing about the establishment of a general educational body in Ireland which would do for that part of the kingdom what similar bodies were doing in other parts of the country.

Dr. ADYE-CURRAN maintained that the Apothecaries' Hall was obliged under Act of Parliament to hold these examinations. No man could be admitted as a licentiate of the Apothecaries' Hall unless the directors satisfied themselves of his proficiency in general education. In that way the Apothecaries' Hall differed from other bodies. They had

a perfect right to hold these examinations.

The PRESIDENT pointed out that such recognition by the General Medical Council would mean the endorsement of the examinations for every body besides the Apothecaries' Hall whether they liked it or not. What Dr. Adye-Curran had said was irrelevant to the main question. There was nothing to prevent the Apothecaries' Hall starting any examination they liked so long as it was for their own consumption.

On a vote the report was adopted by 27 votes to 1.

Dental Registration.

Mr. Tomes moved the reception and adoption of a report from the Dental Education and Examination Committee in regard to an application from Mr. H. M. McNeill for dental registration. The report stated that on Jan. 20th, 1909, an application for registration in the colonial list of the Dentists Register was received from Mr. H. M. McNeill on the ground that he possessed the L.D.S. diploma of New Zealand and the D.D.S. of the University of Toronto. The application was refused. Mr. McNeill appealed to the Privy Council, and on June 20th the Privy Council was informed of the grounds upon which the refusal was based. The report entered at length into an explanation why the committee The report considered that the possession of the diplomas tendered was not sufficient in its view for the registration which was Mr. Tomes mentioned that the Council had applied for. always held itself entitled to inquire into the circumstances of colonial registration.

Dr. KNOX seconded.

The motion was agreed to.

The Pharmacopaia Committee.

On the motion of Sir John Moore the report of the Pharmacopæia Committee was received. The report was as follows:

From May 23rd to Nov. 22nd, 1909, the number of copies of the British Pharmacopæia (1898) sold by the publishers was 578. The total number of copies sold in the year beginning Nov. 23rd, 1908, was 1060. The annual demand for the existing Pharmacopæia thus appears to remain steady. Up to the present time 41,366 copies of the Pharmacopæia and 4458 copies of the Indian and Colonial Addendum have been sold. The stock now in hand consists of 1664 copies of the Pharmacopæia, together with 1876 copies of the Addendum.

The committee met on Oct. 22nd and 23rd and considered in detail the suggestions made by the licensing bodies and other medical authorities at home and abroad for the improvement of the Pharmacopæia, with a view to its forthcoming revision. Provisional decisions were arrived at concerning the omission or inclusion of particular drugs and preparations. On a number of points it appeared that further inquiries were necessary before definite conclusions could be reached. Meanwhile the committee has resolved that the matter now included in the Indian and Colonial Addendum, or such part of it as after due revision is retained, shall be incorporated with the text of the next Pharmacopæia. In this way practitioners and pharmacists throughout the empire will be provided with a comprehensive British Pharmacopæia in one volume, in which due account is taken of local conditions and requirements.

Students' Registration.

On the motion of Sir Hugh Beevor, the report of the Students' Registration Committee was received.

The Anæsthetics Committee.

The PRESIDENT moved the reception of the report of the Anæsthetics Committee, which was appointed on May 29th.

To consider the proposals for legislation on the subject of anæsthetics which have been or may hereafter be put forward, and to report to the Council on the position of the subject at the November session.

The committee had before them the Anæsthetics Bill, 1909, the text of which was printed in the report.

After careful consideration of this Bill and of other

communications on the subject which had been placed before them, the committee came to the following conclusions:

1. That the statutory powers with regard to medical education exercised by the Council, and in case of need exercisable by the Privy Council, are sufficient to secure that candidates for medical or dental qualifications shall have received adequate practical instruction in the administration of aneathetics, and that the Council has already taken steps, and is prepared to take further steps, to secure the end in view.

2. That it is inexpedient to provide by Act of Parliament that evidence of such instruction should be raised to the status of an "additional qualification," without which no person shall be entitled to registration.

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3. That in the exercise of its statutory powers with regard to medical education the Council is enabled to take account from time to time of the advances of medical science in regard to the methods of procuring anæsthesis, and to vary its recommendations to the licensing loadies accordingly, in a manner which would not be practicable under the terms of the proposed Bill, should that pass into law.

4. That it is desirable in the public interest that the administration of anæsthetics for the purpose of inducing unconsciousness or insensibility to pain during medical, surgical, obstetrical, and dental operations or procedures should be restricted by law to duly qualified medical practitioners, due provision being made for the practical instruction of students, and for cases of eme. gency.

5. That having regard to existing conditions it is also desirable in the public interest that duly qualified dental practitioners should be authorised to administer certain specified anæsthetics, such as nitrous oxide gas, for the purpose of inducing unconsciousness or insensibility to pain during dental operations or procedures.

6. That the specification of the anæsthetic substances or drugs which may thus be employed by duly qualified dental practitioners during dental operations or procedures should be made in a schedule to the proposed Act of Parliament, power being reserved to the Privy Council on the recommendation of the General Medical Council as the authority charged with the publication of the British Pharmacopeia, to add to or vary the specified list from time to time as occasion arises.

7. That it is expedient in the public interest to provide that the person who administers the anæsthetic for the purpose of inducing unconsclousness during any medical, surgical, or dental operation or procedure, due p

The committee recommended that the foregoing conclusions should be adopted by the Council and transmitted to the Lord President of the Privy Council for his information.

Sir C. BALL seconded.

The motion was agreed to.

The PRESIDENT, in reviewing the conclusions in the report, said that the committee was satisfied that the powers already possessed by the Privy Council were sufficient to allow steps to be taken from time to time to insure that the medical or dental student should be duly instructed in the practical administration of anæsthetics. Therefore an Act of Parliament on this point was unnecessary. The committee believed that the machinery of the General Medical Council was capable of being adapted from time to time. That was better than an Act of Parliament. Conclusion 4 was an important one. With regard to Conclusion 5, the committee had had some trouble in deciding whether the anæsthetics should be specified. The method of meeting the difficulty which the committee had suggested was to allow the Privy Council, on the recommendation of the General Medical Council, to vary the specified list. Further, he thought that the Council had an interest in seeing that the anæsthetist and the operator should be distinct. The danger was greatly minimised when the anæsthetist had his attention wholly directed to his own duties. Clause 4 of the Anæsthetics Bill laid down that "any registered medical practitioner who gives a certificate of death in the case of any person dying while under the influence of an anæsthetic should be liable, on summary conviction, to a penalty not exceeding five pounds." The committee thought it proper that the Council should protest against the creation of a new offence. If it was desired to deal with this matter he thought that it could be done by a system of notification. The committee considered that it was undesirable for the Council to lay down a definition with regard to the "adequate practical instruction in the administration of anæsthetics" which should be required of

candidates for their medical and dental qualifications. duty of the Council would be discharged in impressing on the licensing bodies the necessity for efficient instruction. Further, the committee thought it highly necessary that dental practitioners should have adequate practical instruction in anæsthetics. He concluded by moving in turn the adoption of the conclusions of the report.

On conclusion 5, Dr. KNOX urged that it should be made perfectly clear that the practical instruction of dental students in the use of anæsthetics was desirable. accordingly moved to add to the conclusion, "and that due provision should be made for the practical instruction of

dental students.' This was agreed to.

All the conclusions were adopted.

Sir C. Ball. remarked that the Anæsthetics Committee had performed admirable work.

Application for Registration.

The Council considered an application for registration by Mr. Alfred Alexander Donald McCabe-Dallas, Lic., Lic. Midwif. 1881, R. Coll. Phys. Irel., a medical practitioner entitled to be registered under the Medical Act (1858), but who neglected to effect such registration until after the "appointed day" (June 30th, 1887), under the Medical Act (1886). The application was duly considered by the English Branch Council on Nov. 24th, 1909, when the following resolution was passed :-

That the Branch Council recommends to the General Council that Mr. Alfred Alexander Donald McCabe-Dallas be registered.

The application was granted.

The End of the Session.

This concluded all the business on the agenda. On the motion of Dr. NORMAN MOORE the President was thanked for his services in the chair. The Council then adjourned until May, 1910.

THE JOHN HERBERT WELLS FUND.

THE following is the fifth list of subscriptions to the John Herbert Wells Fund. Further contributions will be gratefully received by the Earl of Dalhousie and Mr. Julian G. Lousada, honorary secretaries and treasurers of the fund, at 16, Old Broad-street, E.C., or by ourselves at this office:--

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LANCET. THE

LONDON: SATURDAY, DECEMBER 11, 1909.

The General Medical Council: Proposed Legislation on Anæsthetics.

WE complete this week our report of the proceedings of the November session of the General Medical Council, a very brief session this year, extending only over five days. But, as we have frequently pointed out, the work done by the General Medical Council at its public sessions must not be taken as a gauge, for the labours of the numerous committees, as well as the proceedings of the Branch Councils, have to be added to the sum of its industry. The brevity of the session was largely accounted for by the fact that the discussions on the penal cases were not prolonged, a fact of which the treasurer of the Council must be profoundly glad, for it is in the necessity to make thorough inquiry into all such cases that the risk to the funds of the Council lies. Two matters of outstanding importance were, however, dealt with by the Council in its short session-viz., the arrangement of the subjects of the medical curriculum, and the proposed legislation on the administration of anæsthetics. regard to the first matter we need only record the decision at which the Council arrived, inasmuch as the various preliminary proceedings have been recently summarised in our columns in a series of articles, while the actual debate upon what is known as the "block system" will be found fully reported in our columns this week and last week. The net result of a most interesting debate was summed up in a resolution moved by Sir HENRY MORRIS, that the regulations apportioning the student's time between preliminary and final subjects should be so framed as to ensure that the study of the final group of subjects should extend over not less than two years after the passing of the examination in anatomy and physiology. It will thus be seen that the principle of the "block" was at length decided upon, the only alteration in Sir HENRY MORRIS'S resolution being that the two years were later defined as 24 months.

The attitude of the General Medical Council upon the proposals for legislation with regard to anæsthetics was very clear. The Anæsthetics Committee of the Council, after careful consideration of the proposals for legislation, came to the definite and, if we may say so respectfully, adroit conclusions which will be found fully printed on page 1754 of this issue of THE LANCET. These conclusions were adopted by the Council and have been transmitted to the Privy Council for its information, while the Departmental Committee of the Home Office which is now sitting to consider the Coroners Acts, and which has the whole question of

The meaning of the conclusions which have been adopted by the General Medical Council is that the Council approves of legislation on the administration of anæsthetics in certain directions, although it expresses confidence in its own statutory powers with regard to medical education as being sufficient to secure that candidates for medical or dental qualifications shall receive adequate practical instruction in the administration of anæsthetics. The important things are that the Council has endorsed the following findings of its Anæsthetics Committee :-

(4) That it is desirable in the public interest that the administration of anæsthetics for the purpose of inducing unconsciousness or insensibility to pain during medical, surgical, obstetrical, and dental operations or procedures should be restricted by law to duly qualified medical practitioners, due provision being made for the practical instruction of students, and for cases of emergency.

(7) That it is expedient in the public interest to provide that the person who administers the anæsthetic for the purpose of inducing unconsciousness during any medical, surgical, or dental operation or procedure should not be the person who performs the said operation or procedure, due provision being made for cases of emergency.

Upon the point where the greatest discussion has so far arisen -viz., the position of the dentists with regard to the administration of certain specified anæsthetics—the Council approves the conclusion that having regard to existing conditions it is desirable in the public interest that duly qualified dental practitioners should be authorised to administer certain specified anæsthetics, such as nitrous oxide gas, for the purpose of inducing unconsciousness or insensibility to pain during dental operations or procedures. It was a certainty that the General Medical Council would not support the interference with accepted dental practice that would have been implied in the prohibition of the qualified dentist to use gas. It seems to us that the General Medical Council owes a great debt to its Anæsthetics Committee for a valuable set of conclusions, and is to be congratulated on adopting them in toto. Every single conclusion is not calculated to please everybody, but the General Medical Council meets the position fairly by advocating measures which would maintain the rights of the medical profession as a whole, infringe nowhere those enjoyed by any section of the profession, and furnish distinct degrees of protection to the public.

The Classification of Odours.

LEAST cultivated of all senses perhaps is the sense of smell. There are those who contend that if the subject had received the same attention as have the senses of hearing and sight the study of odours would have reached the scientific plane of optics and acoustics. We classify sounds and colours easily enough, though the methods and results are open to criticism, but we can lay little claim to having set up a scientific division of odours. Is there anything more difficult to describe than a smell? We can say that it is penetrating, persistent, pleasing, or offensive, as the case may be, but these are all adjectives which do not necessarily single out or enable anyone to recognise the particular smell which we wish to describe. new legislation upon anæsthetics before it, will also benefit In our difficulty we dismiss the description of a smell by saying that "it is peculiar." Whilst that is true it conveys nothing, as is pointed out in a suggestive letter in another column from Mr. Morris J. WILLIAMS. The most that we can say is that a certain odour recalls the odour of another substance with which everybody is familiar. We set up, in a word, an odd assortment of smelling substances with which comparisons may be made. We must refer to a well-known smell before we can give any idea of one that is fresh to us. It reminds us, we constantly say when asked to give a description of a novel odour, of roses, of cinnamon, of rotten eggs, of camphor, of earth, of pine, of pigs, of sweat, and so forth, according to the impression which we receive. Such a description can only appeal of course to the person to whom these odours are familiar. But it would be difficult to convey the slightest idea of the smell of (say) the skunk to anyone who has not encountered the emanation of that animal, though once it has been experienced it can never be forgotten, so strong is the impression which it leaves. A sickening sweet repulsive odour is almost all we can say of it, unless we add that it is partly like bad eggs and partly like valeric acid (osmidrosis), when we at once mention a thing which need not be more familiar than the odours of the skunk. It is different in the case of colour, for no one is bound to say, to quote an example, that the sun went down the colour of yelk of eggs or of geranium blossom so long as the distinctive terms yellow and red are understood, while any shade of yellow or red can probably be compared to the colour of some familiar object like the lemon, the brick, or the tomato. The fact is that the classification of smells is rude and unscientific. There are scents more or less attractive and there are stinks repulsive, and between the lines of that broad differentiation we stand nearly still. Further, there is the difficulty that, broad as the differentiation is, there is not always a consensus of opinion to be found as to whether an odour is pleasant or offensive. The odour of turpentine, for example, is acceptable to some persons, but excites disgust in others, and individuals are known to whom such odours as those of carbon disulphide or of sulphuretted hydrogen are a delight. Such an appreciation, however, having regard to the opinions of the majority, is probably based on a perverted instinct, but who in this matter can decide what is the normal impression? It is reasonable to suppose, further, that smells are subjects of favouritism, just as are sounds and colours and their combinations.

That the sense of smell is capable of extreme refinement is evident from the perfection which it reaches in some animals, of which the dog may be quoted as a familiar example. There can be little doubt that certain animals have a remarkable power of differentiation and recognition by their keen sense of smell, but it is questionable whether the same sense, with exceptions possibly, is ever developed so highly in the human being. It is, in fact, not improbable that in the human individual the sense of smell is, as a rule, a dull one, and possibly incapable, therefore, of the scientific differentiation which has taken place in the case of hearing and sight. Nevertheless, certain attempts have been made to place the sense of smell

in the same category as the senses of hearing and seeing by assuming that odours affect the nervous system by special vibrations just as the ether vibrations effect the eye, and air vibrations affect the ear. Perfumers, for example, speak of a gamut of odours, placing the name of the odour in a position corresponding to its effect upon the olfactory sense, in the order of its amplitude of vibration; and many years ago Dr. Shptimus Piesse set out a series of odours in parallel with a musical scale, and showed how it was possible to make a bouquet correspond to a chord. Thus, "if a perfumer desires to make a bouquet from primitive odours he must take," he said, "such odours as chord together; the perfume will then be harmonious." According to this classification he found that the chord, say, G G D (bass) F G B (treble), gave a bouquet of chord G, pergelaria corresponding to the first G in the bass, sweet-pea to the next G, violet to D, tuberose to F, orange flower to G, and southernwood to B, the comparison of odour to note being made by a personal estimation of the amplitude of vibrations. Similarly a bouquet of chord C was made up of santal, geranium, acacia, orange flower, and camphor (C C E G C), and a bouquet of chord F consisted of musk (F), rose (C), tuberose (F), tonquin bean (A), camphor (C), and jonquil (F). It is evident that this classification suggests octaves of odours, and we are reminded of the law of octaves in light, sound, and chemistry. In Dr. PIESSE'S gamut of odours we find, for example, at the lower end of the scale the note B corresponding to clove, and the octave B above gives stocks and pinks, and the higher octave B cinnamon. The keen sense of smell will recognise a similarity of odours here, just as the musician recognises the musical octaves. Other examples of analogy could be given which show an interesting relationship where a keen faculty of recognition exists between odours and sounds, and we are led to wonder how far we are merely the subjects of vibrations produced in different ways which now affect the eye, now the ear, and now the nose, and so forth. Why, however, some vibrations soothe while others irritate it is difficult to say, but certain it is that sounds can be bad as can colours and odours. There are discords and harmonies, beauty and ugliness, stinks and fragrance. It is just possible that, by the further study of odours, they may ultimately receive some such scientific divisions as do sounds and colours. Mr. WILLIAMS, whose communication has prompted these observations, makes a suggestion which may afford a useful starting point. H proposes a preliminary classification of the primary odours, selecting such bodies as (1) ammonia; (2) sulphuretted hydrogen; (3) bromine; (4) valeric acid (5) ether; (6) menthol; (7) camphor; (8) artificial musk; and (9) nitro-benzol. Assuming that the category and its members are well chosen, the next thing to be done would be to find a name for each of these odours, apart from the names of the substances. This name would then be generic in character and capable of being applied to a number of substances, just as red is applied as the distinguishing colour of sunset, fire, bricks, blood, and so forth. On the ready acceptance by the unscientific public of these generic names—that is, on a widespread feeling that each generic name characterises naturally the class of smell to which it is attached, would popular adoption of such a scheme depend.

The difficulties of making a classification of odours are thus seen to be great. We know how the vibrations of sound and light are set up and how they are conveyed, but in the case of odours we do not know with any certainty the origin of the wave or the method of its transmission. Apparently, the presence of oxygen or air seems to be necessary before the sensation of smell can be experienced, and the same process of communication, whatever it may be, is probably at work when the palate is respon-There is room here for much research, and the subject is of considerable practical importance, since so many of the creature comforts of this life obtain a valuation based upon their æsthetic qualities which are chiefly that of flavour and aroma. A penny cigar may be all genuine tobacco, but it does not, as a rule, afford the same degree of gratification to a smoker that an expensive Havana cigar does, nor does the haddock give the palate the same satisfaction as the turbot. Æsthetically speaking, calves' head is an appalling substitute for turtle, but from a dietetic point of view there is probably little difference between them. Similarly, elegance is sought after in wines, but there is very little difference between the chemical composition of a vin ordinaire and a Château Lafite. We pay much for a satisfactory appeal to the eye, the ear, the nose, and the palate, and all medical men know that to do so is good sense and not sensuality. A classification of odours would be of distinct value to medical men both in debate among themselves and in their relations with their patients.

Medical Parliamentarians.

ALTHOUGH we are able to disassociate ourselves entirely from party politics, it is our duty to follow with the closest attention the doings both of the House of Lords and the House of Commons. Those Parliamentary proceedings which immediately concern the physical and moral health of our countrymen or directly affect the welfare of the medical profession may seem to interest us most deeply, but such are the ramifications of medicine to-day that there is hardly a Bill brought forward or a policy advocated in which some medical bearing may not be detected, in which medical interests are not involved. It is therefore desirable that a certain number of medical men should be returned to the House of Commons, so as to keep the legislature informed of the right scientific view on an enormous number of points, and there can be no fear that the return of such men would lead to any infringement of popular rights in deference to the views of special pleaders. A medical Member of Parliament, though the most accomplished speaker in the profession, and even in the House, can hardly hope that he will find the opportunity to persuade the legislature immediately to proceed penally against unqualified practice or to pass hastily any other measure which might have the complexion of class protection. But his presence can make itself felt, as can the influence of all earnest medical parliamentarians. By work on Committees, by personal intercourse with their of the road, he neglects to look to his right as well, he

fellow Members, and by availing themselves of proper opportunity of debate, medical Members of Parliament may diffuse a knowledge of the high ideals of preventive medicine and of the real public danger of unlicensed quackery in such a manner that men of party influence, and even Cabinet Ministers, may feel constrained to adopt at least something of the medical point of view. It cannot be doubted that the position of the President of the Local Government Board, acting as he does as the Minister of Health, is considerably strengthened by the presence of a few medical men in the House, especially when he finds it his duty to legislate against some insanitary but profitable trade. This being the case, a medical candidate for Parliament, if in other respects than in his calling he be the right sort of man, is always worthy of the suffrages of medical practitioners, and the question has to be considered seriously whether such a candidate might not well be supported by his professional brethren irrespective of his political party, and whether, provided he would give them a pledge to use his best endeavours in the House of Commons in the cause of medicine and of public health, he might not be frankly adopted by medical men. We do not put forward this view with any great approval, for medical men are citizens first and practitioners afterwards. To ask a voter, because he is a medical man, to give his vote to a medical candidate who thinks completely differently from himself on important constitutional questions is unreasonable. It can be claimed for medical men that their ideals are progressive and altruistic in a way that the ideals of no other professions are, upon which it follows that if a medical candidate is representative of professional views he is a good candidate whichever side of the House he may elect to sit. It does not follow that a voter having strong political convictions should sink them to return a medical candidate, for the general considerations must come before the particular. But where a medical man's vote as a citizen can assist a medical candidate especial energy should be put into the process.

Annotations.

"Ne quid nimis."

MOTOR ACCIDENTS IN LONDON.

WE observe that recently a medical man, Dr. T. Woulfe Flanagan, was publicly thanked by the magistrate sitting at Bow-street police court for coming forward to give evidence in a case in which the driver of a taxicab had knocked down two road-cleaners by driving recklessly on the wrong side of a street refuge. A fine of £3 was inflicted on the defendant as, apparently, there had been no previous complaint against him, and a like punishment was awarded to another man who was convicted and sentenced on the same day and by the same magistrate for a similar offence. The danger arising from drivers, and not infrequently from cyclists, passing on the wrong side of street refuges in order to save themselves from delay is obvious. The foot-passenger who in crossing a street has reached a refuge instinctively looks to the left, the side from which all traffic moving along the part of the road yet to be traversed should come, but if, trusting to drivers obeying the rule

may at any time be run into by a comparatively noiseless vehicle the driver of which is in too great a hurry to adhere to his proper course. In the case in which Dr. Woulfe Flanagan gave evidence the injured men were not ordinary pedestrians, and were not severely injured, but Mr. Curtis Bennett, in commenting on the risk attendant upon passing on the wrong side of refuges, expressed himself as fully alive to the prevalence of the practice, and announced his intention to deal severely with those indulging in it if it were not discontinued. The danger is increased by the ease with which a motor vehicle can be deflected from its course without slackening its speed, a characteristic which renders it a far greater source of risk to the public than a horsed carriage or cart, and this may be observed not only when a motor-car is dodging in and out of the traffic at a street refuge, but even more conspicuously when it turns a corner. Reckless and dangerous hurrying round corners may be seen at almost every spot in London where streets intersect, er lead into, one another. To take a well-known turning as an instance, anyone who walks up the north side of Conduitstreet on his way from Bond-street to Regent-street will find as he prepares to cross the end of George-street that motorcabs and cars travelling towards Hanover-square from Bondstreet are tempted by the angle, which happens to be greater than a right angle, to negotiate it at full speed closely shaving the kerbstone. It is quite easy and perfectly safe for them to do so, but extremely dangerous to the unwary pedestrian who may not have looked behind him and is unable to check himself on the edge of the pavement. The mention of Hanover-square reminds us that a fatal accident took place there on the night of Nov. 26th. The verdict of a coroner's jury has since exonerated from blame the driver of the taxicab which ran over and killed Mr. W. H. Stallard, a solicitor, and we therefore only refer to the death as illustrating the danger of this class of traffic generally and because on this occasion also a medical man, Dr. David Walsh, gave evidence as an eye-witness of the occurrence. It has additional appositeness, because at the inquest Dr. Walsh informed the coroner's jury that his own care in crossing where the deceased met his death was in a measure due to the fact that a few weeks previously he had himself been run over, with the result that he was still lame. His experience of personal injury and of witnessing the death of another within a few weeks from the same cause, combined with the statistics published recently by the police with regard to street accidents and commented upon widely in the newspapers, should tend to rouse public opinion to the serious and increasing danger from the abuse of their privileges by motor-car drivers. If a census of accident cases due to this cause now being treated in the London hospitals were to be taken it would add some instructive figures. On a recent date, we are informed, no less than nine beds were occupied at St. George's Hospital alone by victims of the horseless carriage, while six more were to be found in the wards at Charing Cross Hospital. It is for the public to protect itself in the matter, and one way in which it can do so is to follow Dr. Woulfe Flanagan's example and to aid the police in their difficult duty of regulating the traffic. We often see charges of all kinds in our police courts criticised as "resting on police evidence only," as if this showed that they were of a trivial character, or had escaped the notice of any but professional witnesses. Members of the public whose position would carry weight before the magistrate are sometimes those most ready to blame both magistrates and police for affording inadequate protection to such as themselves; yet they are the least willing to spend their doubtless valuable time in rendering to the executive that support which it would most gladly welcome. It was mentioned that at the hearing of the first case commented on above the of England. The many points of resemblance between the

Highways Protection League was represented by counsel watching the case, and the matter is one in which such an organisation can do much by stimulating the energy and public spirit of individuals.

THE HUXLEY MEMORIAL LECTURE.

Professor Bateson, in his address on Mendelian Heredity which he delivered on Dec. 1st last at Birmingham as the Huxley Memorial Lecture, said that on such an occasion it was natural to look back on the part which Huxley had played in the development of the theory of evolution. Though an enthusiastic advocate of Darwin's views Huxley had always retained an article of faith excluded from the orthodox Darwinian creed. To Huxley it had appeared that the importance of specific and discontinuous variationmutation, as it is now called-must be far greater than Darwin was disposed to admit. When, some years ago, Professor Bateson published evidence tending to support the mutation theory, it had been no small encouragement amongst much hostility to receive from Huxley a letter of sympathetic approval. And now, said the lecturer, time had provided abundant material justifying Huxley's expectation-indeed, the doctrine of mutation had now more to fear from its uncritical adherents than from direct opposition. The change had come about chiefly through the recognition of Mendel's work and the perception of the processes of heredity and variation thus acquired. Posterity would undoubtedly regard Mendel's discovery as one of the greatest contributions ever made to man's knowledge of nature. The essential fact of Mendelism was that the forms and qualities of living things can in numberless examples be proved to depend on the presence of definite elements or factors, and that those factors are distributed among the germ-cells according to predicable systems, which could be illustrated by reference to a variety of phenomena in plants, animals, and man. From a study of the peculiar mode of transmission of colour-blindness and other "sex-limited" conditions, the conclusion was reached that the distinction between the sexes was determined by Mendelian factors distributed on a definite system. In another respect Mendelism bore on Huxley's views. Huxley had often pointed out that the sterility of hybrids was a serious difficulty in the way of Darwin's theory. The Mendelian method was beginning to show the nature of this sterility, and further inquiry would perhaps completely elucidate it. In certain cases it was possible to suggest the chemical nature of Mendelian factors with some confidence. Professor Bateson's general conclusion that with the progress of this analysis the piological sciences were passing into a new phase will be opposed by no one. His word of warning against the too ready acceptance of violent generalisation made by enthusiasts will be noted. for any attitude of reasonable criticism is sometimes described by Mendelians as fossilised devotion to a scientific scheme laid down by Darwin.

DISCOVERY OF TASMANIAN SKULLS.

Professor R. J. A. Berry, of Melbourne University, and Dr. A. W. D. Robertson have made a very remarkable and unexpected discovery of skulls belonging to native Tasmanians. Some 33 years ago "Lalla Rookh," the last of her race, died, and with her passed out of existence not only the most primitive civilisation but the most primitively constituted people that anthropologists have any knowledge of. Last year Sir William Turner made an inventory of all the remains known of this race and was able to compile a list of 79 skulls, by far the richest collestion being in the museum of the Royal College of Surgeons remarkable people who inhabited Europe in palseolithic times—two additional examples of which have been recently discovered in France and largely discussed in the popular press—and the native Tasmanians have made clear to anthropologists that much can be learned of the very earliest inhabitants of Europe by studying the native races of Australia. Hence the importance of Professor Berry's success in collecting from various sources—former burial grounds, private collections, and museums—42 additional Tasmanian skulls, all of which he has good reason to regard as authentic. The description of his collection will occupy some time, but there can be no doubt that the publication of his investigations will provide a valuable welcome addition to our knowledge of a most interesting past race.

RESEARCH DEFENCE SOCIETY.

THE work of this society is now being widely extended by the formation of branch societies in all parts of the kingdom. The Brighton and Sussex branch have arranged for a public meeting to be held on Monday next, Dec. 13th. at 3 o'clock in the Royal Pavilion, Brighton. Among the speakers will be the Earl of Cromer, President of the Society, and Sir Arthur Conan Dovle, President of the Brighton and Sussex branch. The patrons of this branch are the Duke of Devonshire and Lord Leconfield, and the branch has already a large number of members. We sincerely hope that the work of the Research Defence Society will continue to be well supported by members of the medical profession. The society has already more than 2700 members and more than 100 associates, and is fulfilling a very useful purpose in bringing about a better condition of public opinion as to the objects and the character of experiments on animals, and as to the conditions under which they are made in this country, under the restrictions of the Act.

ERYTHEMA DUE TO THE APPLICATION OF COWS' MILK.

In the Yale Medical Journal for November Dr. H. M. Steele has reported a case in which the application of cows' milk to the infant skin produced a curious effect. The patient was a female child, aged 6 months. She was a twin whose sister had died from marasmus in the fourth month. She was nursed by the mother for six months, during which she did well except for an attack of mastitis and otitis media in the fifth month, from which she completely recovered. As the mother was worn out from the twin sister's illness and death and had two attacks of influenza, this child was partially weaned, although she was doing well and had gained 12 ounces in the preceding two weeks. She was put on modified fresh cows' milk, which was obtained from a model dairy. After taking about an ounce a bright red rash appeared about the mouth, and on the cheeks where some of the milk had been accidentally spilled. little later she vomited, but she seemed ill in no other way, and the rash disappeared within an hour. Her father took some milk from the bottle in which the milk was delivered and rubbed it on the baby's forehead. The same rash was produced in about the same time, but lasted only half an hour. Dr. Steele had the milk analysed, but received the report that its constituents were in the proper proportion and that it contained no preservatives. On his own skin it produced no effect and inquiry among many patients taking the same milk did not show any similar case. On the following day the rash was produced both by application of the same milk and of milk from another dairy, but not by the mother's milk. The rash was not produced by ingestion of milk, but only when the milk was spilled and came in contact with the face. There was only slight regurgitation of milk on this day. The lactose was

removed from the modified milk mixture, the milk was peptonised, and finally was boiled, but none of these changes made the slightest difference in the production of the rash. The rash at first appeared with perfect regularity about 15 minutes after milk touched the skin, and lasted at first an hour. Then its duration gradually diminished until after 21 days it ceased to appear. The rashwas bright red and not raised. Sometimes it was sharply circumscribed; at others it faded with a pink edge to the normal skin. It corresponded exactly to the area touched by the milk. It never resembled urticaria or appeared tocause itching. Dr. Steele does not attempt to explain thisourious effect of the application of milk to the skin. It evidently was due to idiosyncrasy to some normal ingredient of the milk. It could not have been due to an abnormal ingredient, for cow's milk from any source produced it. The gradual acquisition of immunity seems to us of considerable interest, and due to the ingestion of the milk. Evidently the administration of the offending ingredient gradually produced tolerance. Dr. A. T. Schofield has recorded in our columns a case of idiosyncrasy to white of egg in which tolerance was similarly induced.1 The patient was a boy, aged 13 years, who could not eat egg in any form without the production of salivation and profuse urticaria. He was given doses of egg so minute that they produced no symptoms, and the dose was gradually increased until complete tolerance was established to eggs in any quantity. Dr. Steele's case differs from thisin the fact that the idiosyncrasy was a local reaction due tolocal application, not a general reaction due to internal administration. Idiosyncrasy of the former type is much the rarer. Some years ago we discussed a peculiar eruption due to contact of arterial blood with the skin during operations described by Mr. Marmaduke Sheild, which he termed "blood erythema." We concluded that the erythema was an example of idiosyncrasy and was similar to the urticaria. produced in some persons by the application of yelk of egg to the skin. The analogy of blood erythema with the milk erythema is obvious.

NOVEMBER AT HOME AND ABROAD.

Ir the figures given below are compared with those for November which were published in THE LANCET a year ago, it will be seen that at all the places represented in the table except those in Italy the mean temperature was lower than during the corresponding month of 1908. The divergence was considerable nearly everywhere, and at Biarritz it amounted to as much as 8°. In these islands the weather was cold for the time of year and also remarkably dry and sunny, the records of sunshine in many localities being about 50 per cent. above the average, and at a few places in the south of England nearly 100 per cent. above. Such a bright November has not been enjoyed in some parts of the kingdom for at least 30 years. In central Ireland and a large part of Scotland the frost experienced between the 15th and 20th of the month was the most severe ever recorded in November in those localities, and the records go back to nearly 40 years. In the central and eastern counties of Scotland the thermometer exposed on the grass descended to about zero, or a few degrees below it, and at Balmoral the screened instrument four feet above the ground fell to within three degrees of zero. London and England generally were milder than Paris, Berlin, and Brussels, and also less rainy, but, as is usually the case in November, the South of France was milder than the mildest part of the United Kingdom. while the southern half of Italy was milder still. At Malta. Algiers, and Palma the mean temperature was almost

¹ THE LANCET, March 7th, 1908, p. 716. ² THE LANCET, March 20th, 1897, p. 821.

identical with that generally experienced in July and August in the south and south-east of England. Frost occurred on several occasions on the Riviera and at Biarritz, as well as in Italy as far south as Rome, and it is worthy of note that both Nice and Biarritz registered a lower minimum temperature than London, Brighton, and Weymouth. The temperature after sunset was no higher at Nice than at Scilly while at Biarritz and Florence it was lower, but those southern resorts enjoyed a warmer day temperature. especially the case during the first half of the month, when the sheltered thermometer rose to 55° or above almost every day, and on some occasions went to 60° or beyond. At Biarritz there was also a very warm period about the The mean diurnal range of temperature was small generally. At Malta and Lisbon it was no greater than 7°, and, owing to the cold days, only 8° at Berlin. At many places on the shores of the Mediterranean it was rather large, and moderate in the south and south-west of England.

-	Highest temperature.	Lowest temperature.	Mean maximum temperature.	Mean minimum temperature.	Mean temperature for month.	Mean range of temperature.	Number of days with rain.	Total fall in month.
	٥	0		0		0	*	Inches
Scilly	57	36	5 2	42	47.2	10	9	1:36
Jersey	5 8	30	52	40	46:1	12	8	2.09
Torquay	58	32	51	39	44.8	12	6	1.08
Sandown, I.W	57	29	50	3 8	43.9	12	1 : 7	1.35
Weymouth	58	30	49	39	44.1	10	3	0.77
Bournemouth	57	28	49	36	42.7	13	4	0.72
Brighton	57	30	49	37	42.8	12	4	1.40
Bath	57	25	4 8	33	40.5	15	5	1.14
Buxton	52	25	44	34	38-9	10	7	1:37
Harrogate	55	25	45	35	40.2	10	8	1.10
Manchester	55	27	46	36	41.3	10	8	1.94
Nottingham	56	27	46	3 5	40.7	11	3	0.52
London	55	30	48	37	42.2	. 11	4	0.66
Paris	56	23	45	33	39.1	12	8	1.19
Berlin	52	21	41	33	37.2	8	15	3.63
Brussels	5 5	20	4 5	33	39-1	12	17	1.83
Nice	66	23	56	42	48.7	14	6	2.57
Biarritz	6 8	28	55	41	48 1	14	10	3.66
Florence	68	28	55	40	47:6	15	12	3-70
Rome	70	30	59	47	53.0	12	9	4.80
Naples	69	35	60	50	54.8	10	13	4.01
Palermo	74	3 8	67	53	59.8	14	13	4.57
Malta	74	49	67	60	63.5	7	13	2.95
Palma (Majorca)	72	39	65	50	57:3	15	11	
Algiers	81	46	69	57	63.0	12	10	1.58
Lisbon	68	41	6 0	53	57.6	7	18	9.22

^{*} A day with at least 0.04 inch.

MOUTH DISINFECTION AND DIPHTHERIA.

RECENTLY we drew attention to the importance of mouth disinfection. This need is particularly felt in ships where men live more closely in association with one another than they do anywhere else. Special attention is given to this risk, we learn by recent publications, in the American and German navies. Dr. J. D. Gatewood in his recent work on "Naval Hygiene," mentions this risk in relation to syphilis, tuberculosis, diphtheria, influenza, pneumonia, measles, enumps, and scarlet fever. There is a special source of danger in the American navy, as drinking cups, used by all, are attached to the ordinary drinking tanks on the living decks of their ships. To obviate risk some

of their ships keep these drinking cups lying in a formalin solution, while others have adopted an expensive mechanical device to secure that men shall always drink from running water. In the last sanitary report of the German navy 24 cases of diphtheria are reported, all but 10 of them isolated cases. These 10 occurred in certain messes in a training ship. The patients were at once removed, their plates, knives and forks, and their clothing disinfected. Still cases continued to occur. It appeared likely that the boys who returned from hospital were, in spite of careful mouth disinfection in hospital for a week after recovery, still "carriers," and that they must be infecting the mess utensils. It was decided regularly to boil these mess utensils and to make all members of these messes gargle daily, under supervision, with peroxide of hydrogen. The effect, we learn, was striking—the epidemic ceased.

THE STANDARDISATION OF DISINFECTANTS.

WE have received a number of communications from manufacturers of disinfectants and others referring to the report of our Commissioners on "The Standardisation of Disinfectants" which appeared in the issues of THE LANCET of Nov. 13th, 20th, and 27th respectively. We, of course, welcome any comments upon our Commissioners' work from those who possess either a theoretical or a practical knowledge of the subject, our single concern being to arrive at the facts of the case. We have handed the various documents to our Commissioners, who, we hope, will deal with them shortly.

FRACTURES OF THE CLAVICLE.

An immense amount of ingenuity has been expended in devising methods of treatment for fractures of the clavicle, and Gurlt has recorded some 70 different methods. The mere fact that so many devices have been invented is in itself sufficient proof that the object to be attained is difficult of realisation and it also casts doubt on the efficiency of any of the methods employed. The latest candidate for adoption has been brought forward by Dr. W. F. Westmoreland of Atlanta, Georgia. In the September number of the International Journal of Surgery he points out that the clavicle is peculiarly liable to fracture, more than 50 per cent. of a long series of fractures being fractures of this bone. The shape of the clavicle appears to be specially intended to give it elasticity, but the frequency with which the bone is broken shows that this elasticity is hardly sufficient for the purpose, while this same frequency causes us to apologise for recapitulating in the interests of clearness the well-known story of such fractures. In the very large majority of the fractures of the clavicle the injury is produced by indirect violence, the bone breaking about the middle at the junction of the two curves. The direction of the fracture is nearly always oblique, and in the more frequent forms the outer end of the sternal fragment is tilted up and overrides the inner end of the acromial fragment which is displaced inwards, giving rise to very definite shortening. Sometimes the fragments do not separate, the broken ends being turned slightly upwards and backwards so that an angle is formed at the seat of fracture. At the present time Sayre's dressing or some modification of it is the most popular treatment, but it cannot be said to be free from objections, and pain, pressure, and irritation of the skin are the chief. Dr. Westmoreland considers that in Sayre's methods the fracture is rarely reduced, and even when reduction is effected he believes the fragments slip while the dressing is being applied, and even if the reduction has been carried out and the dressing accurately applied in a few days he tells us that displacement occurs anew. Most of the text-books on surgery suggest that

the best and most cosmetic result is attainable by keeping the patient in bed and allowing the arm to fall backwards. We agree with Dr. Westmoreland that such a plan of treatment must be very difficult to carry out, for few people will submit to complete confinement to bed for such an injury, even if the reward be the healing of a fracture without deformity. The method advocated by Dr. Westmoreland is this. The patient is laid on a table flat on his back, the arm lying comfortably by the side; if allowed to remain in this position for even a few minutes the fracture usually reduces itself. The patient is then drawn over the end of the table until the scapula clears it, the patient's head being supported by one hand of an assistant and the back by the other. If the fracture is even now not reduced the arm is slightly abducted and gently pushed a little towards the head and the acromion process is pushed back approximating the scapulæ. This, he claims, always reduces the fracture. With the patient in this position a plaster-of-Paris splint is applied. Before the patient is placed upon the table a closely fitting vest is put on and over it the plaster bandage is wound. The plaster splint should come well down over the ribs so as to support the shoulder without the edge of the plaster on the opposite side of the body pressing into the ribs, which will happen if the body part of the splint is too short. The position of the arm of the injured side is immaterial, but it is better to abduct the arm just enough to allow the bandage to be passed easily under the axilla. Dr. Westmoreland has treated by this method 16 patients, and none has complained of any discomfort, though five of them were sent to him on account of their inability to wear Sayre's dressing. With this splint on children may run and play about as much as they like. The method seems to be deserving of trial.

AN OUTBREAK OF JAUNDICE WITH SYMPTOMS OF GASTRO-INTESTINAL CATARRH.

THE occurrence of jaundice with fever and gastro-intestinal disturbances in a number of persons at the same time is now well known. It presents several types, varying from simple catarrhal jaundice with fever to the most severe forms of icterus with prostration, acute intoxication, nephritis, destruction of the liver, and death. It appears to be due to an infection of the gastro-intestinal tract, possibly combined with infection of the bile-passages and even of the liver. Its bacteriology is imperfectly known. In the Johns Hopkins Hospital Bulletin for October Professor Lewellys F. Barker and Dr. F. J. Sladen have reported a small outbreak which occurred in Baltimore city jail and affected six out of 700 prisoners. Their ages varied from 21 to 29 years. The first patient was taken ill on Nov. 26th with a chill and vomiting. Headache was felt next morning and persisted for a week. During this time he suffered from pain in the abdomen, calves, and hips. Jaundice did not appear until the sixth day and the stools then became acholic and frequent. The second patient was taken ill on Dec. 1st, the third and fourth on Dec. 3rd, the fifth on Dec. 5th, and the sixth on Dec. 9th. The onset was sudden, with chill and headache in three cases. Severe muscular pains occurred in three cases. Nausea, vomiting, diarrhoa, and abdominal pain occurred separately or in combination at one time or other. The jaundice was obstructive in type and appeared on the second, fifth, sixth, and seventh days respectively in four of the cases and on the eighth day in two cases. The liver was enlarged and in some cases the spleen also. Leucocytosis was present and in one case was as high as 23,200; polymorphonuclear neutrophiles predominated. The only other abnormal condition found in the blood was bile in the plasma-Cultures were made from the stools on agar agar, but showed only the bacillus coli and the ordinary intestinal flora. On picric-acid-brilliant-green agar small opalescent colonies were

obtained in the time allotted by Conradi to the typhoid and paratyphoid bacillus, but they resembled in cultural characters the colon bacillus. Cultures made from the blood yielded no growth. The blood serum was examined for specific agglutinins; in all cases negative results were obtained with the typhoid bacillus, but positive with the paratyphoid. Some writers depreciate the value of agglutination in this disease on account of the presence of bile in the blood, to which they attribute the phenomenon. However, Conradi has recently emphasised the fact that bile does not agglutinate the typhoid or paratyphoid bacillus. Careful control experiments confirmed the conclusion that specific agglutinins were present in these cases. The patients were quartered within the same walls, but their cells were well separated. Five of them ate in the same dining-room. Evidently the source of infection was the food or the drinking water. No particular article of food was incriminated, but the meat was suspected, as many outbreaks of meat poisoning appear to be due to gastro-enteritis produced by the bacillus paratyphosus. In 1886 Weil of Heidelberg first described this form of jaundice, to which his name has been attached by the Germans, who considered it a separate clinical entity, but recent observations point to the conclusion that Weil's disease is only a form of a more general icterus infectiosus.

LEAD-POISONING FROM A SODA-WATER FOUNTAIN.

In the Boston Medical and Surgical Journal of Nov. 4th Dr. A. L. Patch and Dr. E. W. Taylor have reported a case of lead-poisoning from an unusual source. A Russian Jew, aged 55 years, was admitted into hospital on August 22nd, 1908. His wife and one daughter were ill from leadpoisoning and another daughter had recovered from the disease. For the past two years the patient's health had been failing. Two months before admission he had an attack of severe colic with hæmaturia and became very constipated, and the pain continued. For a few days his mind appeared to be affected; he was forgetful and could not complete his sentences. On admission he was semiconscious and difficult to rouse. There was the lead line on the gums. The knee-jerks were normal and there was no evident paralysis. The skin was pasty and the mucous membranes were pale. The pulse was of low tension. Fine, moist rales were heard at the bases of the lungs. The ankles were slightly ædematous. The urine contained a trace of albumin and a few hyaline and fine granular casts. It was found that 18 months previously the patient bought a second-hand soda-water fountain. In April, 1908, the block-tin piping in the fountain became leaky and he substituted lead piping for it as this was less expensive. In May he began to feel weak and his power of lifting became weaker. In the following month he had crampy pains in the abdomen and limbs. His only drinking water was obtained from the soda-water fountain. Later wrist drop and atrophy of the supraspinati and of the muscles of the arms developed. Some of the atrophied muscles gave the reaction of degeneration. Under potassium jodide and galvanism he recovered. The soda-water in the fountain gave a marked black precipitate with hydrogen sulphide. Careful examination of the patient's house revealed no other source of lead poisoning.

THE excellent collection of English coins, chiefly crown pieces, made by our late editor, Mr. Thomas Wakley, and his numismatic library, were sold by auction at Sotheby's this week. The three days' sale realised £2896.

THREE lectures on Some Problems Relating to the Evolution of the Brain will be delivered in the theatre of the Royal College of Surgeons of England on Dec. 13th, 15th, and 17th, at 5 o'clock each day, by Professor Grafton Elliot Smith, M.A., M.D., Ch. M., F.R.S. (Arris and Gale lecturer).

THE Medical School of King's College Hospital, which was by the King's College, London (Transfer), Act separated from King's College, has been admitted as an independent body to the status of a school of the University of London in the Faculty of Medicine.

A TELEGRAM from the Governor of Mauritius to the Secretary of State for the Colonies reports that 33 cases of plague with 13 deaths occurred in the week ending Dec. 2nd.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

DENTAL JUBILEE DINNER: ADDRESS BY MR. BUTLIN.

A DINNER was given by the President and Council of the Royal College of Surgeons of England at the College, Lincoln's Inn-fields, on Thursday, Dec. 2nd, at which the jubilee of the granting of the Dental Charter to the College was celebrated. Mr. Butlin, who presided, was supported by many members of the Council of the Royal College of Surgeons, and amongst the company were Mr. William Hern, President of the Odontological Section of the Royal Society of Medicine, Mr. H. R. F. Brooks, President of the British Dental Association, Sir Richard Douglas Powell, Mr. R. Bligh Wall, Master of the Society of Apothecaries, Sir William S. Church, Mr. C. S. Tomes, Mr. Morton A. Smale, and the Editors of the British Medical Journal, the Bratish Dental Journal, and The Lancet.

On the plan of the tables was printed the text of the memorial presented to the President and Council of the Royal College of Surgeons on Dec. 13th, 1855, by 18 dental practitioners asking for the institution of a diploma in dental surgery. Other information given on the same paper included the date of the charter enabling the College to grant licences in dental surgery, to wit, Sept. 8th, 1859, the names of the examiners constituting the first and present examination boards in dental surgery, and the extract from the College register showing that on August 1st last there were 2183 licentiates in dental surgery, of whom 14 hold the Fellowship and 238 the Membership of the College. Another interesting document was the menu-card, showing, as it did, a baron of beef as the pièce-de-résistance of an excellent repast.

After the loyal toasts had been given by the PRESIDENT,
Mr. BUTLIN rose to propose "The Dental Profession" in
the following terms: When it came to the knowledge of the Council of this College that 50 years had elapsed since the Dental Charter was granted to the College, it seemed to the members of the Council fit that so important an event should be celebrated. After consideration they came to the conclusion that this might best be done by offering a dinner to the members of the dental profession in the precincts of the We should have liked to entercain all our licentiates of dental surgery, but our space is limited, and we were obliged to confine our invitation to what may be called the representatives of the profession of dentistry. Our idea seems to have commended itself to you, for we have the pleasure of welcoming here a large number of distinguished members of your profession. I wish you, in the name of the Council, a hearty welcome, and I only regret that the time which has passed since the events which led to the granting of the Dental Charter is so long that we have no one here to-night who took such a share in those events as would have entitled him to tell us of them from his own personal re-

At a recent meeting of our Council Sir Henry Morris said that the condition of dentistry 50 years ago was "chaotic," and I am sure he did not use too strong an expression. For a study of the literature of the time has taught me that dentistry was practised by all manner of persons. For instance, the chemists and druggists often

collection.

associated the practice of dentistry with their ordinary business. And Clause LV. of the Medical Act of 1858 places chemists, druggists, and dentists in the same category. Mr. Walter Brindley of Sheffield writes in 1857 (British Journal of Dental Science, i, 223): "For instance, in the last Directory for the town of Sheffield there is a certain practitioner put down as 'brass-turner and dentist.'" And Mr. Donaldson Mackenzie writes to the same journal in 1859 (iii., 151) to tell how, in his travels about England, he had studied the position of dentists, and "found one sexton, one or two delectable specimens of our present system of education, who could not sign their own name, and one doing a tolerable practice who could neither write nor read." In truth, a man might serve a dentist one day in the capacity of servant or mechanic, and might set up as a rival to his master on the following day, provided he were clever enough to persuade the public of his capability. And he was free to advertise himself to what extent he chose. Even then, however, they did things better in that respect in France. For I have come across a delightful specimen of the art (in a letter from Cosmos in the British Journal of Dental Science, iii., 47), which runs as follows: "Grande Maison de Dentition. Mons. et Mad. de S. announce that they set teeth with diamond pivots and stop teeth with emeralds." And they further remind the public that "it is useless to speak much of their new mode of extraction, as the process is entirely by steam, and is consequently the most efficacious of any system practised by other dentists." No wonder that such ill conditions as these moved 18 gentlemen practising dentistry in the year 1855 to meet and consider what could be done to ameliorate them. Their consideration resulted in the composition of a memorial to the President and Council of this College. I have had the memorial printed with the 18 names attached to it, that each one of our guests may possess a copy of it if he pleases. It will be seen that two motives are expressed in the memorial-the condition of dentistry in England and the much better position of dentistry in America. During the last 20 or more years I have often heard the superiority of American dentists vaunted by rich persons in London, and I regarded this as a fashion of modern times, like the determination of such persons to consult fereign specialists in preference to their own specialists. I had no idea that American dentistry had really been so superior to English dentistry before the granting of the Charter. At the present time there is no reason to believe that American dentistry is superior to English dentistry, or that the best English dentists are inferior to the most skilful American dentists. But in 1855 there can be no doubt that America was far ahead of England in the education and position of dentists. The memorial was sent up to the College in December of the year 1855 and was presented to the Council at its meeting in January, 1856. It was referred to a committee of six members of the Council, with Mr. Green as their chairman. In February, 1857, the memorialists addressed a letter to the College asking whether anything, and if so what, was being Mr. Edmund Belfour, the secretary, replied to the effect that the legal advisers of the College had been consulted and had given it as their opinion that it was not competent for the College under its present Charter to do what the memorialists had suggested. It would, therefore, be necessary to apply for a special Charter, and the Council could not do that while legislative measures were before Parliament because they were in conference with, and pledged to, other medical corporations in respect to these

In the course of the next year these legislative measures produced the Medical Act of 1858, in which Clause XLVIII. provided that "It shall, notwithstanding anything herein contained, be lawful for Her Majesty, by Charter, to grant to the Royal College of Surgeons of England power to institute and hold examinations for the purpose of testing the Fitness of Persons to practise as Dentists who may be desirous of being so examined, and to grant Certificates of such Fitness." The earliest possible advantage was taken of this clause, and the Dental Charter was obtained in September, 1859, just 50 years and a few months ago. The first board of examiners—Mr. Lawrence, Mr. Green, and Mr. Arnott for the surgeons; Mr. Thomas Bell, Mr. John Tomes, and Mr. Arnotd Rogers for the dentists—was soon afterwards appointed, and in the following year (1860) the first examinations were held.

In that year no fewer than 111 candidates took the diploma—a remarkable proof of the earnestness of the leaders of the dental profession, for some of those who passed the examination were qualified in medicine and surgery, and some had been leading men in their profession years before the granting of the Charter. The number of those who took the Licence in the first year is the more remarkable when it is remembered that the total number of dentists practising in England at that time was estimated at from 1200 to 1500. The Dental Act, which made qualification as necessary to a dentist as it is to a medical man, was not passed until 1878.

Such is the official account of the transaction, and I would now like you to hear the human side of it. With the exception of the long delay in obtaining the Dental Charter there might seem nothing of interest in relation to the movement. In the minutes of the Council and in the official letters there is no trace of a hostile spirit. But it was far otherwise outside the College walls. no sooner did a number of the rank and file of the dental profession know of the memorial than a meeting was called, speeches were made against the proposal, the independence of the dental profession was affirmed, and an association was formed to which the high-sounding title of College of Dentists was applied. The memorialists, on their part, were not content with what they had already done. They also took counsel with their friends, and, without delay, established the Odontological Society of London, which at this moment forms the Odontological Section of the Royal Society of Medicine. Thus there was on the one side the Odontological Society with the policy of combination with the College of Surgeons; on the other side, the College of Dentists and independence. I think the College of Dentists had, perhaps, the larger number of members, but the society had the very pick of the profession. Its meetings were from the first characterised by high scientific value, and although surgeons occasionally read papers at them, the society contained so many men of ability-many of them qualified in medicine and surgery, and more than one of them a Fellow of the Royal Society—that there was no need of outside help. The College of Dentists, on the other hand, could scarcely boast of one man of high position or distinguished ability among its ranks. But, nothing daunted, it called in outside aid, established courses of lectures, and actually obtained the services of Hulme, Benjamin Ward Richardson (a host in himself), Ecichsen, and Spencer Wells. With the rise and growth of the two parties, there seen arose, also, two organs of the press, the British Journal of Dental Science, which took the part of the Odontological Society and combination with the College, and the Dental Review, which took that of the College of Dentists and independence. They went at it hammer and tongs, and a fine din there was. Every month, when the journals appeared, the sparks flew; and although no bones were, so far as I know, broken, there were furious attacks on reputations, and you may be quite sure that our College was not left out in the cold.

The long period of apparent inaction on the part of the College afforded, as you may suppose, ample opportunity to the shafts of the enemy. The College never intended to do anything or to grant the petition of the Memorialists: it held them in ridicule: the Council were far too proud to be mixed up with the dentists. Such was the burden of the opposition orators and of the Dental Review. The grant of the Charter must therefore, I think, have fallen heavily upon them. I have no doubt that some of the members of the College of Dentists consulted the Review as to the course they were to take; for that journal, in its issue of October, 1859, advises: "Do nothing." 'Then the hybrid Charter will do nothing." 'The College of Surgeons will find their work much too warm to be pleasant, &c. became apparent that the combination party and the surgeons were in deadly earnest, and that the hybrid Charter would do a great deal. Nevertheless, the College of Dentists and the opposition still kept up their tail, and the College of Dentists seemed to me, as I read the articles and communications in the *Dental Review*, to be going quite strong, when, to my astonishment, an extraordinary event occurred. For, on May 4th, 1863, the Odontological Society of London raised its head, opened its mouth, and swallowed the College of Dentists whole, so that no man saw it more. The only effect which this miraculous

performance seems to have produced upon the society was that it swelled considerably from accession to its members, and that it changed the form of its tail, for it became from that time the Odontological Society of Great Britain. I can tell you there was great jubilation that evening. rooms of the society were filled. Mr. Arnold Rogers was there, in spite of illness. Mr. Imrie, the President of the College of Dentists, was there, but not able to make a speech on account of an "affection of his throat," and so his speech was delegated to Mr. Samuel Rymer, who had fought the battle valiantly for independence, but had also been largely instrumental in conducting the negotiations between the society and the College of Dentists to a successful issue. He died only last year. There were congratulations and a great shaking of hands, and that night and in that fashion the opposition came to an end.

Between 1855 and 1860, or nearly within that period, the two great dental hospitals were founded. Two schools of dentistry were established. The Westminster General Dispensary also made arrangements for the teaching of dental students. The dental journals which I have quoted made their first appearance; and I think what must be called the first scientific treatise on dentistry was published from the pen of Mr. John Tomes. In fact, the agitation which led to the granting of the Charter and the establishment of the diploma was so strong that it produced these great results in addition to the Charter. Nor were the provinces behind in this respect. The Dental Dispensary was founded in Birmingham even earlier in the year 1858 than the dental hospitals in London. Liverpool had its dental hospital in 1860, and, where Liverpool stepped, you may be sure Manchester was not far behind. There was another foundation during that period. The Odontological Society was scarcely established when its members began to collect the material for a museum. I cannot associate any name or names with the museum at its origin, but I feel sure that no one here will feel aggrieved if I attach the name of one of our guests to the later development of the collection. I believe all those who know will admit that Mr. J. F. Colyer has had as much as, perhaps more than, any other person to do with making the collection one of the finest, if not the very finest, collections which the world can show. As you all know, it used to be lodged in the rooms of the Royal Society of Medicine in Hanover-square, but it was very little used there, not nearly so much as it deserved.

I need not enter into the history of the negotiations which culminated in its transference to our care on terms of a like kind to those on which we hold the Hunterian Museum. It suffices to say that we have gladly accepted the responsibility of guarding the collection, and that we have prepared for it a large room in the basement. and directly to it. I hope you will presently visit the odontological collection, for, although it is not yet ready for study, the energy of our conservator, Dr. Keith, and the attention of our secretary, Mr. Forrest Cowell, have made it ready for your inspection to-night. The access to the staircase is through the doorway behind the statue of John Hunter, and I would have you pay attention to the statue as you pass it by. The members of the Odontological Society have every cause to be interested in it, for, just fifty years ago, a number of the members of that society clubbed together, and sent a cheque to Mr. South for £50 towards the erection of the statue. All the matters I have referred to are of interest, but they did not quite satisfy my mind. I wanted to know whether any change had taken place in the science of dentistry itself. 50 years ago the advocates of independence based their policy on what they believed to be the actual position of dentistry. "We are clearly, by policy and by practice, a body distinct from Medicine. We are kindred to it, but not of it." So said the Dental Review (i. 20, 1859); and the same year the Medical Times and Gazette wrote (December, 1859): "That dentists may possibly be better for a surgical examination we do not possibly be better for a surgical examination we do not deny; but dentistry is essentially a mechanical art, with which surgeons are not conversant." In order to see whether such views still hold good I made some study of the earlier and later volumes of the Odontological Transactions and found that, although some of the earlier volumes contained papers of wide interest in connexion with the teeth, these were for the most past the work

of surgeons, that the later volumes contain many more communications of this kind, and that they are for the most part furnished by dental surgeons.

[Mr. Butlin proceeded to review the purpose and scope of modern dental literature, showing how it includes an increasing amount of general medical and surgical knowledge having special application to odontology and stomatology. He continued:

From the point of view of an outsider, the teeth seem to me as important in their relation to the health of the individual and of the community as the eye and ear. The early decay of the teeth and the conditions on which it depends in these degenerate times are matters of national importance. The presence of a dental surgeon is of more value to an army in the field than the presence of almost any other specialist. (Mr. Arnold Rogers, F.R.C.S., in his Presidential Address before the Odontological Society in February, 1859, said: "He believed, further, that the day is close at hand when dental surgeons will be brought into requisition in the army, or else that men specially qualified to treat dental diseases will be appointed to battalions." There had already appeared an article in the British Journal of Dental Science, iii., 46, in favour of this course, but "the question naturally arises, where can we obtain a staff of competent dentists, if called for?" &c. In those days the soldier had still "to bite the cartridge.") In truth, a great change has come over dentistry. It is no longer "the mechanical art of dentistry"; it is the art and science of odontology. And this change has been effected in the course of 50 years, by two generations of men. Seeing this change, I asked myself, What are they going to do with it? And I ask you, Gentlemen, What are you going to do with it? You have made odontology one of the great specialties of medicine, and yet the most of you stand outside medicine; in such a manner that I cannot help perceiving that the present position of odontology is a standing menace to medicine, for it presents the remarkable spectacle of a large number of men practising a specialty in medicine who are not qualified in medicine. I speak advisedly when I use these words. And I will give you a reason for them. During the last year in which I was Dean of the Faculty of Medicine of the University of London a proposition was brought before the Faculty to establish degrees in dentistry. It came, as I think, from the Board of Dentistry, and was presented in two forms—the establishment of degrees which should only be given to the holders of M.B., B.S., and of a degree of Bachelor of Dentistry to be given to persons who had not qualified in medicine. I presided over the meeting of the Faculty at which the question was discussed. The second proposition was supported by the surgeons rather than by the dentists, and was attacked by the dental members of the Faculty. The proposition to establish degrees in dentistry was rejected by 16 votes to 13. Shortly afterwards I became a member of the Senate of the University, and I had not been there long before this proposal to establish degrees in dentistry was sent up to the Senate, recommended by the Academic Council. It was nearly passed through the Senate. but was deferred on my motion. Later, it was referred to the Committee of Medical Members of the Senate. If my memory serves me true, nine of us were present at that meeting of the committee. Eight of the nine voted in favour of the degrees, and my vote alone prevented a unanimous recommendation to the Senate. Before the question again came before the Senate I had gained to my view two or three of the medical members, and had been supported by the opinion of some of the leading practitioners of odontology in London. So that when the final discussion took place in the Senate it ended in a resolu-tion, moved by Sir William Collins and seconded by Mr. Butlin, "That the next business be proceeded with." even more shocked at the arguments which were brought forward in favour of establishing university degrees of an inferior class than I was by the proposal itself. Some of them were weak, others of them were wicked.

No, Gentlemen, I am afraid the present position of odontology can only be justified on one of two grounds: that every young man who wishes to practise one of the "ologies' should be permitted to do so without qualifying in medicine and surgery; or -- but I am sure you will not accept thisthat odontology stands on an inferior plane to all the other

one nor the other of these two alternatives, I would suggest in the interest of odontology, in the interest of medicine in its widest sense, and, last but not least, in your own interest, that you should do all that lies in your power to take the next great step forward, and place your specialty on the same lines as, and in equal position to, the other great specialties of medicine.

Mr. Butlin concluded by giving the toast of "The Dental Profession," to which Mr. Hern and Mr. Brooks responded.

Mr. HERN, in replying to the toast of "The Dental Profession," said that he had no doubt been called upon to reply to this toast because the Odontological Section of the Royal Society of Medicine, of which he had the honour to be President, had played such an important part in those early days referred to by the President, when all those efforts were made to bring the dental profession into a solid phalanx. 50 years ago there was no cohesion, no pro-fessional brotherhood, and until the middle of the last century no step had been taken towards cohesion. The 18 memorialists to the College had taken the initiative in that direction, and these early pioneers must be looked upon as being the founders of the dental profession, as well as of the Odontological Society. He referred to the value in the eyes of the public of a qualification granted by such a body as the Royal College of Surgeons rather than that granted by an independent body, but thought that the opponents of the scheme of the Odontological Society and the Royal College of Surgeons had been equally successful in raising the professional status of the dental profession. To his mind the benefits accruing from the institution of the L.D.S. diploma were many: it enhanced the status of the profession, it also increased public confidence, and engendered a feeling of professional brotherhood. When the Royal Society of Medicine in 1907 was in process of formation and the various scientific bodies were being merged, the licentiates in dentistry were considered to have a qualification of their own and were considered not less worthy than other practitioners for entrance to Membership and Fellowship of that body. Dental surgery was then acknowledged as an important branch of the healing art. In conclusion, he paid a tribute to the arrangers of the odontological collection in the Museum, and thanked the College for their hospitality.

Mr. Brooks, in tendering thanks for the kind way in which the toast had been proposed, said that whilst he did not pretend to agree with all that had been said by the President, he was none the less aware of the great benefits which the granting of the charter and the institution of the licence had conferred, and was also sensible of the very distinguished honour which he shared with Mr. Hern in being called upon to speak for the dental profession at so momentous a period in its history as the "jubilee" of the granting of that charter, or as he would express it "the grafting of dentistry upon an advanced stem of surgery." He felt that as time went on and science progressed the dental profession must become more closely allied, or as the President suggested, an integral part of the whole profession of medicine, seeing that their history, training, achievements, and their aims were so closely interwoven. The association which he had the honour to represent was united, in fact absolutely united, upon their fundamental objects-viz., the common good of dentistry and of humanity. With regard to the progress of their science, it had made remarkable advances, and now the State was beginning to realise that there is a national work to do. But perhaps the most significant point of all was the evolution of the ethical idea among practitioners themselves, who had learnt that union meant strength. They would be justified in looking forward to the future with some amount of confidence, and in face of difficulties which had yet to be surmounted he had no fear as to the issue, seeing that the dental profession had the support and sympathy of

the Royal College of Surgeons.

Mr. Tomes, in proposing the toast of "The Royal College of Surgeons of England," said that in order to realise the debt which the dental profession owed to the College of Surgeons it was worth while to consider the state in which the dental profession was at the time before the memorial was sent up to that body, and referred to the part played by his father in the early days before qualification was an essential to practise dentistry. great "ologies" of medicine. If you will have neither the He recalled the fact that it was his father who sketched out the curriculum for dentistry which was adopted by the College, and the foresight which he then showed was evidenced by the fact that it had lasted with the exception of a few minor alterations until the present day and had been adopted by every licensing body in the kingdom. He said that he hoped the idea of autonomy for the dental profession would not arise in the future. He considered it a happy thing that the President of the College (with whom he coupled the toast) should at this moment be Mr. Butlin, on account of his being identified very largely with work on the more serious aspects of oral diseases.

After Mr. BUTLIN had briefly replied, an adjournment was made to the Museum where the odontological collection was inspected and deservedly admired.

SOME CONSIDERATIONS OF MEDICAL EDUCATION.

VII.1

Intricacy of Educational Problems.—One Portal System.— Extension of the Statutory Time of the Curriculum.

RETURNING from consideration of the peculiar position of the London students to the main theme, we see that the difficulties in the medical curriculum have long been recognised by the General Medical Council and by all who have had their attention drawn to the matter through practical interest in the education of the medical student. The brief accounts which have been given of the various proposals for making the educational course of the student practical as well as sufficient for the public needs can hardly have failed to show any who have read them the grave problems which lie ahead, and their intricacy, together with the magnitude of the interests involved, form a sufficient apology for not putting forward any comprehensive scheme for the general reform of a system in which there is so much that is excellent, in which so many of the apparent drawbacks can be actually interpreted as virtues, and in which every situation is shifting and tends to shift more with the general progress of our science. it will be of service to consider the course along which valuable differences might be made in the existing procedure, under the idea that with the disappearance of some admitted evils the formation of a scheme of a comprehensive nature should become possible in the future.

Here we arrive at an inevitable point—the question of the merits of a one-portal system and the probabilities of such a system, with its implied State degree in medicine, ever being instituted. These are matters which have been much discussed in THE LANCET, and in bringing them again to the front it is with the admission that there is nothing new to be said about them, and with the feeling that brevity will be excusable. But only a week ago this scheme was advocated in our columns in a letter from a well-known London consultant surgeon. The "one-portal" system has been desired ardently by most liberal thinkers as doing away with the opportunities that some students may enjoy of entering the medical profession upon easier terms than their fellows. The simple way of securing the one-portal system would be for the State to hold identical examinations in certain capitals and university towns simultaneously and to admit the successful candidates to the Medical Register under the title of M.D., or at least with the clear specification that each man admitted could call himself "Doctor." As far as the public would be concerned all medical men would then be equal, and any favour which a man enjoyed with the public would be due to his work and his character. Appointments would no longer be open only to graduates of certain universities or diplomates of surgery of certain corporations, but of course all honour qualifications would continue to facilitate election for their possessors. Every candidate for a post would then produce, as additional evidence of fitness, any testamurs that

he possessed, but the non-possession of them ought to bar no man from competing, for all men on the Register would be on the Register for the same reason—the State qualification. The London student, whose anomalous position has been considered, working in the splendid clinical field of the metropolitan hospitals with the elaborate scientific environment of a metropolitan medical school, when entering private practice would no longer find himself at a disadvantage, even though he did not avail himself of the University of London. All medical men would be equal in the eye of the public, and the substantial grievance under the present régime, that of two equally well-informed men one has and the other has not an academic right to the popular title of "Doctor, would disappear. But this simple way of making medical education uniform and of avoiding a multiplicity of examinations would probably be opposed by the medical corporations, if not by the universities, and in that case have little chance of becoming law. who preside over the corporations are aware of the difficulties ahead of them owing to the creation of new universities having the power of granting medical degrees, but the corporations have by no means exhausted their educational functions—the vast majority of the medical profession enter that profession through their portals or take their qualifications in addition to their medical degree—and such bodies are not likely to acquiesce in a system which might greatly damage their utility and prestige. governing bodies of the corporations cannot fail to see that their policy in the face of this creation of new universities is to join hands with these and the older universities, as far as they can do so without sacrifice of dignity or breach of trust in respect of their constitutions. In this way the corporations would help the medical faculties of the universities. and the universities would help the diplomates of the corporations, while considerable economy of effort and money ought to be effected by such fusions of interests. possible establishment of relations between the University of London and the English corporations becomes, it will be seen, a matter of vital importance in medical education.

However much we may regret the disappearance of an ideal deeply cherished by some of the soundest medical reformers the scheme of a State degree seems out of the range of practical politics, and we must look elsewhere for a method of dealing comprehensively with admitted defaults.

Two things are certain. If it is granted that the medical student has now more to learn in the time allotted to him than he can master (and this fact is one of the arguments upon which the one-portal system with its simplification of examinations has been based), either this overloaded curriculum must be better defined so that the student shall waste no time and shall not be exposed to great chances of rejection at the hands of a multiplicity of examiners, or the duration of the medical curriculum must be prolonged. In the brief but detailed account which has been given of the many recent debates at the meetings of the Council, having their origin in the discussion of this question or points germane to it, it appears to be admitted on all hands that the curriculum is overloaded, which indeed seems sufficiently proved by the fact that although by statute its duration is five years in practice the average time taken by the student is considerably over six years.

Considering firstly the extension of the curriculum, the tendency towards change in this direction is sufficiently indicated by two things, both of which have been alluded to in these articles. The University of London has definitely extended the statutory time from five years to five and a half which its graduates of medicine must take to obtain degrees. The other point is that the Conjoint Board of the Royal College of Physicians of London and the Royal College of Surgeons of England, which used to count a year's work in the preliminary sciences done at a recognised secondary school as counting for a year's time in the five years curriculum, will now only allow six months for such work to schoolboy students. The action of the University of London is not very likely to be imitated, or at any rate cannot be counted as any promise that all the educational bodies will take the grave step of lengthening the medical curriculum to any appreciable extent, but the departure is significant. It shows the University to be desirous not to make its degrees easier of attainment, while it supports the fact that the curriculum is overloaded. If any general movement in other Universities in imitation of the University of London is expected, it must not be forgotten

¹ Nos. I., II., III., IV., V., and VI. were published in THE LANCET of Oct. 23rd (p. 1232) and 30th (p. 1301), Nov. 13th (p. 1459), 20th (p. 1531), and 27th (p. 1616), and Dec. 4th (p. 1694), 1909, respectively.

that medical students are not recruited on the whole from a wealthy class of the community, while their period of student life is necessarily passed in the large centres where the price of living, given all economy, is none the less high. Nor must it be forgotten that a large proportion of medical men do not make big incomes, so that the compulsory addition of any period whatsoever to the time of studentship is demanding from the student an additional premium for entrance into a profession which does not hold out for him any additional prizes as compensation. And, lastly, the medical education of this country is extremely ill supported by funds, and it is unfair to add to the burdens of those who now carry on this education almost gratuitously. It is understood that a movement has been made in one place with success to secure recognition of a medical school as a technical school with a right to a Government grant. If this principle became common those responsible for the education of medical students might recognise with more complacency an extension of the curriculum. Although the easiest way of all out of the difficulties with which the Education Committee of the General Medical Council is now dealing would be to lengthen the statutory time of the student's course, and although apparently only 13.8 per cent. of the students actually complete their studies within that time, the Council is not likely to insist for the present upon the student's curriculum being longer than five years. The highly interesting debate, which is reported on p. 1750, confirms this view, though the developments of the future may make a difference in the opinion of the Council.

(To be continued.)

THE REPORT ON SCOTLAND OF THE ROYAL COMMISSION ON THE POOR-LAWS AND RELIEF OF DISTRESS.

11.1

THE subject of Poor-law medical relief in Scotland was investigated in 1904 by a departmental committee of the Local Government Board, presided over by Mr. J. Patten MacDougall, C.B. (a member of the recent Commission), and the report of the latter refers its readers to that of the committee for details of the system. The only statutory enactments with regard to Poor-law medical relief in Scotland are to be found in the Poor-law Amendment (Scotland) Act, 1845, by which it is enacted that medical officers must be appointed to poorhouses, to give regular attendance and to be paid a reasonable remuneration therefor, and that out-door medical relief is to be provided "in such manner and to such extent as may seem expedient." This enables a parish council to engage for outdoor relief a medical officer at a salary or to employ a medical practitioner as the occasion arises and to pay him a fee for the service rendered The "Board of Supervision," constituted as a central authority in Poor-law matters in Scotland in 1845, and superseded in its functions by the Local Government Board of Scotland so recently as 1894, was without representation in Parliament and was not liberally endowed with powers over the administration of relief. It was able, however, to obtain from Parliament in 1848, in order to assist in the promotion of an outdoor medical service, an annual grant of £10,000. This grant was increased in 1882 to £20,000, and in 1885, in order to encourage the introduction of trained nursing into poorhouses, the cost of such nursing was made a first charge against it. The medical relief grant was converted into a powerful agency for the improvement of Poor-law medical relief by two conditions attached to participation in it—namely, that there should be a fixed minimum expenditure on medical relief by each parish, to which a grant was made, and that a medical officer should be appointed. It also caused the establishment of a system of trained nursing in poorhouse infirmaries. The above conditions, which originally were beneficial when they were embodied in regulations made by the Board of Supervision, have since been stereotyped by incorporation in the Local Government (Scotland) Act. 1889; and as their relaxation to suit particular cases is often desirable, the amendment of Section 22 of the above Act was advised by the Medical

Relief Committee, whose recommendation is now endorsed by the Commission, the suggestion being that the Local Government Board should be enabled to make rules which would be of a more elastic character. The increase of the medical relief grant is recommended as an alternative for the introduction of the system known as "block grants. Under present conditions, as indicated above, parish councils have a very free hand in the matter of medical outdoor relief, and although the approval of rules for the dispensing and supplying of medicines in poorhouses is one of the powers of the Local Government Board, the Medical Relief Committee found that no such rules had ever been submitted to the Board. As to this, the Commission recommends the giving of powers of initiative to the Board, and advises "that the Local Government Board should be empowered to prescribe from time to time the arrangements necessary for providing the poor with medical assistance and nursing; and that the arrangements for indoor and outdoor medical relief should be periodically inspected on behalf of the Board by a medical inspector.

Indoor Medical Relief.

In the matter of indoor medical relief the Commission finds considerable cause for comment in Scotland. Glasgow only there are Poor-law hospitals erected on sites detached from the general poorhouse. "The great advance in this respect, which dates in England from 1867, can scarcely be said to have begun in Scotland." In other parishes there are well-equipped hospitals or wards suffering, in the Commission's opinion, from their direct connexion with the poorhouse; in others, again, the accommodation is worse; and in some there are no sick wards at all, healthy and sick inmates being mixed up together.

The Commissioners quote from the report of the Medical Relief Committee the statement that the medical officer of the Scottish poorhouse, who appears to be frequently nonresident, does not enjoy the position to which he is entitled, and, as an example, has no voice in the selection, suspension, or dismissal of nurses. The insufficiency of the medical staff when kept, as it often is, at its minimum numerical strength, is condemned.2 Great deficiency is found to exist in the provision of trained nursing in spite of the improvement effected through the agency of the grant. The Commissioners report that they "regret to find that out of 68 poorhouses in Scotland there are still 26 that have no trained nurses. Not only so, but pauper nursing, it appears, is permissible in all Scottish poorhouses." The following conclusions with regard to these conditions are followed by recommendations calculated to provide for their amelioration:

tions calculated to provide for their amelioration:

That, in spite of recent improvements, the provision made by Poorlaw authorities for the treatment of the sick indoor poor is inadequate because the accommodation is in many cases defective; that the sick are not properly classified; that the position of the poorhouse medical officers is administratively anomalous; that in some poorhouses the medical staff is insufficient; that the salaries of the medical officers call for revision; that the nursing staff is in many cases insufficient; and that pauper nursing should be abolished.

That much good would accrue if poorhouse hospitals were opened for purposes of clinical instruction. That there is an increasing demand on the part of the general population for hospital treatment in sickness; that the voluntary hospitals are unable to cope with the demand; that further hospital accommodation is necessary in different parts of the country; that the benefits of the hospitals are frequently abused by the well-to-do; that the Poor-law authorities are gradually being forced to provide accommodation for cases that formerly would have been treated in a voluntary hospital; and that there is overlapping and want of cooperation between the voluntary hospital and Poor-law authorities. want of co

The Commission as to these latter conditions recommends: That the sick poor should be accommodated in hospitals on sites detached from the poorhouses, adequately staffed, under the super-intendence of a medical officer, and open for the purposes of clinical

It recommends also the conversion of superfluous poorhouses into hospitals, and that arrangements should be made where necessary for the reception of patients in voluntary and general hospitals, subject to payment made on their behalf by the authorities responsible for them. It also advises the desirability of compulsory powers of removal and detention of patients being given to Public Assistance authorities and parish councils.

Outdoor Medical Relief.

Outdoor medical relief is largely due in Scotland to the operation of the medical relief grant which has secured the appointment of a medical officer or officers at a fixed salary in 800 out of the 874 parishes in Scotland. In towns it is

¹ The first article was published in The Lancer of Dec. 4th, p. 1698.

² Fuller particulars as to this, with special reference to Edinburgh are given in the Minority Report, pp. 260, 261.

largely supplemented by medical charities and by the private benevolence of medical practitioners who give gratuitous attendance, and in these circumstances it is found by the Commission to be chiefly defective through want of practical cooperation between the various organisations. towns and in the Lowland districts the Commission has received no evidence to show that outdoor medical relief is generally inadequate, but the opinion is expressed that the provision of it by the Poor-law may be largely supplemented by the gratuitous attendance of private practitioners. "But (the report continues) as regards the Highlands and islands, it is clear that the medical attendance in many parishes is deplorably insufficient, and affects not only the physical well-being of the paupers but also that of the whole population. At the same time it appears that, notwithstanding the deficiency, the paupers themselves are better off in respect of medical attendance than the class immediately above them. The problem in these parishes is to secure even a minimum of medical attendance for the inhabitants.

The following will illustrate this point. The Island of Lewis has been mentioned already. On its western side is a district with a population of 13,000, scattered in about 40 villages. It is 72 miles long by the only existing road, and villages not situated upon the road must be visited on foot. All the medical attendance available has to be given by two medical men living 50 miles apart. In four parishes of Inverness-shire, as recorded in 1900, there were respectively 70, 67, 64, and 51 per cent. of uncertified deaths, and lest percentages should be deemed to be misleading we are given in respect of others the following figures:—

		To	Total dea		Uncertified.
	Lewis Mid Ross Western Ross		390		114
Ross-shire	Mid Ross		204		57
	Western Ross		81		43
	Harris		67		34
	Shetland (landway	d)	337		114

Trained nursing as a department of outdoor poor-relief in Scotland does not appear to exist. There is no grant available for it, and it is not provided for directly either in the Poor-law Act, 1845, or in the medical relief rules. district nursing associations, however, and notably Queen Victoria's Jubilee Institute, do good work, the latter agency being represented by 248 nurses in different parts of The evidence of medical witnesses is cited by the Commission to show how great is the need for adequate nursing by women capable of undertaking it under the conditions in which it would have to be done, and according to these gentlemen it is nurses to work under their directions rather than a large supply of medical practitioners that is needed. The Commission calls attention to the deplorable conditions in respect of sanitation which prevail in the homes of the population in many districts. In discussing outdoor medical aid rendered by agencies other than the Poor-law, the Commissioners assign a prominent place to the gratuitous service rendered by medical men, and find that in large towns there are many medical charities. These, they consider, are abused in many instances by persons able to pay for treatment, and they comment on the fact that in spite of the supposed thriftiness of the Scotch there should be no provident dispensaries or public medical service on a provident basis.

With reference to phthisis, the Commission finds the Poor-law authorities to be alive to their duties but hampered in the performance of them by circumstances. In most poorhouses phthisical patients are segregated, but the objection entertained by the poor to entering the poorhouse militates against success, and as an instance of the anomalies brought about by the existing law it is mentioned that though the healthy dependents of a phthisical patient received into a poorhouse are given outdoor relief as a rule, the phthisical dependents of an able-bodied man cannot be received into the poorhouse at all. A certain amount of boarding out in private dwellings in country places and in sanatoriums takes place.

The Commission makes proposals for the amelioration of the conditions under which medical officers perform their duties; for the drawing up of a scale of fees for special operations and for midwifery cases; for the defraying of the cost of drugs otherwise than out of the pocket of the medical officer, and for the providing of housing accommodation for him where it is needed; for the appointment of additional medical officers; and for the provision of trained nursing for

outside patients. They recommend that no disfranchisement should be attached to any form of medical assistance and that the administration of the Vaccination Acts should be handed over to the sanitary authorities.

In considering the question of the great need for medical aid among the poorer classes generally—i.e., including those not otherwise in need of public assistance—the Commission

1. A better supply of hospital accommodation should be provided based upon the needs of each Public Assistance area.

based upon the needs of each Public Assistance area.

2. That a united effort should be made to prevent the abuse of medical charities by persons in a position to pay for treatment.

3. That there should be systematic cooperation between the Public Assistance Authorities, the sanitary authorities, the education authorities, and the voluntary medical institutions, based on a clear definition of their respective functions.

tion of their respective functions.

4. That a joint committee representative of these authorities and of the medical profession should be appointed for the purpose (a) of framing sohemes of cooperation to be adopted by the various bodies concerned; and (b) of considering after consultation with the Voluntary Aid Council, where such exists, the needs of each Public Assistance area in regard to hospital accommodation. That steps should be taken to organise, with the cooperation of the medical profession, a system of medical aid by some form of insurance—e.g., by the establishment of provident dispensaries or medical clubs; and that a departmental committee should be appointed to consider the means by which such a system can best be organised.

The remaining parts of the Committee.

The remaining parts of the Commission's report deal withthe Poor-law"; VII., "Miscellaneous Questions," which include the recovery of the cost of relief; settlement and removal; rating; vagrants; and the detention or continuous treatment of certain classes of cases receiving or applying for public assistance. With regard to Part VI., the overlapping and want of coordination in the distribution of a very large volume of charitable assistance is dwelt upon, and the formation of voluntary aid councils and committees for the remedying of abuses and insuring effective aid being given in suitable cases is recommended. The persons referred to in Part VII. include the feeble-minded, with regard to whom it is recommended that they should be subject to complete control on the lines laid down by the Royal Commission on the Care and Control of the Feebleminded.

We have given above a sketch of the principal matters of interest to the medical profession dealt with by the Majority Report of the Royal Commission. We have spoken of it as the report of the Commission, which, indeed, it is, and we recommend those in need of fuller information to refer to its pages, for they contain a very great deal that is of considerside with the report on England and Wales the report on the Scottish Poor-law shows the marked differences which, partly due to geographical and climatic causes, exist between two races united under one government and inhabiting adjoining territories. Like the report on England and Wales, it raises the hope that steps may be taken without delay to remedy the more readily remediable evils revealed and to initiate a new and better order of things in the matter of "public assistance.

To the Majority Report there is added, as in the cases of England and Wales and of Ireland, a Minority Report signed by the same dissentient four members of the Commission. It also contains a great deal that is interest-ing and well worthy of study, and the two reports read together form, as in the case of England and Wales (rather than that of Ireland), a most important treatise upon the subject dealt with. The Minority Report relating to Scotland makes the same recommendations that were put forward upon the two previous occasions for dividing up the subjects of public assistance between local authoritiesalready constituted and for assigning control and recovery of costs to a registrar. Lord George Hamilton, the chairman of the Commission, adds a reply to the Minority Report and (subject to our expressed opinion that the Minority Report contains important and interesting matter) we are inclined to believe that the criticism contained in his memorandum is not altogether unjustifiable. In his first paragraph he observes, with regard to the Minority Report, that the latter part of it is not a report upon Scotland or dealing with the peculiarities of the system in force in that country, but is an enlarged and varied edition of their original proposals intermingled with a new set of comments and criticisms upon the proposals of the Majority."

A memorandum by Professor Smart on the history of the Scots Poor-laws prior to 1845, published as an appendix, will be found well worthy of study.

MOTORING NOTES.

BY C. T. W. HIRSCH, M.R.C.S. ENG., L.R.C.P. LOND.

The Question of Light and Inexpensive Cars.

AT one time it was the policy of motor-car builders chiefly to cater for those to whom money was of little moment and who were indifferent not only to initial but also to running costs. Now nearly all the makers are turning their thoughts to the motorist of moderate means, and in this category the majority of the profession may, I think, be counted. Unfortunately the general tendency seems to be in the direction of the so-called light four-cylinder car. I am not disparaging, nor do I wish to disparage, this type, but for many of the chauffeurless doctors even a lighter runabout would be more useful. The lighter the car the lower the horse power, and thus less consumption of fuel and tyres. Lightness is an important factor in the matter of production and running expense; increase in dead weight not only means increase in the horse power needed to push the car along but also decrease in the real strength of the car, for the strains to which a car is subjected depend on the propelling force and the resistance of the road, and these increase in the actual ratio of the weight, and with this increase comes increased strain. It is therefore certain that the two points which the medical man, who intends to become a motorist. should consider when thinking of a car are lightness and simplicity; both spell absence of trouble—the former low

tyres, small fuel, and upkeep bills, and the latter the absence of repair accounts; in fact, on a simple car the owner should be able to do most of the repairs himself.

The General Construction of a Simple Car.

The chassis—
that is, the car
minus the body—
is formed of a
motor, or engine,
in which the
poweris produced,
some form of
transmitting this
power to the road

wheels, and some method by which in passing this power can be increased when more work is required of the car, as in climbing a hill. This is usually carried out by what is known as the Panhard type of change speed, and consists of a gearbox containing two shafts. One is connected by the clutch with the crank shaft of the engine, and on this spindle-toothed wheels slide. It is usually made in two parts, the end of one having a bearing in the end of the other, and by means of a dog clutch the two parts are made one and revolve together, and then the engine power is directly carried to the bevel at the end of this shaft, or rather at the termination of the cardan shaft, to which this shaft is connected, and thus to the differential and road wheels. is the direct drive; otherwise the power is transmitted by a pinion to a second or lay shaft, and then back to the second half of the first shaft by toothed wheels, which can be slid in and out of gear, and in this manner also to the differential The accompanying diagram illustrates a usual and wheels. type of gearbox. By means of a third pinion on a separate shaft, through which the first shaft drives to the second, the reverse is obtained. The differential gear is a set of wheels arranged so as to average the speeds of the two driving road wheels when the car turns a corner, and this balance mechanism, by means of satellite pinions, distributes the power automatically between the two wheels, so that the outer one can travel faster than the inner one.

In addition to these parts the chassis consists of a frame on which these members are fixed, of springs to which the carriage body is attached, steering gear, axles, road wheels.

The engine in its most elementary form is a casting in which a piston can work up and down, and of course the inside of the engine casting or cylinder is machined, so that the piston is a perfect fit. By means of a valve the vapour of petrol, from a vaporiser or carburettor, is admitted to the cylinder; the piston ascends and compresses this mixture; at the correct moment, by means of the commutator attached to the two-to-one shaft, an electric current circuit is completed, there is a spark in the cylinder, the mixture explodes and forces down the piston, and the force of this thrust-down of the piston is transmitted by the piston connecting rod to the crank shaft, which is kept revolving by the flywheel, and the crank shaft through the clutch transmits the power to the gearbox and so on to the road wheels. The momentum keeps the crank revolving, and the piston ascends once more, compresses the gases left after the explosion; another valve, the exhaust valve, opens and these gases are pushed out, thus making room for fresh ones to enter, when the piston next descends and creates a vacuum. Some inlet valves are automatic-that is, they are kept shut by a weak spring and are opened by the suction action of the piston; others are, like the exhaust valve, mechanically opened—that is, they are lifted off their seats by their spindles being pushed up by tappets, which in their turn are raised by cams or eccentrics on the two-to-one shaft, which is connected to the crank by toothed wheels, with such a proportion of teeth on each that the cam shaft rotates once while the crank shaft turns round twice. This series of operations, suction (admission of gas), compression, explosion, and, lastly, expulsion of products of explosion constitute

what is called the "Otto" cycle.

Of course, great heat is produced by the explosion, and in order to allow of lubrication of the cylinder wall and piston the cylinder has to be kept cool; this is done by surrounding cylinder with a through jacket, which water is circulated by syphon or by means of a pump, and so that the water will not quickly boil away, in its course it is made to pass through

Brake Drum

Lay Skoft

Coupling

For Cardan

Skaft

Clutch

Through Shaft:

Dop Clutch.

copper tubes exposed to the air. These tubes form what is termed the radiator, and on most cars the water is further cooled by a fan rapidly revolving behind the radiator, and so sucking in cool air to further the reduction of the water temperature. The ignition or explosion of the mixture is brought about by a spark, between two metal points in the cylinder, and it is this part of a car that accounts, or rather used to account, for most breakdowns and road stoppages. The latest type is the magneto, and the high tension variety seems the most satisfactory; for single cylinders it is run at cam shaft speed for four cylinders at the speed of the engine. In these instruments currents are produced by the rapid passage of coils of copper wire wound round soft iron cores between the poles of a magnet. But the objection is that occasionally magneto-fired engines need three or four turns of the starting handle before they are set in action. With the accumulator and coil system, one pole of the accumulator is connected to the primary coil, the other to the brush of the commutator; as the engine revolves this completes the circuit, an electric current passes through the primary coil, the trembler vibrates, a high intensity current is generated in the secondary coil, jumps at the sparking plug points in the cylinder, and so the mixture is exploded. With non-trembler coils there is a positive make and break at the commutator and the contact blade acts as a trembler. The usual carburettor is of the atomiser kind; petrol supplied by gravity enters a float chamber, and on the float rests an arrangement of levers, so that they work a needle valve, which cuts off the petrol when it exceeds a

certain height in the chamber; the petrol is drawn by the suction of the engine through a narrow pipe up a fine jet into the mixing compartment, air at the same time is drawn in along a tube which opens near the exhaust, so the air comes in heated, it mixes with the petrol, and the explosive mixture that results enters the engine through the inlet valve. A contrivance is fitted by which the amount of air can be varied, either by a lever or by the speed of the engine itself.

The reader with mechanical knowledge should be able to follow from this brief summary the general construction of a simple car.

Looking Back.

FROM

THE LANCET, SATURDAY, Dec. 10th, 1831.

The practice of injecting the veins in desperate cases with substances of still more energetic properties than those which the chlorate of potash possesses, is by no means new to medicine. In an extensive and brilliant series of experiments performed on horses at the veterinary school of Alfort, Dupuy demonstrated the extraordinary success attendant on this practice, and the safety with which carbonate of ammonia and many other substances could be injected into the venous system. Again, the records of toxicology afford us examples by no means unique, of the successful injection of tartar emetic into the blood in cases of hopeless narcotic poisoning. In the Journal des Progrès, vol. 3, 1830, MM. Percy and Laurent relate the cases of three Russian soldiers cured of tetanus by injections of opium into the veins. In the same journal, the same writers also mention other cases of tetanus successfully treated by the injection of a decoction of the datura stramonium in half an ounce of water.

I trust I have now said enough to induce and justify the trial of this new proposal, at least in the fearful cases in which venesection is found impossible, and the violence of the malady devides all other means of medication. Should the method be found to succeed, it will have the advantage of fulfilling all the objects which Messrs. Bell, Kennedy, and Annesley, hold in view when they practise venesection, and that without threatening to induce the debility which the detraction of blood is thought by many to endanger.

In the performance of the operation, the circumstances of the disease must be borne in recollection. When the current of the circulation is impeded, as in the blue cholera, injection from the bend of the elbow can scarcely be efficient. I would, therefore, suggest that the tube, which should be of gold or ivory, be introduced into the external jugular vein immediately as it crosses the sterno-mastoid muscle. I would select this place as the nearest spot to the superior cara, free from the danger of the entrance of air caused by the suction force of the right side of the heart, an influence which Berard has shown to be ineffective in the introduction of air, except where the flaccid orifices of a divided vein are kept gaping and stretched by adhesions to adjacent prolongations of fascia or condensed cellular substance; as is remarkably the case with the subclavian and with the jugular in the lower third of its progress. The syringe used in the injection should contain no more than three ounces, the solvent should be distilled water heated to a blood warmth, and the syringe also equally warmed. The tube should not be more than an inch long, and curved gently for the convenience of manipulation, and it should have a marked conical form. forming the operation, after the vein is exposed, I would make a puncture with a lancet, just sufficient to permit the introduction of the tube, but I would by no means detach the vessel from its connexions. The injection should be deliberately and slowly performed. From ten to thirty grains of the chlorate might, I think, be safely employed. It would, however, be essentially necessary that before the experiment was tried, a minute analysis of cholera blood should be performed, and the effects of the oxygenated salts examined, as to the change of colour and their influence on the affinity of that blood for oxygen in its uncombined or its nascent forms. To my mind no satisfactory analysis of the blood in cholera has yet been completed. HERMAN'S, the most recent and

most minute, is still, I am prepared to prove, far from deserving implicit confidence.*

* Herman mentions irec accite acid as an ingredient in healthy blood. He also states that after coagulation of the cholera blood, the crassamentum was acid and the serum alkaline! It is unnecessary to dwell on the latter statement, as it involves an impossibility. Concerning the first, it is sufficient to observe that in the best analysis of the blood ever performed—viz., that by M. Lecanu of Paris, and for which he obtained the gold medal from the Academy (vide Journal de Pharmacie. September and October, 18:11), no statement occurs of the detection of acetic acid, though, had it been present, M. Lecanu's process must have revealed its existence.

Excerpt from "Proposal of a New Method of Treating the Blue Epidemic Cholera by the Injection of Highly-oxygenised Salts into the Venous System." Read before the Westminster Medical Society, Saturday, Dec. 3rd. By W. B. O'Shaughnessy, M.D.

Public Bealth.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Administrative County of Devon.—We have received from Mr. George Adkins of Exeter a copy of his first annual report as medical officer of health for the administrative county of Devon. Although his appointment dates only from November of last year, Mr. Adkins has already found time to study the annual reports for 1908 of each of the district health officers in his jurisdiction and to summarise them for the instruction of his county council. In Devonshire coordination has fortunately been secured between the services of public health and elementary education by entrusting the supervision of both to the county medical officer of health, under the additional title of school medical officer, the four district medical inspectors of schools acting under him. Very appropriately, in a preliminary report the county medical officer gives an interesting description of the physical and geological features of Devon, which is the third largest county in England. With the general arrangement of the technical portion of this present report we are favourably impressed. It has been framed throughout in conformity with the instructions of the Local Government Board, and, what is essential for comparative purposes, the tabular matter is arranged according to the model forms of that Board. Systematically planned and tersely expressed, it contains, in our view, just the kind of local information and of expert guidance required by the supreme sanitary authority of a mainly rural area like Devonshire for the discharge of its manifold duties in relation to the public health. Mr. Adkins is fortunate in having at his disposal comparative local statistics of birth and of general mortality relating to a long series of years. The birth-rate of Devon has generally been considerably below that of England and Wales, and in recent years has shown a decline of about the same amount, the rate in the rural districts having declined, if anything, somewhat faster than in the urban. The death-rate last year in the administrative county was as low as it had been in any year of the previous ten. Referring to the relatively higher general mortality in a few of the larger health resorts, the medical officer explains that this is due to the presence of many invalids who repair thither to die, whilst as regards the urban district shown by the tables to experience the highest death-rate in 1908 we learn that this is due to excessive local fatality from tuberculosis. The report devotes careful attention to the question of infant mortality, which last year was at the low rate of 88 per 1000, the lowest for the last ten years and 33 per 1000 below that of 1899. As in other parts of the kingdom, the loss of infant life in Devonshire is far higher in the town than in the country districts. Among disorders amenable to sanitary measures the seven notifiable infectious diseases give particular reason for comment in this report. For, although their aggregate mortality was lower in 1908 than in any previous year, the reported attacks by several of them were far above the average in number. Of small-pox 3 cases were imported, the patients arriving at Plymouth from South Russia and being treated at the hospital ship in the Sound. With respect to one large town, the disquieting statement is made that 50 per cent. of the children are unvaccinated. Scarlet fever was present last year in more than half of the 52 districts of the county, more than 700 cases,

with 11 deaths, having been reported. In one borough a considerable outbreak occurred in connexion with school attendance, but none of the cases were fatal. Mr. Adkins remarks that the control of scarlet fever is difficult to maintain because of its mildness of type in recent years. The disease is generally spread in recent years. through school attendance; indeed, many of the infected children, not feeling ill enough to discontinue attendance, are found in the schools desquamating, or discharging infectious matter from the nose or ears. Diphtheria was prevalent last year in 36 of the districts, more than 500 cases having been reported, 10 per cent. of which ended fatally. The worst outbreak occurred at a favourite health resort, where immunity from this disease had been enjoyed for several years. Many of the attacks were related to school attendance. In a neighbouring town, in which 65 cases occurred, the spread of infection was traced to "carrier cases" among school children. Devonshire is by no means free from enteric fever, as many as 112 cases, with 18 deaths, having been reported there last year. The disease was distributed over 25 districts. Many of the cases are believed to have been caused by contaminated shell-fish. In this case also the influence of "carrier cases" is believed by the medical officer to have been concerned in the propagation of the disease. He mentions an instance in which a woman communicated infection, having herself suffered from attack by enteric fever nine years previously. Among other conditions that are admittedly amenable to sanitary influence considerable space is devoted to the subject of tuberculosis. The pulmonary form of this disease caused 479 deaths, and other forms 142. Mr. Adkins makes some vigorous remarks concerning its prevention and its area of distribution. Of administrative action for the prevention of disease the report contains satisfactory account, but the county medical officer regrets that the district medical reports are presented in manuscript only, and he points out the advantages that would accrue to all if they were in every case available in printed form. In all rural areas the danger of pollution of drinking water is a constant source of anxiety to sanitary authorities. We read that in Devonshire the liability to pollution is much in evidence in certain districts, but that in several instances improvements are in progress. Considerable attention is devoted to the maintenance of a pure milksupply. In some districts the regulations respecting registration and other sanitary precautions are not complied with by dairymen and in others the cowsheds are filthy and the cows and milkmen are anything but clean. Serious attention to these important matters is very properly urged in the report upon the district councils. Mr. Adkins gives interesting particulars respecting the methods of dealing with infectious disease in his jurisdiction. Only 13 of the urban and 4 of the rural districts have made hospital provision for isolation. In the remaining districts the patients have either to be sent to distant hospitals or else to be isolated as well as possible at home. With the object of securing timely information of outbreaks of infectious disease the county medical officer is provided with a weekly list of such occurrences within the administrative county, and by the courtesy of the medical officers of Exeter, Plymouth, and Devonport this list is supplemented by returns for those county boroughs. In many of the districts of the county the councils have provided antitoxin serum for the treatment of diphtheria, and the general purposes committee of the county council has recently sanctioned the provision of free bacteriology for use throughout its area in dealing with infectious diseases.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 7056 births and 5196 deaths were registered during the week ending Dec. 4th. The annual rate of mortality in these towns, which had steadily increased in the five preceding weeks from 12.0 to 16.4 per 1000, further rose to 16.5 in the week under notice, and exceeded the rate recorded in any week since the middle of April last. During the first nine weeks of the current quarter the annual death-rate in these towns averaged 13.7 per 1000, and in London the mean rate during the same period was 13.5. The lowest annual rates of mortality recorded in the 76 towns last week were 7.7 in East Ham, 8.0 in Walthamstow, 8.4 in Hastings, and 9.1 in

Croydon; the rates in the other towns ranged upwards, however, to 23.1 in Brighton, 25.5 in Swansea, and 28.0 in Hanley and in Oldham. In London the recorded death-rate last week was equal to 16.0 per 1000. The 5196 deaths registered in the 76 towns last week showed a further increase of 29 upon the numbers returned in the five preceding weeks, and included 297 which were referred to the principal epidemic diseases, against 281 and 278 in the two preceding weeks; of these 297 deaths, 65 resulted from whoopingcough, 58 from diarrhoea, 53 from measles, 48 from diphtheria, 41 from scarlet fever, and 32 from "fever" (principally enteric), but not one from small-pox. The annual rate of mortality from these epidemic diseases last week was equal to 0.9 per 1000, corresponding with the rate in each of the two previous weeks. No death from any of these epidemic diseases was registered last week in Bradford, East Ham, Brighton, Tottenham, or in nine other smaller towns; the annual death-rates therefrom ranged upwards, however, to 2.7 in Blackburn, 2.9 in Burnley, 3.8 in Hanley, and 4.0 in South Shields. The deaths from whooping-cough in the 76 towns, which had been 69 and 61 in the two preceding weeks, rose again to 65 last week, and caused the highest annual rates, 1.1 in Oldham and 1.4 in Ipswich. The 58 deaths attributed to diarrhœa exceeded the number in the previous week by 3, and showed the greatest excess in Blackburn and South Shields. The 53 fatal cases of measles exceeded the number in any recent week, and caused annual rates equal to 1.2 in York, 2.0 in Burnley, and 2.3 in Hanley. The 48 deaths from diphtheria showed a decline of 10 from the number in the previous week; they included 9 in London and its suburban districts, 4 in Liverpool and Bootle, 3 in Manchester and in Newcastleon Tyne, and 2 each in Bristol, Hanley, Leeds, South Shields, and Gateshead. The 41 fatal cases of scarlet fever corresponded with the number in the previous week, and included 14 in London and its suburban districts, 4 in Birmingham and King's Norton. 7 in Liverpool and Bootle, and 2 in Blackburn. The 19 deaths referred to "fever" exceeded by 13 the number returned in each of the two preceding weeks; 3 occurred in Liverpool and in Manchester, and 2 each in Smethwick, Bolton, and Oldham. The number of scarlet fever patients under treatment in the Metropolitan Asylums and London Fever Hospitals, which had declined during the seven preceding weeks from 2810 to 2518, had further fallen to 2488 on Saturday last; 281 new cases of this disease were admitted to these hospitals during last week, against 308 and 264 in the two preceding weeks. The Metropolitan Asylums Hospitals contained 3 cases of small-pox on Saturday last. Of the 1484 deaths registered in London last week, 432 were referred to pneumonia and other diseases of the respiratory system, against numbers increasing from 167 to 387 in the seven preceding weeks; these 432 deaths exceeded by 10 the corrected average number in the corresponding week of the five years 1904-08. The causes of 41, or 0.8 per cent., of the deaths registered last week in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death registered last week were duly certified in Leeds, Sheffield, Bristol, West Ham, Bradford, Hull, Nottingham, Leicester, Salford, and in 44 smaller towns; the 41 uncertified causes of death in the 76 towns last week included 7 in Liverpool, 5 in Birmingham, and 3 both in Manchester and in Sunderland.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 800 births and 797 deaths were registered during the week ending Dec. 4th. The annual rate of mortality in these towns, which had steadily increased in the five preceding weeks from 12.9 to 24.2 per 1000, declined again to 22.3 in the week under notice. During the first nine weeks of the current quarter the annual death-rate in these Scotch towns averaged 16.5 per 1000, and exceeded by 2.8 the mean rate during the same period in the 76 largest English towns. The annual death-rates last week in these Scotch towns ranged from 12.0 and 13.4 in Aberdeen and Leith, to 27.3 in Glasgow and 33.9 in Perth. The 797 deaths from all causes in the eight towns last week showed a decline of 69 from the high number in the previous week, and included 88 which were referred to the principal epidemic diseases, against 66, 77, and 98 in the three preceding weeks. These 88 deaths were equal to an annual rate

of 2.5 per 1000; the mean rate from the same diseases last week in the 76 English towns did not exceed 0.9 per 1000. The 88 deaths from these diseases in the Scotch towns last week included 43 from measles, 17 from whooping-cough, 11 from diarrhoea, 9 from scarlet fever, and 4 both from diphtheria and from "fever," but not one from small-pox. The fatal cases of measles, which had been 22, 36, and 49 in the three preceding weeks, declined again to 43 last week, of which 40 were returned in Glasgow. The fatal cases of whooping-cough, which had been 12 and 9 in the two previous weeks, rose to 17 last week, of which 8 occurred in Glasgow, 3 in Edinburgh and in Dundee, and 2 in Greenock. The 11 deaths attributed to diarrhœa showed a decline of 5 from the number in the previous week, and included 4 in Glasgow, 4 in Edinburgh, and 2 in Dundee. Of the 9 fatal cases of scarlet fever. 5 occurred in Glasgow and 3 in Edinburgh; and the 4 deaths from diphtheria included 2 both in Glasgow and The 4 deaths referred to "fever," of which in Dundee. 3 were certified as enteric and 1 as cerebro-spinal meningitis, included 2 in Glasgow and 2 in Aberdeen. The deaths referred to diseases of the respiratory system in the eight towns, which had increased in the five preceding weeks from 68 to 298, declined again to 265 last week, but exceeded by 151 the number registered in the corresponding week of last year. The causes of 23, or 2 · 9 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0.8 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,142,308 persons, 568 births and 441 deaths were registered during the week ending Dec. 4th. mean annual rate of mortality in these towns, which had steadily increased in the six preceding weeks from 14.8 to 21.0 per 1000, declined again to 20.0 in the week under notice. During the first nine weeks of the current quarter the annual death-rate in these Irish towns averaged 17.7 per 1000, whereas the mean death-rate during the same period did not exceed 13.7 in the 76 largest English towns, and 16.5 in the eight principal Scotch towns. The annual death-rate last week was equal to 22·1 in Dublin, 19·8 in Belfast, 25·3 in Cork, 23·0 in Londonderry, 13·7 in Limerick, and 19.5 in Waterford; the mean rate last week in the 16 smallest of the Irish town districts was equal to 18.2 per 1000. The 441 deaths from all causes in the 22 town districts last week showed a decline of 19 from the number returned in the previous week, and included 22 which were referred to the principal epidemic diseases. against 18 and 21 in the two previous weeks; these 22 deaths were equal to an annual rate of 1.0 per 1000; in the 76 English towns the mean rate from the same diseases last week was 0.9, and in the eight principal Scotch towns was 2.5 per 1000. The 22 deaths from these epidemic diseases in the Irish towns last week included 10 from whooping-cough, 8 from diarrhea, 2 from diphtheria, and 2 from "fever" (enteric), but not one from measles, scarlet fever, or small-pox. The 10 fatal cases of whooping-cough showed a further increase upon the anumbers in recent weeks, and included 6 in Belfast and 2 in Limerick. The 8 deaths from diarrhoea also showed an increase, including 3 in Belfast and 2 in Dublin. Of the 2 fatal cases of diphtheria one each occurred in Dublin and in Belfast; and the 2 deaths from enteric fever included 1 each in Dublin and in Cork. The deaths referred in the 22 towns to pneumonia and other diseases of the respiratory system, which had been 110 and 101 in the two preceding weeks, rose to 157 last week. The causes of 14, or 3.2 per cent., of the deaths registered in these Irish towns last week were not certified by a registered medical practitioner or by a coroner; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0.8 per cent., while in the eight Scotch towns it was equal to 2.9 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeons: J. A. Moon, to Royal Marines, Portsmouth; E. B. Pickthorn to the Prince of Wales; M. C. Langford to the Medical Department, Admiralty; J. E. Coad to the Renown, on recommissioning. Staff-Surgeons: W. S. H. Sequeira to the President, additional, to be lent to Yarmouth Hospital, temporarily; A. Woollcombe, to the Charybdis, on recommissioning; R. F. Clark to the Brilliant, on recommissioning. Surgeons: H. W. W. Townsend to the Pembroke, for Royal Naval Barracks; N. P. Hingston to the Euryalus; J. C. F. D. Vaughan to the Haulbowline; H. C. Devas to the Cornwall; and J. Bourdas to the Pembroke, additional.

The following qualified candidates for the Naval Medical Service have been appointed Surgeons in His Majesty's Fleet:
—Martyn Henry Langford, Roderick Joseph Graham Parnell, Arthur Gordon Valpy French, Charles Dowall Bell, Archibald Fairley, John Parton Berry, Frank Lewis Smith, Walter Everard Lloyd, Francis Charles Searle, Albert Christoph Rusack, John Harding Baynes Martin, Cecil Gordon Sprague, and Thomas Charles Patterson (dated Nov. 5th, 1909).

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel H. Marks, on arrival in India, has been appointed to command the Station Hospital, Ferozepore. Lieutenant-Colonel W. Swabey assumed command of the Station Hospital, Aden, on Dec. 1st. Captain J. B. Cautley, Station Hospital, Cawnpore, has been directed to proceed to Bhamo for permanent duty in the Burma Division. Lieutenant-Colonel M. W. Russell has been appointed staff officer to the Principal Medical Officer, Eastern Command, vice Lieutenant-Colonel C. R. Tyrrell. The undermentioned officers, who are serving in India, are appointed specialists in the subjects stated: Captain J. H. Campbell, Brigade Laboratory, Allahabad, prevention of disease, from Sept. 14th; Captain A. H. Safford, Brigade Laboratory, Fyzabad, prevention of disease, from Sept. 16th; Major M. P. C. Holt, D.S.O., 3rd (Lahore) Division, advanced operative surgery, from Oct. 11th. Lieutenant-Colonel J. B. Forrest, returning from Burma, Major R. C. Thacker, from Karachi, and Captain W. MacDowall, from Ambala, have been appointed for duty in the Cork District; and Major E. S. Clark, from Nowshera, and Captain B. G. Patch, from Mooltan, to the Belfast District.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Supplementary List: Lieutenant Wilson Ranson to be Captain (dated Nov. 26th, 1909).

TERRITORIAL FORCE.

Royal Army Medical Corps.

2nd Home Counties Field Ambulance: James Dundas to be Lieutenant (dated Oct. 20th, 1909).

Lowland Mounted Brigade Field Ambulance: Lieutenant Robert B. Carslaw to be Captain (dated Oct. 7th, 1909).

2nd London (City of London) General Hospital: Major William H. White to be Lieutenant-Colonel (dated Nov. 9th, 1909). Captain Herbert P. Hawkins to be Major (dated Nov. 9th, 1909).

Attached to Units other than Medical Units.—Lieutenant Alfred A. Beeks to be Captain (dated May 26th, 1908). Lieutenant-Colonel John W. Ellis resigns his commission and is granted permission to retain his rank and to wear the prescribed uniform (dated Nov. 7th, 1909). Lieutenant John Hobbs to be Captain (dated Nov. 7th, 1909).

Hobbs to be Captain (dated Nov. 7th, 1909). For attachment to Units other than Medical Units.—Lieutenant Charles Henry Bullen, from the 3rd North Midland Field Ambulance, Royal Army Medical Corps, to be Lieutenant (dated Oct. 1st, 1909). Captain (Honorary Lieutenant in the Army) Edmund William Herrington, from the 3rd London (City of Lendon) Field Ambulance, Royal Army Medical Corps, to be Captain (dated Oct. 18th, 1909). Kenneth Mackinnon to be Lieutenant (dated April 1st, 1909). Percy Bertram Spurgin to be Lieutenant (date Nov. 16th, 1909).

DEATHS IN THE SERVICES.

Deputy Inspector-General Frederick William Blake, R.N.,

UNIVERSITY COLLEGE (UNIVERSITY OF LONDON).

—The new botanical laboratories will be opened on Dec. 17th at 4 o'clock by Mr. D. H. Scott, LL.D., Ph.D., F.R.S. The Vice-Chancellor will take the chair.

aged 85 years, on Dec. 4th. He entered the service as surgeon in 1846, became staff-surgeon in 1855, fleet-surgeon in 1870, and retired with the rank of deputy inspectorgeneral in 1879. He was assistant surgeon on the *Leander* during the Russian war in the Black Sea, 1854 (Crimean and Turkish medals).

Major Espine Charles Robert Ward, A.M.S. (retired), at his residence in Ireland, aged 61 years, on Nov. 28th. He entered the service in 1871 as assistant surgeon and became surgeon in 1873, surgeon-major in 1883, and retired in 1887. He served in the Zulu war in 1879 and in the subsequent operations against Sekukuni, including the storming of the stronghold (medal and clasp). He also served in the Boer war of 1881 and was present in the engagement at Madder Spruit, where he was slightly wounded (mentioned in despatches).

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

The December issue of this journal, which contains the index to Vol. XIII., opens with a short biographical appreciation of Sir John Pringle, Bart., from the pen of Major H. A. L. Howell, R.A.M.C. John Pringle was intended for a commercial career, but while on a visit to Leyden he attended a lecture by Boerhaave, which so deeply impressed him that he determined to become a pupil of that celebrated physician. He afterwards went to Paris, and subsequently returned to Edinburgh. In 1742 Pringle became private physician to the Earl of Stair, who at that time commanded the British forces in Flanders, and was also appointed physician to the military hospital there. He retired from the army in 1758. From a list of his writings Major Howell shows that Sir John Pringle was "unquestionably the father of modern military hygiene," and a study of his works "proves that he was aware of many facts in connexion with military bygiene which most of us have considered as of comparatively recent discovery."
"In conclusion," says the writer, "it is believed that to
Pringle is due the first foreshadowing of the Geneva Convention of our own day." In the same issue Lieutenant-Colonel R. J. S. Simpson, C.M.G., R.A.M.C., continues his medical history of the South African war; and the address on Some Modern Views concerning Heredity and Variation, by Brevet-Colonel R. H. Firth, R.A.M.C., which was recently delivered before the Aldershot Military Medical Society, is reprinted. Major P. J. Freyer, I.M.S. (retired), makes some practical observations on the operation for total enucleation of the enlarged prostate.

NURSES IN THE TERRITORIAL FORCE.

On Dec. 3rd Miss Haldane, sister of the Secretary of State for War, presented the badges to 110 nurses who have enrolled themselves in that force. The ceremony took place in the Royal Victoria Infirmary, Newcastle-upon-Tyne, under the presidency of Sir George Hare Philipson, consulting physician to the infirmary. After the presentation Miss Haldane gave an address on the Territorial Force scheme as it would apply to nurses, and outlined their duties and responsibilities. She congratulated the matron of the Royal Infirmary, who is the organising matron in the counties of Durham and Northumberland, on the success which had attended her efforts, and trusted that the full complement of nurses (120) from this district would soon be forthcoming. To this ceremony was added the presentation of prizes to the nurses of the infirmary as the result of their various test and certificate examination.

ATTACK ON AN INDIAN MEDICAL SERVICE OFFICER.

A Reuter's telegram from Lahore, dated Dec. 19th, states that Captain J. E. Clements, I.M.S., superintendent of the Central Jail, Montgomery, has been stabbed in the back and seriously wounded by a Pathan prisoner. The chief gaoler was also wounded in the stomach by the same prisoner. A later telegram states that Captain Clements has rallied and is going on well.

THE ARMY MUDICAL ADVISORY BOARD.

The Army Council has approved of the appointments of the following gentlemen as members of the Army Medical Advisory Board being renewed for a period of three years:—Dr. J. Rose Bradford, F.R.S., Sir C. Cameron, C.B., Dr. L. C. Parkes, Dr. M. S. Pembrey, and Sir F. Treves, Bart., G.C.V.O., C.B.

Correspondence.

"Audi alteram partem."

ABDOMINAL CRISES IN DIABETES.

To the Editor of THE LANCET.

SIR, -- In THE LANCET of Nov. 27th is an annotation on the above subject recording two cases of diabetes in which an abdominal crisis occurred simulating acute intestinal obstruction, and it is mentioned that, although similar cases do not appear to have been reported previously, Grube has described in diabetes attacks resembling the gastric crises of tabes. The rarity of the condition leads me to think that a few notes of a recent case under my observation may be of interest. The patient was a lady, aged 25 years, who had been under my care during the last two years with severe diabetes. At first there had been marked improvement with alteration of diet and with the administration of sodium salicylate. The glycosuria rapidly diminished and there was great increase in weight. For 12 months she was able to resume carbohydrates, while continuing to take sodium salicylate. Then sugar reappeared, and she again came under my care in April, 1909. On this occasion, although similar precautions were adopted, there was not the same rapid improvement. The weight increased from 8 stones 4 pounds to 8 stones 11 pounds in three months, but the sugar never disappeared from the urine, diacetic acid and acetone were frequently present, and there was marked increase of the daily percentage of urea. To all outward appearance, however, she seemed well; she was always bright and cheerful and did not complain of fatigue. She returned to her home in the country in July, and I heard good reports of her progress until Oct. 30th, when she had sudden severe abdominal pain with slight sickness. pain was located in the lower part of the abdomen, and was suggestive of colic due to appendicitis, but it was not associated with rigidity of the abdominal walls, and it yielded in the course of 24 hours with the use of warm applications. As she had recently been exposed to cold it was hoped that the trouble might be merely a severe attack of intestinal spasm. Four days later, however, vomiting returned and became persistent; the diacetic acid and acetone increased, and the patient rapidly lost flesh and strength. When I saw her on Nov. 6th she was bright and cheerful, there was no localised pain over the abdomen, though there was a general sense of discomfort. She told me that the vomiting occurred suddenly without being accompanied by nausea. There was some headache, not severe, and the pupils were both moderately dilated and did not react to light on ophthalmoscopic examination. Within a few hours, however, she became comatose and gradually sank.

In view of the readiness with which patients with diabetes suffer from tuberculosis, the peculiar type of the vomiting at first led me to think of tubercular meningitis, but the optic discs did not support this hypothesis, there was no indication of paralysis beyond the sluggish nature of the pupils, and the ending was far more rapid than is customary. Vomiting has been mentioned as a precursor of coma, but it is not a frequent symptom, and when, as in this case, it appears to be primarily associated with severe abdominal pain, it is easy to understand that an erroneous diagnosis of appendicitis may readily be made.

To compare such cases with the gastric crises of tabes is, I think, rather unfortunate. The symptoms are, to my mind, far more suggestive of vomiting of toxic origin affecting the central nervous system.

I am, Sir, yours faithfully,

Harley-street, W., Nov. 29th, 1909.

NESTOR TIRARD.

THE VACCINE TREATMENT AND THE NEGLECT OF CLINICAL SIGNS.

To the Editor of THE LANCET.

SIR,—It appears to me that the system upon which the vaccine treatment of disease is being established gives cause for regret in that it asks but slight attention to clinical signs, though in the out-patient departments and in the wards of the hospital, physicians and surgeons have, till now, at any rate, been constantly urging their great importance before the

student. In some institutions, indeed, this modern treatment is being carried on somewhat independently of, or apart from, hospital work. In some cases the vaccine-therapist may scarcely have set eyes upon the patient. "Only let me have," says he in another case, "a sample of his blood, and I will treat his disease." This almost suggests the practice of the man who engages to supply the character of a person after merely studying a specimen of his handwriting. I deplore this neglect of the clinical method, and give herewith a marked instance of it.

Last week a lady was brought to me because of a glandular swelling beneath the upper part of her sterno-mastoid muscle, for the treatment of which she had previously been under the care of a highly accomplished vaccine-therapist. He had examined her blood, and at intervals had given her three injections of what I suppose was tuberculin, as, much to her alarm, he had told her that he thought her trouble was of tubercular origin—though appaswelling was slowly increasing in size, and she was now fearing lest an operation should be necessary. The case may well have been tuberculous, and she may have been ill-advised to leave the vaccine therapist to go to a general surgeon. But the point of my remarks is this, that whilst she was under his care he did not (as I was assured) examine the teeth or look into the mouth. On my making an inspection, however, I found a chronic abscess about the stump of the first lower molar tooth of that side, for which I advised immediate extraction. In my opinion this was the actual cause of the trouble, though I think it quite likely that the septic adenitis may have been followed by tuberculous invasion of the damaged tissue.

The time surely has not yet arrived that the vaccinetherapist can rise superior to those methods of investigation which are taught as the A B C to students as soon as they begin clinical work. It is far more important in such a case to examine the teeth than the blood, and a neglect to do so is apt to bring the newer methods into disrepute-methods which at present are still upon their trial.

I am, Sir, yours faithfully,

Great Cumberland-place, W., Dec. 6th, 1909. EDMUND OWEN.

THE THERAPEUTIC VALUE OF LIQUID AIR AND SOLID CARBON DIOXIDE.

To the Editor of THE LANCET.

SIR,—We have read with interest the paper by Dr. Reginald Morton in your current issue on "The Treatment of Nævi and other Cutaneous Lesions by Electrolysis, Cautery, and Refrigeration." To his main thesis we do not wish to take any exception, but we beg to differ from him as to the usefulness of liquid air. He says: "It is extremely difficult, even impossible, to use it in an efficient manner. Its liquid form is responsible for this, making it difficult to control, and impossible to make use of that most important adjunct—pressure." We have made an extensive use of this agent during the past two years in the treatment of lupus erythematosus, nævi, and "port-wine stains" with very gratifying results, and have not found that difficulty in using it which Dr. Reginald Morton indicates. We apply it by means of a piece of absorbent cotton-wool wrapped round the end of a small cane about 10 inches in length. This is immersed for about a minute in the liquid air in a Dewar's bulb, and on withdrawing it the wool is found to be saturated with the fluid. The wool is then pressed firmly against the part to be treated and no difficulty is found in graduating the pressure to the required degree. For superficial cases we have found solid carbon dioxide very good, but the action of liquid air is, in our experience, superior. - We are, Sir, yours faithfully,

Liverpool, Dec. 6th, 1909.

STOPFORD TAYLOR, R. W. MACKENNA.

THE INFLUENCE OF DIET ON THE THYROID GLAND.

To the Editor of THE LANCET.

SIR,-I should be very sorry indeed to think that I had allowed an inaccuracy to appear in my letter of Nov. 22nd, but even after reading Dr. Chalmers Watson's comments I cannot admit that this has happened. The words I used were that "excessive meat-eating is a subject that has attracted a

whole host of investigators," but they are now repeated by Dr. Watson as "a whole host of investigators have made a special study of the direct influence of diet on the thyroid gland." This elaboration and qualification do not come from me, and if, in its revised form, the statement is misleading the responsibility is not mine.

Dr. Watson clearly wishes to maintain that his experiments must be compared only with those undertaken subsequently to his own and with the special object of ascertaining the direct influence of a protein diet on the thyroid. They must not be compared with any of the earlier work dealing with the effects of a protein diet from any other standpoint. Can Dr. Watson have forgotten his own writings? He has told us that his "research was primarily an experimental investigation into the nature of avian gout and the changes in the thyroid and parathyroid glands were, so to speak, an accidental finding." I do not wish for one moment to minimise the interest of his researches, but it would be incorrect to suppose that the effects of protein diets, whether in excess or the reverse, received no attention until he began to write his papers. For more than half a century this subject has been under investigation, and he need go no further than the ordinary catalogues and indexes of scientific literature to find the references for which he

To the second part of my statement, that no other investigator has produced the enlargement and microscopical changes in the thyroid, I must also adhere. Again I cannot do better than quote Dr. Watson himself who, in recording his results,2 claimed that "this is the first time that there has been induced experimentally in animals an enlargement of the thyroid gland." He now brings this statement up to date by the addition that I am the only investigator who since 1904 has experimented on the subject. He forgets that in the discussion that followed his paper before the Pathological Society in 1906, Mr. Edmunds brought forward a series of his own in which he fed rats on a purely protein diet, but failed post mortem to find any change in the thyroid gland.

I am, Sir, yours faithfully, DAVID FORSYTH. Queen Anne-street, W., Dec. 6th, 1909.

CIVILISATION AND THE CORSET.

To the Editor of THE LANCET.

SIR,-The tendency to-day to abandon artifice and live more naturally has always appeared to me to be a most hopeful feature of modern civilisation. This is especially so in dress, a field in which artifice abounds, often to the detriment of health. As one therefore who has for some years supported the crusade against corsets, I wish respectfully to protest against the views expressed by Mr. Heather Bigg in your issue of Nov. 27th. That the corset may be of great remedial value I should be the first to admit, and, in fact, could hardly deny in the face of such an authority as Mr. Arbuthnot Lane. I gather, however, from his article on the subject that he urges its therapeutic value rather than its general use.

Mr. Bigg in his letter begins by saying that women have found by experience that corsets are indispensable. How then does he explain the fact that the experience of many women to-day is that they are better in health, and far more comfortable, for having abandoned them, and that those who are brought up from childhood without them never feel the necessity for them? He gives the extra abdominal organ as a special reason for women needing corsets; but if a corset is effectively to drive out waste blood from the abdominal viscera, surely it would divert the pressure produced by the downward movement of the diaphragm, from its general distribution forwards and downwards, to a direction entirely downwards, and so be an increased strain on the extra organ in question. Mr. Bigg says that nature has ordained women to breathe pectorally, but surely artifice, not nature, is responsible for this. Modern physiology uphoids the view that the corset is the cause of pectoral breathing in women. Hutchinson, in his "Applied Physiology," p. 195, makes the following statement:—"It is now generally admitted that this type of breathing in women is due to the wearing of corsets." The breathing of women who do not wear corsets bears this out, for it is as much abdominal and as little pectoral as in man.

¹ THE LANCET, 1907, vol. ii., p. 254. ² THE LANCET, vol. i., 1905, p. 347.

For healthy women to wear corsets habitually for the purpose of driving stagnant blood from the abdominal viscera seems to me to be an advantage entirely outweighed by the disadvantages of impeded respiration and restricted movement; and I cannot but think that the support of natural muscles, aided, if necessary, by suitable exercises, attains this end quite sufficiently. That a corset, however wellfitting, does impede breathing can be easily tested. Let any woman attempt to fasten her corset in its usual dimensions while holding her chest in a position of deep or even moderate inspiration and she will usually fail to do so. If she can do so, which is unlikely, the corset is useless for the purpose of increasing abdominal pressure.

In conclusion, I would ask at what age Mr. Bigg considers it advisable to begin wearing a corset. If the erect posture demands it, then we should be wise to put our babies into stays as soon as they begin to toddle. God forbid!

I am, Sir, yours faithfully,

West Worthing.

CECIL E. FISH, M.B. Cantab., Vale of Clwyd Sanatorium, N. Wales.

SACCULI NOT DIVERTICULA.

To the Editor of THE LANCET.

SIR,—It was my good fortune to be present at a demonstration by Dr. W. H. Maxwell Telling on the disease of the colon with which you have associated his name in THE LANCET of Nov. 27th. After his demonstration I explained my views of the condition, and I believe that they met with his acceptance. They were expressed in the "Medical Annual" (Wright), 1909, p. 210, as follows:—

met with his acceptance. They were expressed in the "Medical Annual" (Wright), 1909, p. 210, as follows:—

"Diverticula" of the colon, especially of the sigmoid, have been long known to pathologists. Only recently has their surgical importance been recognised, and chiefly as a cause of left-sided intra-abdominal suppuration or as "tumours" of the sigmoid which have been mistaken for cancer. More obscurity than probably belongs to the subject has arisen from the use of the term diverticulum as applied to these protrusions from the bowel, and small consideration shows that between them and the recognised diverticula there are many points of difference. It seems probable that all diverticula are of congenital origin. All coats of the intestine enter into their composition. All have a special vascular supply of their own. They are seldom if ever multiple, and are found at any age. The vermiform appendix is representative of this type in the normal subject. Meckel's diverticulum, due to arrested involution of the omphalomesenteric duet, has long been recognised as of surgical importance, and the existence of diverticula at different portions of the gastro-intestinal tract associated with small panceratic outgrowths has been recently added to our knowledge of these interesting conditions. Of the traction diverticula due to the drag of a limited adhesion, nothing more needs to be said than that they ought to be classed separately from any other form.

The swellings observed on the colon do not answer to our description of a diverticulum at all; indeed, their origin is so different that the confusion caused by calling them diverticula should cease. They differ from diverticulan that they are never of congenital origin, and have consequently not been found in youth; are multiple; thin-walled, because the muscular coat of the intestine is usually absent in them; they are counted in shape, do not attain to large size, and are practically limited to advanced life. In the urinary blaider, other parts of the gastro-intestina

I am, Sir, yours faithfully,

Newcastle-on-Tyne, Nov. 29th, 1909. RUTHERFORD MORISON.

ANNUAL MEETING AT THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

To the Editor of THE LANCET.

SIR,-In your report of this meeting an inaccuracy so serious appears that I am sure you will correct it in your next issue either by inserting a correcting paragraph or this letter, as you may think the better thing to do. I refer to the following: Dr. W. G. Dickinson asked the President

report of the College at page 9. Your report states that the President replied that "the body corporate" consisted of the past, present, and future Fellows and Members. As I was present I can vouch that what the President actually said was "the body corporate consists of the past, present, and tuture Members of the College." This is the reply also reported in your medical and lay contemporaries. There is a vital difference between your report of what the President said and his real reply.—I am, Sir, yours faithfully,

SIDNEY C. LAWRENCE, M.B., D.P.H., M.R.C.S.,
Honorary Secretary, Society of Members of the
Royal College of Surgeons of England.

Lower Edmonton, N., Dec. 7th, 1909.

THE HARD CASE OF THE LONDON STUDENT.

To the Editor of THR LANCET.

SIR, -- After reading your excellent articles on medical education one feels that, indeed, the medical world is "out of joint." Main issues are so often missed, and as regards Main issues are so often missed, and as regards the question of "degrees for London students" the main

issue is usually passed over.

The M.D. degree of most universities involves only a medical training. The degree is considered academic because it is conferred by a university. The arts and science training required are practically the same as for a licence. No degree in arts is taken in most instances, and excepting for preliminary work the whole training is technically medical. "There's the rub." With similar conditions of curriculum and examination there is a difference in title and in name which leads to jealousy and confusion. I place our great London medical schools on an equality with the medical departments of most universities, and I hold that those of us who took respectable positions in the class-work and examinations of those schools, and also took our licences to practise, are in no sense the inferiors, either in training or position, to the graduates of medical departments of universities. That the examinations of some universities go beyond the ordinary grade is true, and men holding those degrees are credited with the position their work has gained, but that any invidious distinction should be made in title or otherwise between the graduates and diplomates of approximately equal standing is absurd and unreasonable. The question stands thus. Is it just that London students who have passed through the training and examinations of a medical college equal in every respect to the constituent medical colleges of most universities, who have also passed examinations for qualifying diplomas recognised by the General Medical Council as sufficient to ensure registration on equal terms, shall be allowed to suffer under a technical disability in the eye of the public? It is not just! There can be no other answer.

The remedy is not far to seek. All that is required is the mill to remove the evident injustice, and a disposition to sink small jealousies and petty self-seekings.
I am, Sir, yours faithfully,

Loughborough, Dec. 4th, 1909.

J. B. PIKE.

THE INFLUENCE OF MIND AS A THERAPEUTIC AGENT.

To the Editor of THE LANCET.

SIR,-In his remarks on Dr. Morison's views concerning the influence of mind as a therapeutic agent Mr. J. Foster Palmer would seem to condemn hypnotism entirely. The sentence, "when hypnotic suggestion takes the form of inducing the patient to believe what sound reason tells him to be impossible," might be taken as an admission that this is not always the case, but other passages, in which hypnotic suggestion is termed "induced insanity," "criminal offence," "the more execrable" because enfeebling the already feeble-minded, leave no doubt that the condemnation is intended to be absolute.

I will not enter into doctrinal considerations, but it may be pointed out that hypnotism does not always mean enfeeblement of will. A patient may, with the sane part of his mind, desire a healthy ideal, but may be kept, nevertheless, in hopeless degradation by a morbid obsessive idea. In such a case—chronic alcoholism, for example—rational persuasion, as we all know, may fail utterly, whereas the interwho were "the body corporate" referred to in the annual mental influence of hypnotic suggestion may strengthen the mind against unhealthy impulse, and often cures such cases definitely, twice in my experience in the course of five minutes. Such a result can scarcely be termed "parting with reason." In Dr. Morison's excellent letter there are, it is true, as in Mr. J. Foster Palmer's, sentences which read separately contradict one another, but taken as a whole the meaning of the writer is quite clear. Rational persuasion is to be preferred, but "for those in the portice of the lunatic asylum" any kind of make-believe is better than insanity. Delusive methods are, however, seldom necessary, for an intermediate plan which is neither simple rational persuasion nor make-believe deception is available. This is the elimination of error and the credencive induction by hetero-influence of the right and the reasonable. But I cannot see what objection there can be to inhibiting absolutely by hypnotic cambriolage the impulses of a hopeless inebriate, if he cannot be rescued from slavery by any other I am, Sir, yours faithfully,

Paris, Dec. 5th, 1909.

MORAL ORTHOPÆDIST.

APPRENTICESHIP.

To the Editor of THE LANCET.

SIR,—The discussion by the County Council of the report of its education committee on the extent to which the scholars at London's elementary schools drift into unskilled labour, coupled with the interest of Sir John Knill, the new Lord Mayor of London, in the matter of apprenticeship points to a serious effort being made towards the organisation of apprenticeship under Government auspices. As you have given space to the debate at the London County Council I think you may be willing to publish a few words from one who is interested in the movement as a practical worker. There is a risk lest what is being really aimed at, which, by the way, has a large medical side, should be misunderstood.

The Lord Mayor seems to be in favour of a revival of apprenticeship under old conditions, when apprentices "lived in," but the public does not appreciate that by these words the modern sense of the term "living in" is not implied, under which adult shop employees are housed together on the premises of the shop or in dormitories in neighbouring buildings. The revival of the old apprenticeship system would make a lad a member of his master's family, sharing the family life and meals. Surely a revival of this system is impossible, and it would be a pity that anyone should confuse a very modern movement towards technical education with impossible medievalism. No apprentice would in these days either consent to or be allowed to sleep under the shop counter or in any odd corner of the premises. Decent sleeping accommodation would have to be provided for him, and where the master lived over his place of business sufficient space would as a rule be unavailable, while where the master lived in a suburb the whole principle of such "living in" would be altered, if only because the expense to the apprentice of travelling to and fro would not be compensated for by his "living in." In the olden days of apprenticeship, the lad, being a veritable member of his master's family, received the same moral guardianship as the members of that family, but this would not now be possible for numerous reasons, one being that the employer of labour often delegates his responsibility towards his own children in this direction to a schoolmaster. It is probably desirable that boys and girls just leaving school should continue to live with their parents; it is wrong that they should live anywhere where they are not under supervision.

Let us, then, leave "living in" out of the question. Apprenticeship in London in the future cannot as a rule be associated with any such practice, but must be a system under which the boy or girl beginning business is placed during working hours, with some arrangement about premium, for a definite time with an employer. It has been urged by some interested in this matter that trade schools are a better solution of the question how to increase the amount of skilled labour in this country than any attempt to revive apprenticeship, and the hygienic conditions under which children are taught in these schools are certainly superior to those existing in the average factory or workshop. The large factory run by a limited liability company, where no interest would, or could, be taken in individual apprentices, is not under consideration; at such places the

hand is only taught one process and never learns a complete The fact that general education is continued in the trade schools, so many hours per week being given to it, is an important point in their favour. Here we have something to replace the interest in the general welfare of the apprentice that was manifested by the old-time masters. trade schools could become a complete and full organisation I grant that the system would be ideal; but expense alone makes this impossible, and some form of apprenticeship must go hand-in-hand with trade schools. As an alternative to the general education in trade schools we have evening classes, but they require cooperation on the part of the master, and also a great deal of care is called for from the parents, so that overwork may be guarded against. Also at these schools there is always a temptation to work at subjects connected with the apprentices' trade and not at general education. Mr. Cooper, speaking from the labour benches in the County Council debate on the subject, urged that a larger supply of skilled labour will not create the demand seems unfortunate for two reasons. First, the foreigner is often to be found in London in positions of trust as the foreman or the skilled workman performing the more highly-finished and difficult processes in a workshop, pointing apparently to the fact that there does not exist a sufficient supply of Englishmen to fill such posts. I do not know how far this is general, but two trades occur to me where British workmen are found in inferior positions—viz., that of the optician and the ladies' tailor. Second, if the young skilled workman cannot find work at home, surely he might seek it in many colonies. The ranks of unskilled labour may there be as overfull as they are at home, but the master of his trade should surely have a better chance of finding a market. It is because so many of the unemployed become a medical charge on the community that I address this letter to you. So many of the unemployed unfortunately become sooner or later "unemployables," filling our infirmaries and hospitals and putting a heavy burden on the shoulders of the skilled and thrifty among the community. authorities, those of the Poor-law and those of the charitable organisations and hospitals alike, which deal with such problems feel that every year it becomes of more importance from the public health point of view that a greater security of return should be enjoyed by the wage-earning classes. The apprenticeship movement is towards a better equipment. mentally and morally, of the youth of this country, and medical men might well give it their support and sympathy. Both properly run trade schools and properly organised machinery for apprenticing children on their leaving school are desirable from a public health point of view.

I am, Sir, yours faithfully,

A WORKER ON THE APPRENTICESHIP AND SKILLED

Dec. 1st, 1909.

EMPLOYMENT ASSOCIATION.

NURSING ASSOCIATIONS AND MIDWIVES.—At the annual meeting in London on Dec. 1st of the Sussex County Nursing Association Mr. A. G. R. Foulerton, medical officer of health of East Sussex, stated that instead of losing 10 infants out of 100 in East Sussex last year they had lost 6 or 7, and he attributed this low mortality to the good nursing of the maternity nurses from the association. Further, out of 1800 women of the working classes attended in confinement only 4 died, death being absolutely unpreventable in 3 cases. These figures point to the good work of the Nursing Association, and those boards of guardians who do not, as they are legally empowered, subscribe towards the association are to be urged to make a contribution. Boards of guardians will probably find in the near future that it will be far more ecomomical to support these nursing associations than be compelled to make provision for innumerable maternity cases, for in April next, when the Midwives Act of 1902 comes fully into operation, no untrained women will be permitted to practise. Dr. F. H. Champneys, chairman of the Midwives Board, who was present, said the great difficulty in the question of midwives was in the rural districts, but of the 1408 successful candidates since April last 33 per cent. intended practising in the rural districts. That showed, he added, a steady influx of the women they wanted, who were prepared to practise among the poor. There was no reason to fear a serious shortage until April next, but a redistribution might be necessary and should be

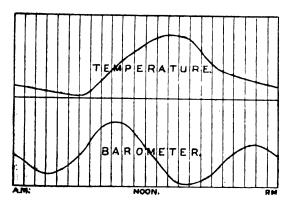
THE PRESERVATION OF DRUGS AND INSTRUMENTS IN THE TROPICS.

(FROM A BOMBAY CORRESPONDENT.)

THERE are certain things which the medical man who has never lived in the tropics can hardly realise, but these things should be known to our colleagues at home, that they may appreciate the difficulties under which some of our work is done.

We cannot open a bottle of compressed drugs without being reminded, by the care bestowed in sealing it, of the risks to which the contents are exposed in tropical countries. Metallic capsules, paratin-soaked corks, and absorbent cotton-wool within the bottle, would appear to ensure safety, but it seems to be only a matter of time for moisture, the great enemy, aided by heat, to modify, and in some cases to destroy, the value of the contents. The packing is doubtless performed with every known precaution and the drugs are freshly dried; still damage occurs in a period which varies with local conditions. Bombay, Colombo, and Singapore may be taken as typical of the worst localities where heat, light, and moisture combine to produce the most destructive effects upon all organic substances. Vegetable drugs in the form of leaves and roots, although compressed tightly in bales, cannot be stored for many weeks during the monsoon without being attacked by fungi which destroy the parts affected. Deliquescent salts by the absorption of moisture alter their weight value and compounded drugs in time lose their value by the chemical interaction of their constituents.

The penetration of moisture into closed vessels is due to two principal causes. The daily fluctuation of temperature in the air produces an alteration of volume, which passes from a minimum just before sunrise to a maximum between half-past 2 and 3 o'clock in the afternoon. If we assume a daily range of temperature equal to 15° F. the alteration in volume of the free air would be almost 3 per cent., but if enclosed in an air-tight and rigid vessel it would produce a pressure equal to 60.42 pounds per square foot of internal or external pressure, according to the hour at which the vessel The other cause is due to changes of barowas sealed up. metric pressure that take place twice daily, having their maximum at about 10 o'clock, morning and evening, and their minimum at about 4 o'clock, morning and afternoon. The ordinary range is one-tenth of an inch, but it extends to half an inch at times, and when the barometer falls to that amount the internal pressure on a box, a glass case, or bottle, if tight and rigid, is increased by 35.2 pounds per square foot. The enclosed air, if allowed to expand, would increase by 2.8 per cent. The subjoined curves represent the mean diurnal fluctuation of temperature and barometric pressure at Bombay; the vertical lines, representing hours, enable the reader to observe how they act in relation to each other



The two influences of temperature and pressure act in opposition to each other from about 6 in the morning in Bombay until 9.30. From this time until 3 P.M. their joint influence is in favour of expansion, and afterwards until 10 P M. their joint action causes reduction of volume. After this and until 6 A.M. they act in opposition. They rarely balance each other, and the result is an almost constant | The result is a flexible cylindrical cap fitting on to a rigid

change of volume and temperature throughout the 24 hours. and with these a constant change of atmospheric humidity. A movement of air is thus set up in all imperfectly closed vessels that carries water vapour in and out, and if any absorbent material lies within the vessels it is likely to absorb moisture to some extent. The same influence that carries in moisture introduces dust, but whilst some of the moisture may be carried out again the dust remains as it falls in the still atmosphere within. Absolute and permanent airtightness seems only possible when the vessel is of metal and closed with solder. The extreme changes to which goods sent from England may be exposed in the tropics is indicated in the subjoined table, which shows how much water in a state of vapour may be contained in a cube of air with a side of 10 feet when saturated :-

Degrees of tempera- ture (Fahr.).		Water vapour in 1000 cubic feet.	Degrees temper ture (Fal	a-	Water vapour in 1000 cubic feet.	
32		0·30 1b.	82	••••••	1.72 lb.	
42		0.44 ,,	92		2.36	
52		0 62 ,,	102		3.20	
62		0.89 **	112	•	4.33 ,,	
72		1.25	122	••••••	5.84	

In London the mean annual temperature is 49 · 2° F .. while that of Bombay is 79 · 13°. The mean relative humidity in these places is 82 and 77 per cent. respectively. By reference to the above table it will be found that the corresponding weights of water vapour are 0.57 and 1.135 lb., the latter being 2 · 22 times the former. On August 3rd of this year the moisture in the air of Bombay weighed 1.56 lb. per 1000 cubic feet.

The various modes of closing bottles and other vessels with wax, paraffin saturated cork, rubber rings or washers. are all affected by changes of volume, temperature, or humidity of the air, that swell, shrink, crack, or decompose them. The evil effects of air leakage are most apparent in vessels that are not full. A vessel whose contents leave 50 per cent. of air space would be liable to a leakage of 1.43 per cent. of its contents under a change of temperature equal to 15° F., and, in the rainy season, when the air often contains 1.2 pints of water in vapour form per 1000 cubic feet, it is not difficult to imagine how the breathing action of any imperfectly closed case may affect its contents. Stores in India may, for many days together, contain an atmosphere of this kind, and the only mitigation possible is the admission of ample light with free ventilation as soon as the outer air is found to have become less moist. Absolute dryness in the air of a closed package may be left out of practical consideration on account of the extreme difficulty of obtaining it, but as all materials may be preserved in good condition for a certain time in an atmosphere containing some moisture it will suffice to consider the available means for this purpose. And as a soldered tin case is recognised as the most completely closed vessel, attention will be mostly directed to vessels having lids that must be opened occasionally, even if at long intervals. The tightness of barrels is far from complete in India. If filled with water or with any watery liquid there is a steady evaporation through the wood unless it is kept in a very damp atmosphere; if filled with oil and exposed to the sun or to a dry wind the oil will begin to leak owing to evaporation of moisture from the wood which the oil does not replace. Boxes built of wood, whose grain lies in different directions, cannot be kept airtight owing to shrinkage and swelling, due to changes of atmospheric humidity. grain of the lid and the sides of a box do not all lie in the same direction, and as paint or varnish are no complete protection against the penetration of moisture the movement of shrinkage and swelling in time causes air leakage.

Tin and other rectangular boxes of metal always leak at the joint of the lid, whatever may be said to the contrary. The tightest metallic cover joint, setting aside those that are closed with the aid of screws, is made like that of a tea or coffee canister, but with the following difference. The neck, about 13 inches high, is tapered with a slope of one-sixteenth in two inches. The cap or cover may be four inches deep and is cylindrical in shape. The edge of the mouth is not stiffened by folding. It must fit tight over the neck when pushed down to within half an inch of the shoulder of the box. The joints of the sides of neck and cap that come in contact must be quite smooth and even.

conical neck, forming a true contact joint all round which may be closed tight without sticking. A little oil or vaseline facilitates the use of this lid. Within the lid is a small hook of wire on which may be hung a bag with quicklime to absorb moisture from the contents of the box, which may be made square or round. The lid may be made up to 9 inches in diameter. This box has seen many years of service in Bombay for the preservation of the most diverse materials.

Although rectangular tin boxes do not close well, and wooden boxes have the faults already mentioned, a very useful combination may be made of the two materials, the one supporting the other. A useful dry chest may be made from a good packing case of suitable size. The case is put in good repair and closed. The lid is then cut off, along with three or four inches of the body to form a ledge. The sawn part of the body is then planed true and level, and rubbed with chalk. The lid is similarly treated until when rubbed on the body the chalk mark is transferred all round. The hinges are applied from the outside and screwed in place while the lid is pressed down with weights. The interior of the box and lid are lined with tin-plate or zinc, which is tacked round the edge of the lid-joint, but does not encroach upon it. Hooks are added on the outside to keep the parts in close contact when shut. A small amount of quicklime in a box or bag placed near the top of the box will keep the air dry enough for the protection of books, papers, instruments, and other things. Protection against the white ant may be obtained by painting the exterior of the box with mineral spindle oil, which is worth about 20 pence a gallon. This oil sinks into the wood and imparts such a bitter, unpleasant taste to it that vermin avoid it.

The preservation of instruments, especially if made of steel, has of late years received attention in India, as may be seen in the use of nickel plating and of metallic racks for holding them. Leather, velvet, and cloth linings for instrument cases are still much used, and as these materials are all very absorbent they communicate moisture readily to all unprotected steel surfaces and to cutting edges, such as lancets, knives, and hypodermic needles. From information obtained among operative cutlers it appears that surgical instruments are very much neglected in India, especially among medical men trained in the country. The dirty condition in which they often arrive for repairs indicates gross carelessness which may have caused many an unrecorded disaster, and as leather- and velvet-lined cases are the most commonly used the exposed steel surfaces are often pitted with rust. The people of India, who will make any sacrifice for the sake of creemonial purity, are very indifferent to many of the requirements of cleanliness and sanitation.

Next to plated metal the best material for cases seems to be wood that has been soaked in paraffin wax by immersion in the hot material, and stoving until the surplus drains off. Bay-wood so treated gives good results either for the case itself or for linings and trays. It must be dovetailed, nailed, or screwed together, as glue will not adhere to it. Vaseline has been found to offer less protection to fine instruments than what is known as neutral oil, which would seem to imply that the vaseline has not been properly washed after refining.

Preservation of goods by cold storage has made little progress in India, although the 30° increase of average temperature above that of England renders it so much the more desirable, but it is, for the same reason, more costly than in a temperate region. Cold stores will become a necessity in India as soon as the fish supplies of our large sea-coast cities are obtained in a modern and systematic manner, and then the importers of drugs and instruments that suffer deterioration may insure their property against loss while in stock.

PROPOSED ADDITIONAL ASSISTANT MEDICAL OFFICER FOR THE LONDON COUNTY COUNCIL.—At the meeting of the Education Committee of the London County Council on Dec. 8th, the general purposes sub-committee presented a report upon the work of the medical department (education), and recommended that to meet the increasing pressure an additional assistant medical officer in the public health department should be appointed at a commencing salary of £500 a year, rising by annual increments of £50 to £700 a year. The consideration of the report was postponed.

DISPOSAL OF SEWAGE IN TORONTO.

(FROM A CORRESPONDENT.)

TORONTO is situated on the northern shore of Lake Ontario, facing south, on a plateau gently ascending north for a distance of three miles, when an altitude of 220 feet above lake level is reached. It extends for a total distance about eight miles along the lake. The topography is fairly uniform, with an even slope to the shore. The most populous portion of the city extends for a distance of about two miles along the shore of the harbour. This harbour is a natural basin formed by a sand ridge known as The Island, which encloses it on the south and partly on the west. The mainland on which the city stands is its northern boundary, while the eastern part of the harbour is bounded by marshy land through which flows the river Don. The harbour is roughly semicircular and about one and a half miles in diameter. It has two openings, one on the west between the mainland and the island, a distance of less than half a mile, and a considerably smaller entrance to the east, named the Eastern Channel. Owing to the narrowness of these channels the water is practically stagnant.

Since the year 1833 or thereabouts, when Toronto was known as York, its sewers have emptied themselves into the harbour. In 1834 Sir R. Bonnycastle, who made a report concerning the state of the harbour, advised that the sewers should not be constructed so as to discharge into it. Mr. K. Tully, previncial surveyor, wrote as follows on the same subject in 1855: "The deposits from the sewers of the city into the harbour are much more considerable than would at first be supposed. From experience in the construction of wharves, &c., it has been found that from Conge-street, on the west, in distance about midway of that part of the city fronting the harbour, to the river Don on the east, the end of the harbour, the average depth of deposits from sewers alone is not less than two feet; taking the distance to be 5000 feet, with an average breadth of at least 300 feet, we have a quantity equal to something like 100,000 cubic yards, a very serious amount considering it only extends over a period of 20 years." Mr. Tully also recommended that the sewers should no longer be led into the harbour. Matters, however, remained as before, and when the fact is taken into consideration that during these 70 years Toronto has immensely increased in area and that its population has advanced by leaps and bounds the condition of the harbour at the present time may be easily imagined.

The sewerage system of Toronto is fairly complete for collecting sewage and rain water. It is what is known as the combined system, with the exception of an outlying suburb, which has a separate system and which will be described at the conclusion of this paper. Most of the sewers run in a southerly direction at right angles to the shore of the lake and harbour, but a few run east and west. The general result is that two-thirds of the sewage is discharged into the harbour. Those sewers which run at right angles to the lake are generally kept well cleansed by storms, but those on the east and west streets have gradients too flat to cleanse themselves, and have to be flushed more or less by artificial means. Two large sewers discharge into the lake to the west of the harbour, the larger one of which was originally a creek (Garrison Creek), but has been converted into a sewer. There are about 290 miles of sewers which are admittedly well kept and excellently supervised by the city engineer and his staff. Gaugings taken of the dry weather flow in the main sewers in 1908 showed the quantity to be about 73 gallons per head.

There are, then, two valid reasons why the harbour should not be utilised for the disposal of sewage. One is that it is in close proximity to the most populous part of the city, being in the summer time traversed by steamers and boats, the routes of which are marked on the map and to whose passengers the odour alone is offensive. The other and by far the more important reason is that which concerns the water-supply. A considerable part of the water-supply of Toronto is derived from the lake by means of pipes laid on the bottom of the harbour which cross the island, the intake being at a distance of nearly 2000 feet from the southern or outer shore of the island. As already mentioned, the bottom of the harbour is covered to a depth of some feet with sewage

deposit; it is therefore always possible that the contents of the pipes may become contaminated by accidental leakage, and in any event the intake of the water is too near the

deposits of sewage.

In 1907 there was a good deal of agitation in connexion with the water-supply, and the medical officer of health, in addition to making the usual bacteriological examination of the water, also had it analysed during the three autumn months. The results were not satisfactory, and he advised that the citizens should boil the water before using it for drinking purposes. This warning further alarmed the inhabitants, who demanded filtration of the water-supply, and from that date no strong objections have been brought against providing money for schemes calculated to ensure as pure a water-supply as possible. But action in Toronto, I am glad to say, did not have its origin in a scare. The movement for securing better conditions than those existing took practical shape about 20 years ago, for in 1889 Messrs. R. Hering and S. Gray, well known civil engineers of New York, were called in by the city authorities of Toronto to advise as to an extension of the water-supply and the disposal of the sewage. They naturally said that if it were desired to continue the water-supply from the lake the sewage must be removed to a location so far distant from the intake that there could be no possible fear of contamina-

tion from this source. They pointed out that there were two alternative methods of dealing with the sewage. One was land treatment, which they dismissed as being too expensive and as requiring too great an area of land. The other alternative was discharge of the sewage into the lake at a point outside the harbour either in a crude state or after artificial treatment, and they decided in favour of discharging the sewage in a crude state into the lake at a somewhat considerable distance from the citv. They re-

commended for this purpose that two large intercepting sewers should be into the lake to a distance of 3500 feet from the constructed, the first of which, or high level sewer, should intercept the drainage of the greatest area that could be economically conducted to the outfall by gravity, while the second, a low level sewer, should intercept those sewers which did not run into the higher one.

With certain modifications these plans are to be closely followed, and it was decided some few months ago that the work of constructing the high level sewer should be commenced. The present plans provide for the building of two intercepting sewers which will run parallel to the shore from Garrison Creek sewer, slightly to the west of the western end of the harbour to a point nearly at the eastern extremity of Ashbridge's Bay, a distance of two miles from the harbour. The departures from the plans of Messrs. Hering and Gray are that the sewage is not to be discharged into the lake in a crude state, but is to be treated in the vicinity of the outfall which will be nearer the city than that suggested by Messrs. Hering and Gray, for which purpose sufficient land has been purchased. Owing to this fact the intercepting sewers will not be so long as those proposed by the New York engineers, but in all other essential details the plans are practically identical.

Calculating somewhat roughly, the high-level intercepting sewer will be placed at an average distance from the lake shore of between 2500 and 3000 feet. This sewer will receive

the drainage of the whole of the district to the north, that is to say, the sewage of by far the greater part of the city. low level sewer is to be situated at a distance of 2000 feet or so from the high level sewer, and is intended to intercept the drainage between the two intercepting sewers, largely trade waste, for although factories are not numerous in Toronto as yet, the city is developing and no one can set bounds to the directions or extent of its progress. The intercepting sewers are to be constructed of brick and concrete, and will receive only the dry weather flow, plus a small quantity of rainfall; the excess during heavy rains will be allowed to continue its natural course. No house connexions will be taken into the interceptors, all sewage entering at street intersections, where the main sewers meet the interceptors. The high level intercepting sewer will vary in size from 6 feet to 10 feet in diameter, and will be so laid that the contents will have a velocity of 4 feet per second. The maximum diameter of the low level intercepting sewer will be 5 feet. Both the intercepting sewers will be five and a half miles in length, and in their course will pass under the stream at the east end of the harbour, named the Don. The low level intercepting sewer will be pumped into the channel at the disposal works near the outfall, the channel carrying the drainage from both intercepting sewers into a small basin, when

treatment will follow. First, the sewage will be run through screens, which will remove the coarser matter in suspen-sion, and will be then passed into sedimentation tanks, which are to be built "hopper' shaped, somewhat after the style of the "Dormund" tanks, and similar to some of the sedimentation tanks now installed in Birming-ham. The liquor after remaining in the tanks for the usual period of three hours will be discharged over weirs into effluent carriers and will flow by gravity into the main carrier which will convey the sewage thus treated

RIVER DON SWI MI ESTERN CHANNEL ₽O!H 0 В R 0 LAKE ONTARIO

Sketch map of the harbour and island of Toronto.

shore. It may be stated that the lake at this point is 30 feet deep. The part of the lake from which Toronto derives its water-supply is distant about five miles to the west of the site of the proposed sewage disposal works, and observations have shown that the trend of the lake current is chiefly in an easterly direction—that is, in a direction away from the intake. It is considered that the high level intercepting sewer, which will be completed, it is estimated, in two years' time, will be capable of conveying the sewage of the greater part of the city to the disposal plant, thus relieving the harbour to a very large extent. When both sewers have been built and are in working order the entire mass of the sewage will be removed beyond the danger zone. The above is a broad description of the sewerage system which is to be introduced into Toronto. It should be stated that Mr. R. Hering of New York and Mr. J. D. Watson of Birmingham, England, visited Toronto some few months ago to consult the city engineer and to advise on the proposed system for disposing of the sewage, and that both cordially approved of the plans about to be carried out.

Owing to the impossibility of connecting the Woodbine district to the East of Toronto, which had no drainage system, with the city sewers, and owing to the rapid increase of population in the district, it was found to be absolutely

necessary that something should be done to improve its sanitary conditions. The municipality of East Toronto procures its water-supply from a point three-quarters of a mile east of this district and as the board of health objected to crude sewage being deposited in the lake, it was decided to lay a sewerage system and to construct septic tanks and bacteria beds to treat the sewage. The drainage area of the district is 185 acres and the population in the summer is in the neighbour-hood of 11,000 persons. 18,000 feet of sewers were laid to convey an estimated sewage of 550,000 gallons daily. The disposal works consist of 3 septic beds and 12 bacteria beds. When treated the effluent is discharged into the lake.

From the foregoing description of the alterations designed and in progress it will be gathered that in the course of a few years the city should have a satisfactory system of sewage disposal.

By the courtesy of Mr. Charles H. Rust, city engineer of Toronto, and of Mr. A. C. D. Blanchard, assistant engineer in charge of the drainage department, I was afforded every facility for acquiring information with respect to the sewerage system of Toronto.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The University.

THE annual dinner of the past and present students of the Medical School was held at the Grand Hotel on Nov. 25th. Professor J. T. J. Morrison presided. After the toast of "The King" had been honoured, Mr. Charters J. Symonds, senior surgeon to Guy's Hospital, proposed that of "The Medical School." Professor H. Gilbert Barling, Dean of the Medical Faculty, in responding, referred to the many changes which had occurred in the staff, and especially to the death of Dr. A. Foxwell and the appointment of Professor A. Robinson to the chair of anatomy at Edinburgh. Dr. O. J. Kauffmann, senior physician to Queen's Hospital, proposed the toast of "The Guests," and this was responded to by Sir James Barr and Professor Peter Thompson, the newly appointed professor of anatomy. Musical items we rendered by Mr. B. A. Lloyd, Dr. Walsh, and Dr. Aitken. Musical items were

The Huxley Lecture.

This lecture, which is open to the public as well as to friends of the University, is delivered annually by an eminent investigator in biological science. This year Professor Bateson, F.R.S., gave a masterly exposition of "Mendelian Heredity," a subject peculiarly appropriate for a Huxley lecture.

Priestley Relies.

A valuable collection of Priestley relics has been presented to the University library. They have been continuously in the hands of the Priestley family, and the donor is Miss S. P. Wainwright, a great-great-granddaughter of the discoverer of oxygen. The gift includes about 70 books from Priestley's own library and bearing his book-plate, most of them being volumes of his own works. Among them may be noted "The History and Present State of Electricity, with Original Experiments by Joseph Priestley," published in 1767 and dedicated to the Earl of Morton, P.R.S., and "The History and Present State of Discoveries Relating to Vision, Light, and Colours," dedicated to the Duke of Northumberland and published in 1772.

The Hospitals of Birmingham.

A special course of lectures on Birmingham institutions is being given in the University under the auspices of the Workers' Educational Association. On Nov. 25th Alderman Lloyd lectured upon "The Hospitals of Birmingham," the chair being occupied by Professor Priestley Smith. oldest institution is the General Hospital, promoted by Dr. Ash in 1765 and opened with 40 beds in 1779. expenditure on hospitals now amounts to £96,125 a year. Much attention was paid by the lecturer to the right use of hospitals and the possibility of rate aid at some future time.

Birmingham Medical Mission.

The thirty-fourth annual report of this institution shows that 7413 cases were treated in the past year, in respect of

of the institution, medical, evangelical, and social, is carried on at an expenditure of less than £1300.

Guest Hospital, Dudley.

At the annual meeting of subscribers to this hospital it was stated that, having regard to the improved financial position of the hospital owing to the munificent bequest of the late Mr. Hugh Lewis, the committee felt that greater completeness and efficiency should be aimed at, and the following improvements were recommended: (1) the reconstruction of the lavatories and bathrooms in the men's wards; (2) a new detached building for surgical and ophthalmic outpatients, and possibly a dental department; and (3) a new boiler for the laundry and supply of hot water to the hospital. An enlargement of the children's ward is under consideration

Crick District Council and the Medical Officer of Health.

The medical officer of health for the various councils comprised in the Mid-Warwickshire joint sanitary district has officiated in that capacity for the Crick rural district council. Owing to the withdrawal of Yardley from the combination, and the resignation of Mr. A. H. Wilson, the Crick council has to make a fresh appointment. The Local Government Board urge the appointment of a whole time medical officer by the mid-Warwickshire joint sanitary committee. There is, however, a strong feeling in the district in favour of the appointment of a local practitioner, and the council has written to the Local Government Board asking if it would continue as now to pay half the salary of a local man.

Dec. 6th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Hospital Sunday.

THE collections on Hospital Sunday do not do credit to any claims to, or assumptions of, philanthropy that Manchester may put forward. This must be said, even after allowances have been made for the fact that many of the wellto-do live out of town and that the churches and chapels may also suffer from "the week-end" habit. It would be so very easy for those who live away, and those who go away, to arrange that their contributions (which they would have been so delighted to add to the collections, only unfortunately they were out of town) should be given by proxy that it is quite unaccountable that that little arrangement was not carried out. In the meantime the old custom holds that the few, those whose names are to be found among the subscribers to most of our institutions, are supporting the hospitals rather than the many. The many may not be able individually to give much, but if they gave a little, just what they could well afford, there would be a rich harvest for the hospitals. At the annual meeting the other day the Lord Mavor (Mr. Charles Behrens) said he was thoroughly dis-satisfied with the result of the fund, and also with the cost of its working—over £200 to collect £3600. He said that during his year of office he intended to do all he could to make the fund more effective. He should be extremely sorry to see the municipalisation of charitable institutions as he believed they could be managed more economically and sympathetically by voluntary workers. The Mayor of Salford (Alderman Snape) agreed with the Lord Mayor that the sum was beggarly, and suggested that there should be a small committee in connexion with every church where the collections were made. The treasurer said he had been distressed about the fund for many years. The Dean (Bishop Welldon) questioned whether February was the best time of the year to make the collections, as many others have done before him. He spoke somewhat severely about the insufficient sense of public duty on the part of influential citizens, some of the richest of whom did not discharge their public duty at all, and "the only reason that he should desire that the hospitals should come on the rates was so that these citizens should not escape the burden of their upkeep altogether. It remains to be seen whether the people of Manchester and Salford will be persuaded or shamed into an increased sense of their duties to those less fortunate than themselves.

Treatment of Canoer.

At the annual meeting of the Manchester Christie Hoswhich 32,421 attendances had been made. The whole work pital (Cancer Pavilion and Home), which was held on

Dec. 3rd, some interesting work was reported. During the last year 110 in-patients and 68 out-patients were treated, as against a total of 156 in the previous year. Of the 93 new cases, 37 were males and 56 were females; 9 of them were recurrent after previous operations when first admitted to the hospital. During the past year a permanent abode was provided for 63 patients who could not be properly treated at home. All of them were admitted in an advanced stage of the disease, too late to allow of any chance of very much benefit, to say nothing of cure, but with the hope of alleviating suffering as much as possible during the remainder of their lives. All died in the hospital, and so the death-rate is much higher than that of any general hospital. The Lord Mayor, who was in the chair, and Sir Edward Donner, in moving and seconding the adoption of the report, spoke feelingly on the subject of cancer, and the former said, "the only consolation was that the whole medical profession was bent on the discovery of the causes of, and the cure for, cancer," while the latter paid a well-merited tribute " to the matron and nurses who took charge of the cases, which must often be of an extremely trying nature." Professor R. B. Wild made some valuable observations on cancer research, and "wished that the other hospitals in Manchester would join in inaugurating a fund for the purpose of coordinating research as to cancer, because he believed that in that way only could they obtain any real value from the study of cases of cancer." During the last 17 years they had tried every method of treatment that had a reasonable basis of probability that it might do good, some 20 or 30 methods, without the anticipations of the inventors being realised, but they had gained much experience of the utmost value for the relief of patients and the prolongation of their lives. He thought that if there were a committee to coordinate the work they would obtain more valuable information than by simply looking at one aspect brought out by one hospital. Professor G. A. Wright thought that it would be better to have a research centre in Manchester than to trust to the work done elsewhere. As regards the hospital, they wanted to assure people that cancer was not always hopeless if advice was taken in the early stages. Of course, with cancer, as with "consumption," delay is fatal, but there is the great difficulty that the patients are for a long time unaware of their danger. Professor Wright spoke also of the danger from "quacks." He knew of one scoundrel, living not far from them, he said, who let a woman with nothing more than a wart on the tongue go about with a bottle of "cancer lotion," and of course live in dread of cancer. "They had to get people to realise the folly of dealing with quacks. The cruelty of quacks and the speculative hopes that lead so many to trust in the divine inspiration of anyone who is called an irregular practitioner are mutually supporting.

The Fight Against Tuberoulosis.

The question of the best way of dealing with tuberculosis among the poor becomes more and more pressing. Boards of guardians are in great difficulties, for in many unions the numbers to be dealt with are alarmingly great. The matter recently came under discussion at a special meeting of the Chorlton board. As always, the special difficulty was the late period at which most of the cases come under observation and treatment. In the Withington Hospital 300 or 400 cases are admitted every year, of whom not more than 12 or 15 are fit to go to sanatoriums. There is no power of detention, and many hopeful cases, driven by the need to work, leave prematurely. At present the board has 11 patients in sanatoriums at a cost of £1100 a year, and the Manchester corporation pays £2000 a year for 20 beds at the Delamere Sanatorium. These numbers, however, are but as a drop in the bucket, as the chairman said. Where the head of the family is ill with phthisis, his wife and children cannot be allowed to starve, so that it is easy to understand the enormous expense involved in even the most economical methods of dealing with this scourge. The medical officers of the union were present and agreed generally that when first seen the cases were, as a rule, too far gone for sanatorium treatment, but if it were known that it was available there would be many applications. Dr. J. S. Orchard, who had been for many years resident at Withington Hospital, was not very sanguine as to the permanent effect of sanatorium treatment, for though the patients were practically well while in the sanacorium, "after six months of hard work and insufficient food

in unhealthy surroundings they relapsed." In the end it was decided to ask the Manchester board to join the Choriton board in approaching the health department of the Manchester corporation and request it to provide sanatorium accommodation for consumptives. This is a formidable but a very desirable undertaking. It shows how severe the struggle must be if consumption is to be banished from our midst.

Dec. 7th.

WALES.

(FROM OUR OWN CORRESPONDENT.)

Housing in Wales.

The reports which have been issued in recent years, not only of the medical inspectors of the Local Government Board but also of the district medical officers of health, have revealed conditions of housing in various parts of Wales which can only be described as deplorable. In no part of the kingdom is there greater need for efficient administration of those Acts of Parliament which refer to the housing of the working-classes, but it is to be feared that the sanitary authorities whose duty it is to initiate reforms will not be stirred to activity unless the pressure of public opinion is brought to bear upon them. A first step towards the concentration of that opinion has been taken in the formation of a Welsh Housing Association for the purpose of investigating the facts relating to housing conditions in Wales and for bringing within reach of the people the means of reform upon the most modern lines.

School Dentistry in Cardiff.

Arrangements have been made with eight dentists in Cardiff to attend to the teeth of the children attending the public elementary schools upon the same terms upon which they attend members of the Provident Dispensary. The education committee will thus pay them 6d. for each tooth extraction and 2s. for each stopping.

Collicry Surgeons in South Wales.

Although for the most part the relations between the colliery surgeons and the workmen employed in the South Wales collieries are of a satisfactory character there are instances here and there where some change is desired either by the men or the surgeons. At a meeting of miners held in the Rhondda valleys on Nov. 29th it was stated that a ballot of the men had decided in favour of the establishment of medical committees, by whom the colliery surgeons should be appointed and under whose supervision they should be placed. Those who have watched the development of the colliery districts during the past 25 years cannot fail to have noticed the admirable manner in which Mr. W. Abraham, M P. (Mabon), has used his influence with the workmen when conflicts with the masters have been imminent, and it cannot be denied that disputes between the surgeons and the men would have been of much greater frequency had it not been for the restraining influence which he has been able to exercise at the proper moment.

Damages against a Dairy Farmer.

An action lasting nearly four days has been tried at the Liverpool Assizes in which the proprietor of a boys' school near Conway claimed damages against the executors of a dairy farmer on the ground that typhoid fever had been introduced into the school through the agency of the milk supplied from the farm. The farmer's housekeeper and her daughter had been attacked with the disease and he himself subsequently died from it. The outbreak at the school began early in April about a fortnight after the housekeeper had returned to the farm from the isolation hospital. Several of the poys were attacked and later the schoolmaster, his daughter, and wife were infected, the illness of the last terminating fatally. Cases occurred in other houses besides the school where milk was supplied from the same farm, altogether about 24 cases being reported. was some conflict of evidence as to the cause of the school outbreak. Sir James Barr and Dr. Meredith Young maintaining that it was due to the milk-supply, while Mr. A. G. R. Foulerton, Dr. T. R. Glynn, and Dr. Nathan Raw contended that the milk was not responsible and that the primary cases became infected indirectly through the condition of the foreshore of the river Conway. In the course

of the evidence it transpired that the proprietor of the school had taken the precaution to obtain a certificate to the effect that the drainage of his house had been found after examination to be in a satisfactory condition. He had also secured a favourable report as to the water-supply of his own house and as to the sanitary condition of the dairy farm. When summing up Mr. Justice Bray stated that there was an implied warranty that the milk supplied to the school was reasonably fit for consumption. The jury gave a verdict in favour of the schoolmaster, and assessed the damages at £500.

Dec. 6th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

An Edinburgh Cremation Society.

Dr. W. G. Aitchison Robertson, who has been a consistent advocate of cremation in Scotland, on Dec. 3rd delivered a lecture in the Goold Hall, Edinburgh, in which he expounded the sentimental, sanitary, and economical advantages of disposing of the dead by cremation and the corresponding disadvantages attaching to earth burial. He was followed with attention and at the close of his address a resolution was passed unanimously to the effect that an Edinburgh Cremation Society be formed to promote the practice of cremation. A committee has been already appointed to adopt a constitution and elect officers for the society.

High Death-rate in Glasgow.

The five continuous days of dense fog which prevailed in Glasgow in the third week of November are apparently responsible for the great increase in the death-rate. For the week ending Nov. 13th the death-rate was 18.0, and for the next week, during which fog constantly prevailed, 24.9 per 1000. This latter rate is greatly in excess of the average, which is 17.5 for the fourth quarter of the year. The number of deaths of infants under one year rose from 106 to 149, of children under five years from 191 to 279, and of persons over 60 years from 118 to 150. As is to be expected, the largest increases occurred in deaths attributable to the various forms of lung disease, and the rate from these diseases rose from 4 to almost 8 per 1000. The number of deaths from all causes, which had been 283 in the first week, was 395 in the second. Deaths attributable to acute disease of the lungs, which had been 82 in the first week, were 134 in the second week; deaths from consumption increased from 16 to 31, and from measles, which most commonly proved fatal through lung complications, from 20

Railway Conveyance of Milk.

The public health committee of the Glasgow corporation has been in touch with the various railway companies as to the question of allowing milk-churns and milk-butts to be sealed so as to prevent unauthorised persons at the stations or in the course of transit opening the lids of the churns or taking the cocks out of the milk-butts, thereby causing contamination. The subject was discussed before a meeting of the associated railway companies, but they declined to concur in the proposal. They were of opinion that the seals would be very liable to be broken in the ordinary course of transit, and, further, that under the conditions of the form of Milk Risk Note signed by the senders of milk traffic the officials of the companies had power to open any cans during transit in order to ascertain if the quantity of milk therein agreed with the quantity declared.

Addition to the Western Infirmary, Glasgow.

At the thirty-fifth annual meeting of qualified contributors to this infirmary held last week one particularly gratifying feature in the report submitted was the progress that is being made in bringing the hospital still more up to date, both as regards accommodation and appliances. A new pavilion to hold 90 beds is in course of construction. Also, through the generosity of a donor who wishes to remain anonymous, a sum of £5000 has been received for the erection and equipment of a clinical laboratory, which should prove a very desirable adjunct to the medical school, and also of great use in the diagnosis and treatment of disease. Also, it is worthy of note that the Provisional Order promoted by the directors of the Skin Hospital has received the Royal Assent,

and the work carried on by that hospital for so many years is now being carried on in the dispensary of the Western Infirmary.

Death of Dr. James Stevenson, Clydebank.

One of the best known and most highly respected residents in Clydebank passed away last week in the person of Dr. James Stevenson. He had been ailing for some time but was still able to go about, and his death in the end occurred somewhat suddenly. Born in Dunfermline 58 years ago, he was at first apprenticed to a trade, but by his own energy and perseverance he entered the University of Glasgow, where he graduated M.B., C.M. It is some 30 years ago since he went to the district which is now Clydebank, just about the time when it began to be a great shipbuilding centre. As the place grew he acquired an extensive practice, which he worked almost to the end. He was medical officer for the burgh and for the central portion of the parish of Old Kilpatrick. He took an active part in public life. Elected to the school board, he was chairman for a term, and at the time of his death he was a county councillor for Dumbartonshire. He leaves a widow and family including two sons who are members of the medical profession.

University of St. Andrews: 500th Anniversary.

The general committee which has in hand the arrangements for a fitting celebration of the 500th anniversary of St. Andrews University held its first meeting on Nov. 27th within the hall of the United College. After a few opening remarks by the Principal, Professor Lawson, convener of the provisional committee, gave an account of its work. It was resolved that the President should be the Chancellor, Lord Balfour of Burleigh. Subcommittees of the general committee were also constituted. On the motion of Professor Herkless it was agreed that the celebrations should take place in September, 1911, having in view the fact that Bishop Wardlaw had recognised the existence of a University of St. Andrews in 1411. On the question of a permanent memorial of the celebration, it was suggested that this should take the form of a new students' union. It was resolved to refer this, as all proposals dealing with this question, to the convener's committee.

Sidlaro Sanatorium : Financial Position.

In connexion with the Sidlaw Sanatorium financial crisis a public meeting was held on Dec. 3rd in the Burgh Court Room, Dundee. Fully an hour's discussion took place, when all the facts were disclosed, and in the end the Lord Provost, who presided, undertook to lay before the town council a modified scheme of municipalisation, while a committee was appointed to make a systematic canvass for subscriptions to support the institution in the meantime.

Infantile Mortality in Inverness and Elgin.

The public health committee of the Inverness town council at a meeting on Nov. 29th discussed at length the Notification of Births Act. In the course of the discussion it was stated that Inverness was one of the few burghs in Scotland with a very high death-rate among infants. It was eventually agreed by 7 votes to 2 to recommend the council to adopt the Act. The Elgin town council met on the same day in order to discuss what might be done in order to lessen the high rate of infant mortality in the town. It was decided to appoint a third nurse for Elgin to advise mothers and assist in nursing their children.

Dec. 7th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Health, Food, and Cookery.

ONE of the most significant features of the hygienic advancement which has been secured for this country by the efforts of the Women's National Health Association was displayed to the public eye by the recent Irish Food and Cookery Exhibition at the Rotunda. The exhibition had been organised by the Hotel and Tourist Association of Ireland, and the ceremony of declaring it open to the public was carried out by the Countess of Aberdeen, who said that the relection of proper food and the right preparation of it had a very great effect upon the national health and character. The inevitable effects which must

result from a deficiency of proper food for the infant members of the community—of a want of proper, clean, healthy milk, or the defective qualities of that of the mother which necessarily resulted from insufficient nourishment-were also pointed out by the speaker, and also the fact that from that cause alone arose very much of the bad health and the bad temper with which they had to deal from time to time, while it was also productive of great collective loss to the nation. An exhibition of that kind, by drawing attention to the importance of food from every point of view, must help to secure the health of the nation by building up the health of the home. Considerable applause was elicited by Her Excellency's statement that: "Owing to the exertions of the Women's Health Association the children in various parts of the country were now always asking for stirabout. All medical readers will admit that no more appropriate sequel to the Tuberculosis Exhibition could be provided than a Cookery Exhibition. Bad air was treated at full length by the former; bad food will be thoroughly exposed by the latter; while bad drink is being deliberately and unsparingly dealt with by the leaders of the present temperance crusade. These are the true "grievances" of the home life of the Irish poor, and this fact makes the present position all the more auspicious.

The Dublin Milk-supply.

It is hopeful to see that our corporation has recently been waking up to the importance of the supply of pure milk in Dublin, seeing that the tenement room and the milk van are chiefly responsible for the preparation of the soil most suitable for the germs of crime and insanity, and when moistened by stimulating beverages and continuously tended by bad company the yield of its harvest may be calculated on with confidence. On one day last week in one of the Dublin police courts a dairyman was fined £2 for selling margarine, of which the label was not clearly visible to the purchaser; a dairy-keeper was fined £5 for the sale of milk adulterated with 16 per cent. of added water; and another £3 for the sale of milk containing 10 per cent. of added water. Such records, which are repeating themselves every week in the Irish metropolis, display a condition of mercantile morality which can only be dealt with effectively by the most stringent measures, and it is encouraging to find the Recorder has thrown all his influence into the scale in the weighing of this question-a step which has also been followed by our police-court magistrates.

Rathmines Urban Council.

At the meeting of the urban district council of Rathmines which was held last week the report of the Local Government Board auditor was read, with the enclosed certified abstracts of the accounts of the council for the year ending March 31st, 1909. The general receipts amounted to £56.334 18x. 2d., and the poor rate receipts to £29,663 1s., making a total of revenue receipts of £85,997 19s. 2d. The sum expended on private works had amounted to £1259 16s. 2d., and the surplus, which represented the accumulation of some years. having been added to the general fund, a balance of £918 0s. 10d. was left for the carrying out of other works under the same headings. The medical officer's report for the five weeks ending Oct. 30th stated that the total birthrate was 15.9 per 1000, while the total death-rate had been 10.9. During the same period the total annual death-rate in 33 of the largest English towns was 12.3 (that of London being 11.8); in eight of the largest Scotch towns, 12.8; in 23 of the largest towns of Ireland, 15.5—in Dublin, 18.1; Clontarf and Howth (No. 1 district), 15.7; Donnybrook, 12.1; Blackrock, 20.3; and Kingstown, 13.0.

The Public Health of Belfast.

At the monthly meeting of the corporation of the city of Belfast held on Dec. 1st it was reported that the Tuberculosis (Ireland) Prevention Act came into operation on Nov. 1st, and that during the three weeks following 102 cases had been reported. The death-rate from all causes for the four weeks ended Nov. 20th was 16.7, while it was 5.9 from chest diseases and 1.1 from zymotic affections. The number of cases of infectious diseases notified is greater than in the preceding month, but less than in the corresponding period of the previous year. Great objection was expressed at the action of the Local Government Board in refusing to give the corporation the necessary powers to supervise outside dairies for the reason that the Act was a comparatively new one, and that outside authorities should,

they said, get a chance of seeing to the condition of things. Owing to this action of the Local Government Board in reference to the largest city in Ireland (where two-thirds of the milk-supply comes from outside sources), it has been decided by the Belfast local authorities to instruct their medical officer of health to prepare for the information of the public health committee a list of the dairies outside the city from which milk is supplied for consumption inside the city, distinguishing those who permit an inspection of their premises and those who do not. Permission was given at the meeting of the Belfast city council on Dec. 1st to bring in a scheme for clearing away the insanitary areas of the city which could not be dealt with in any other way, and it appears that in all 1159 houses will be affected and about 3000 to 4000 persons will be unhoused. It was also intended to widen streets which were at present narrow, to open out streets which were not thoroughfares, to allocate portions of grounds for open spaces, and to utilise some as playgrounds for schools. The scheme is valued to cost about £90,000, and in addition £20,000 for model buildings to replace those removed. The scheme will not go through until there is a sworn inquiry into its provisions by the Local Government Board. A special meeting of the council is to be called shortly to consider the whole matter. Dec. 7th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Alleged Immunity of Arabs to Enterio Fever.

It is a generally accepted view that Arabs possess a considerable degree of immunity to typhoid fever, and that when persons who have lived in France proceed to Algeria they are attacked by the disease about 100 times more readily than the Arab natives. M. Moty, M. Toussaint, and M. Billet called attention to this subject at a recent meeting of the French Society of Military Medicine when M. Billet did not accept the above-mentioned view. He said that this immunity was merely relative, and he quoted several cases in support of his opinion. He remarked that conclusive evidence in this respect was supplied by an epidemic which broke out at Sfax in 1899, for among 32 cases of typhoid fever occurring in the garrison there were 22 native patients-i.e., a proportion of 68 per cent. The infection was brought into the garrison by the natives, and the 11 first patients were native tirailleurs who were enrolled as volunteers and had been in the army only a few days. It was therefore unquestionable that Arabs might be attacked by typhoid fever in certain circumstances which were as yet rather obscure. The cases were generally severe and their real nature was often misunderstood; the seizures might be sudden and violent and were then liable to be mistaken for pernicious forms of malaria.

Adulteration and Fraudulent Misdescription of Food and Beverages.

In his report on agricultural finance M. Noulens has dealt at considerable length with the prevention of various kinds of fraud in connexion with the preparation of food and beverages. In one year the officials employed in this work have been increased from 931 to 1068. During the year 1908 there were 67,726 samples examined, of which 14.4 per cent. were unsatisfactory. Samples of all kinds of beverages and food products were taken indiscriminately and usually at random. At the commencement of this preventive work it was found that oil, milk, vinegar, and wine were the articles most liable to be tampered with. The average for the year 1907, which showed 20 per cent. of unsatisfactory samples, was reduced in 1908 to 14.4 per cent. and in the beginning of 1909 to 14.1 per cent. Frauds in connexion with mineral waters have become exceptionally prevalent of late years, both in the actual factories which supply retailers and also in a great many restaurants. Samples of mineral water were not collected for analysis until the end of 1907, when it was found that a restaurant was selling common water in bottles labelled Evian-Cachat. In 1908 many restaurant keepers were detected selling ordinary water as the produce of well-known mineral springs (Evian, Vittel, Baudoit). Visits were paid to wholesale dealers, and four important seizures were made on the premises of persons who manufactured spurious mineral waters chiefly by the use of bicarbonate of sodium.

Baoteria on Fruit.

M. Sartory and M. Fillassier have been making bacteriological examination of fruit exposed for sale in shops open to the street and also in costermongers' barrows and baskets. The fruit consisted of grapes, strawberries, red currants, and cherries. In giving an account of their results at a meeting of the Biological Society they said that the sterilised water in which the fruit received its first washing was afterwards found to contain staphylococcus, streptococcus, bacillus termo, bacillus subtilis, and micrococcus candicans, the number of organisms varying according to the condition of the fruit as regards cleanliness from 68,000 to 3,200,000 per cubic centimetre. On the second washing these numbers ranged from 7000 to 120,000, and on the third washing they ranged from 3000 to 27,000.

Prophylaxis of Typhoid Fever.

At a meeting of the Academy of Medicine held on Nov. 16th, M. Delorme continued a discussion in the previous portion of which M. Vincent, professor at Val de Grace, had mentioned a number of ways in which typhoid fever might be propagated. M. Delorme said that in his opinion the quality of the drinking water was the point on which sanitarians ought to concentrate their attention. It was by providing an abundant supply of good water that municipalities which were desirous of improving the health of their towns put an end to epidemics of typhoid fever. Much still remained to be done in this respect, especially in certain districts of the east and south of France. Even in garrison towns where the barracks had a good water-supply provided at great expense the town's supply was unsatisfactory, and soldiers who drank it during their visits to places where liquor was sold afterwards suffered from typhoid fever. It would be remembered that an outcry was raised not long ago because in a garrison town where typhoid fever was prevalent the military authorities wished to forbid soldiers resorting to refreshment houses the water-supply of which was derived from notoriously polluted wells. He was not without fear lest the establishment of laboratories and systematic inspection and the publication of pamphlets would tend to give municipalities an excuse for not proceeding with the only true prophylactic measure, the providing of an abundant supply of good water with supervision of the sources. An army medical officer in a garrison town was in some respects more favourably placed than a laboratory specialist, because he witnessed the earliest stage of an epidemic, he could investigate the causes which led to it, he was acquainted with the local conditions, and he could suggest measures for preventing its extension and its possible recurrence in the future.

Anti-tuberoulous Vaccination of Cattle.

After investigations extending over many years Professor Arloing, director of the Veterinary School of Lyons, has discovered, he says, a method of vaccination for the protection of cattle from tuberculosis. The vaccines which he employs are derived from definite kinds of bovine bacilli; they are obtained by a special process of culture, and are capable of unlimited transmission. These modified bacilli cause no appreciable lesions, and the treatment cannot injure the cattle. The vaccination may be either intravenous, subcutaneous, or by way of the alimentary canal. travenous method has given the best results -namely, 75 per cent. of successful cases, and introduction by way of the alimentary canal came next with 50 per cent. of successful Professor Arloing says that improvements in the details of the method may be expected, but the results already attained warrant its employment, together with ordinary prophylactic measures, for the prevention of bovine tuberculosis. At a meeting of the Academy of Sciences held on Nov. 29th Professor Chauveau said that he had been able to corroborate the conclusions at which Professor Arloing had arrived.

Dec. 7th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The late Duke Carl Theodor of Bavaria.

H.R.H. Duke Carl Theodor of Bavaria, M.D., died at his country seat at Kreuth in Upper Bavaria on Nov. 29th. The members of reigning families in Germany or elsewhere. As a syphilis. He mentioned that by the Wassermann reaction

youth he entered on a military career like the majority of other princes, but exchanged it for more congenial pursuits -namely, the study first of philosophy and afterwards of natural science and of medicine. In 1872, on the occasion of the fourth centenary of the University of Munich the honorary degree of M.D. was conferred on him. He now became greatly interested in diseases of the eyes and worked at this specialty under the late Professor Rothmund of Munich and Professor Arlt of Vienna. In 1880, having passed the State examination and thereby become qualified as a medical man, he not only commenced practice in Munich as an ophthalmic surgeon, but also established private clinics in Munich and Tegernsee, where he used to reside during the summer. A dexterous operator, he very soon acquired, both in his own country and abroad, such a reputation for surgical skill that his practice in diseases of the eye was one of the largest in Germany. His patients for the most part belonged to the poorer classes as he never charged fees, but he was also consulted by well-to-do people and especially by the royal personages who were his relatives and friends. It may be remembered that when the present Emperor of Germany suffered a few years ago from an injury to one of his eyes caused by an accident he consulted the late duke, who came from his residence at Munich to the port of Kiel where the accident had happened. The number of the operations performed by him especially for cataract was enormous; in fact, he was in this respect surpassed by only a very few Notwithsurgeons in the same department of practice. standing his exalted rank and social position he identified himself with the interests of the rank and file of the profession, loyally cooperating in whatever steps had to be taken for the assertion of their privileges and for the reform of abuses connected with the existing legislation on sick-clubs. According to the Voss-Zeitung, he was a member of the Munich Free Choice Society and willingly acquiesced in the control of club practice exercised by the committee of this society. He was also one of the early members of the great medical union, known as the Leipziger Verband, to which allusion has been repeatedly made in these columns. The late duke was the author of numerous works in several branches of medicine. His first contribution was published as early as 1871 in the Zeitschrift für Biologie and dealt with the influence of the atmosphere on the metabolism of respiration; in 1877 he wrote an account of experiments on the accumulation of leucocytes in the cortex of the brain, and in the following year he published microscopical researches in certain diseases of the spine. His first work in diseases of the eye was devoted to the anatomy and pathology of the vitreous humour; in 1882 he wrote an essay on myopia from an anatomical point of view; and in 1887 one on the pathological condition of the eyes in diseases of the kidney. For the annual reports of the Munich municipal hospital he contributed an essay on growths of the orbit, and for the Festschrift on the occasion the seventieth birthday of the late Professor Helmholtz, he wrote a description of a case of callosity of the superior evelid. Duke Carl Theodor was born in 1839, his father being Duke Maximilian of Bavaria. He was twice married, his first wife being the Princess Sophia of Saxony who died in 1867, and his second the Princess Maria Josefa of Portugal, who took an active part as an assistant in her husband's clinical work. Of his sisters two came by their death in very tragic circumstances-namely, the Empress Elizabeth of Austria, who was murdered at Geneva by an Italian anarchist, and the Duchess of Alencon, who perished. together with so many other French notabilities, at the great fire at the Bazar de Charité in Paris. The death of Duke Carl Theodor has caused great sorrow everywhere, especially among the dwellers in the Bavarian Alps, where he had his favourite residence. At Possenhofen he had a model farm, and he was much interested in the retention of their picturesque national costume by the Bavarian peasants, giving prizes to families who conformed to his ideals in this respect. It may here be mentioned that another member of the Bavarian royal family, Prince Louis Ferdinand, a cousin of the late duke, is a qualified medical man too, but does not practise. Idiooy and Syphilis.

Dr. Lippmann, an assistant to Professor Wassermann, has published in the Munich Medicinische Woohenschrift an

syphilis has recently been ascertained to be one of the causes of progressive paralysis, and the existence of a similar connexion between idiocy and syphilis has been suggested by various clinicians, the estimates varying from 11 to 23 per cent. Dr. Lippmann has applied the Wassermann reaction to idiots in two asylums—the provincial asylum of Uchtspringe in Westphalia for children of the rural population and the asylum of Dalldorf, which belongs to the city of Berlin, and therefore has for its inmates children coming from an urban population. As a control he first used the Wassermann reaction for a series of epileptic children, and found it to be positive only in a few instances in which the patients also showed other symptoms of syphilis. Of 78 idiots in the Uchtspringe asylum the reaction was positive in seven (i.e., 9 per cent.), but among the idiots in the Dalldorf asylum it was positive in 13 2 per cent. By examination of the patients and by the anamnesis Dr. Lippmann, however, found syphilitic symptoms in about 40 per cent. of the idiots, so that there is probably some connexion between syphilis and idiocy. He alluded to the researches of Dr. Baisch, who found in lying in hospitals that in syphilitic women the disease is latent in about 75 per cent. of the cases, the Wassermann reaction being positive and spirochetæ being present in the placenta, but the woman not showing manifest symptoms of the disease. He therefore recommended the use of serum diagnosis in lying-in hospitals for the purpose of disclosing latent syphilis. The children born of mothers who gave a positive reaction should, if necessary, be subjected to antisyphilitic treatment. He further suggests that this method of diagnosis might be advantageously given an extended trial in cases of idiocv. Dec. 6th.

NOTES FROM INDIA. (FROM OUR OWN CORRESPONDENTS.)

Piague.

For the week ending Oct. 30th plague seizures and deaths throughout India numbered 4287 and 3456 respectively. The mortality in the different provinces was as follows: Bombay Presidency, 946: Madras Presidency, 94; Bengal, 53; the United Provinces, 634; the Punjab, 476; Burma, 14; the Central Provinces, 837; Mysore State, 166; Central India, 212. The figures for Rajputana have not been received. Nagpur city reported 561 deaths.

Malarial Fevers and the People.

The interesting and suggestive paper by Sir Herbert Risley in which he summed up the work and results of the Malaria Conference at Simla is especially worthy of attention, because it was written with the object of inviting popular cooperation in the prevention of malaria. He truly says that to combat effectively this ancient, widespread, and destructive scourge is a task which cannot be accomplished by any official machinery that can be devised or even contemplated. The cost of the huge cofficial machinery which would be required would be prohibitive. Secondly, every rupee spent on the official staffs would be so much less available for the actual measures needed to cope with the disease. And, finally, the various operations which must be carried out to remove conditions productive of malaria would possibly and even probably rouse hostility unless they were so explained as to convince the people that they were intended for the benefit of the community. We may go further and affirm that these processes will never be thoroughly worked until they become as much a portion of the routine of village life as the healthful daily bath, which is properly considered one of the most wonderful institutions in India. The cooperation of the people is therefore absolutely necessary. Can it be secured?

The Proposed Research Institute for Maymyo.

The Secretary of State has declined to sanction the scheme for establishing a research institute in Maymyo, of which the Pasteur Institute was to form a part. The ground for his refusal is that in the present state of provincial finances it is inadvisable to embark on an ambitious undertaking of this description, and with this cautious policy few

will be disposed to cavil, seeing that the estimated expenditure on building alone was close on 6 lakhs of rupees.

Health of the United Provinces.

The sanitary report of the United Provinces for 1908 deals largely with "the deplorable epidemic of malarial fever which swept through the greater portion of the provinces between August and September." The mortality was the highest ever recorded: about one-twenty-fifth of the whole population perished from "fever," while the deaths from all causes amounted to 2,514,767, or one-twentieth of the population. At the same time the birth-rate fell from 41.18 to 37.46 per 1000. Apart from malaria, the year, despite famine conditions, was by no means abnormally unhealthy. It is a noticeable feature of the malarial epidemic that the districts where famine was worst were not, as a rule, severely attacked by malaria, but where it appeared it attacked all classes of the population alike-rich and poor, Europeans and Indians. In the four months from September to December the fever death-rate was 23 92 per 1000, as compared with an average of 10 71. Quinine was distributed in far larger quantities than in any previous year, much of it being given free of cost, and excellent results are reported to have been achieved; but there are, of course, great difficulties in the way of placing sufficient quantities of quinine to check an epidemic within reach of the mass of the people. The question of improving the system of distribution of quinine is now under consideration, and a special inquiry is being conducted by Major J. C. Robertson, I.M.S. There was excessive mortality among infants owing to malaria, famine conditions, small-pox, and measles. with the general population the infant mortality was the highest ever recorded, and reached the appalling figure of 345 · 1 per 1000, so that one infant perished out of every three born. This question of infant mortality has been receiving serious attention, and an inquiry into its causes is being commenced at Cawnpore by a lady doctor assisted by two trained midwives. Despite unfavourable financial conditions the year was one of much activity in sanitary matters. There was a sanitary conference in September, and the recommendations made at it. many of which have been approved and are being carried into effect, will, it is hoped, improve the sanitary conditions of towns and villages. municipalities, having been relieved of police charges, are now able to devote over 5 lakhs per annum, formerly spent on the police, to sanitary and other improvements, and these additional resources should enable many necessary works to be carried out.

A New Hospital for Meerut.

The Lieutenant-Governor of the United Provinces (Sir John Hewett) laid the foundation-stone of a new general hospital at Meerut on Oct. 29th. At a durbar held so recently as February last his honour mentioned that the existing General Hospital at Meerut has inadequate accommodation and indifferent equipment, and that the female hospital, although its buildings are modern, stands on a most unsuitable site. The Lieutenant-Governor complimented Meerut residents upon the public spirit and alacrity with which they had taken action on his remarks, for in so short a time the large sum of Rs.77,000 has been collected in subscriptions towards the cost of the new buildings. In addition to these voluntary contributions, Rs. 30,000 have been provided by local bodies and Rs. 63,000 will be realised by the sale of the sites of the old buildings, a sum of R: 1,70,000 having, therefore, been secured by local effort towards the total of Rs.2,15,000 required for the buildings. As a substantial proof of the sincerity of his compliments and on the principle that the Government should readily help those who help themselves, Sir John Hewett promised the Rs. 45,000 balance of the cost. thus redeeming a promise he made in March last to the people of Meerut. He congratulated those responsible on the excellence of the proposed buildings, and hoped that their equipment would be made sufficient and the wards bright and comfortable. With characteristic thoughtfulness he suggested that the hospital should be named the "Ludovic Porter" Hospital, to commemorate the interest which the Collector of Meerut has taken in the project, as well as in all other schemes for the benefit of the city and district.

Nov. 10th.

Gbituary.

ROBERT MARCUS GUNN, M.A., M.B., C.M. EDIN., F.R.C.S. ENG.,

SENIOR SURGEON, ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS, ETC.

Robert Marcus Gann, whose loss we have to deplore, came of an old Scandinavian stock settled for many generations in the north and north-east of Scotland. He was born at Culgower in Sutherlandshire in 1850, the youngest of a family of four, consisting of two sons and two daughters, none of whom survive him. Educated for a year at his native village school, and afterwards at a larger school in Golspie, he went at the age of 14 to Edinburgh, where later he graduated with distinction, taking the M.A. in 1871 and the M.B. and C.M. in 1873. He was contemporary there with Robert Louis Stevenson, whom he knew slightly. His teachers included Syme and Lister, and on the ophthalmic side Walker and Argyll Robertson.

In 1873, having an introduction to Mr. Couper, he began to attend at the Moorfields Eye Hospital, and in the early months of 1874 worked at the comparative anatomy of the eye under Professor Schäfer at University College, London. During the summer vacation of this year, and for some time in the following year, he was in residence at the Perth District Asylum, Murthly, work which he undertook with the object of examining the fundi oculorum of a large number of lunatics. He was attracted to the subject by the recently published work of Professor Clifford Allbutt, and found the duties congenial. From December, 1874, to June, 1875, he studied in Vienna, chiefly under Jaeger, whom he considered greatly superior to Arlt or Stellwag as a teacher. On his return to London he resumed work with Mr. Couper at Moorfields, where he was appointed junior house surgeon in August, 1876. He became senior house surgeon in December of the same year, retaining this post until November, 1879. His work as a resident medical officer coincided with noteworthy improvements in various directions in the hospital, such as reform of the nursing, a higher standard of notetaking, and better results in the operations for cataract. His influence made itself felt in these matters, and the lastmentioned is perhaps to be attributed in no small degree to his early adherence to Listerian principles. A remark of Syme, in commenting upon one of Lister's cases at Edinburgh, "We are told of pus, we fear pus, we expect pusbut we see no pus," made a great impression upon him as a student, and in Mr. Couper he found a chief who was enthusiastically sympathetic to the new principles.

In December, 1879, he made a voyage to Australia with the special object of collecting the eyes of marsupials and monotremata for microscopic investigation. His work on the comparative anatomy of the eye, which early attracted the attention of Sir William Bowman, appeared in part in the Journal of Anatomy and Physiology ("Minute Anatomy of the Retina," 1877, "The Eye of Ornithorrhynchus," 1884), and elsewhere ("The Embryology of the Retina of Teleosteans," 1888). He assisted in examining the zoological material collected in the Challenger expedition. Much of this work was embodied in his Arris and Gale lectures before the Royal College of Surgeons of England, which were unfortunately not republished. Taking the F.R.C.S. Eng. in 1882, Mr. Gunn wase lected assistant surgeon to the Moorfields Eye Hospital in August, 1883, on the resignation of Mr. Wordsworth, becoming full surgeon in 1888. also appointed ophthalmic surgeon to the National Hospital for the Paralysed and Epileptic, Queen-square, in 1886, and to the Hospital for Sick Children, Great Ormond-street, at about this time. At a later period he held the post of assistant ophthalmic surgeon to University College Hospital. In 1906 he was invited to deliver an address before the American Academy of Ophthalmology and Oto-Laryngology. He chose "Certain Affections of the Optic Nerve" as his subject, putting forward the view that the initial cedema of the disc in cases of cerebral tumour is due to pressure on the small veins of the pial sheath by fluid in the intervaginal space. His death occurred on Nov. 29th, after a painful and distressing illness, which commenced nearly a year ago. He was an early sufferer from influenza and had several attacks; it is probable that his health was seriously undermined by this

complaint. At the time of his illness he was senior surgeon to the Moorfields Hospital, ophthalmic surgeon to the National Hospital for the Paralysed and Epileptic, Queen-square, president of the Ophthalmic Society of the United Kingdom, and a visitor for the King's Hospital Fund. Mr. Gunn leaves a widow and two daughters to mourn their loss.

If the attempt is made to form some appreciation of Mr. Gunn's work for the advancement of ophthalmology a review of his life, such as has been set forth here, shows how early he was attracted to the retina, its anatomy, embryology, and functions. His interest in ophthalmoscopy and in the neurological side of ophthalmology never faltered, but grew stronger as years went on. He was facile princeps in the use of the ophthalmoscope; his descriptions and interpretations of minute changes in the fundus oculi were accepted as the ipse dixit of a master, even by his colleagues at a hospital where, it has been said, ophthalmoscopic examination has gained the position of a fine art. Probably his best known and most quoted contribution is that relating to the ophthalmoscopic evidence of vascular degeneration, the importance of which, not only to ophthalmic science but also to medicine in general, is universally acknowledged. He was among the first, if not actually the first, to realise the gravity of the prognosis as regards life in cases of albuminuric retinitis. In 1886, two years before the publication of Miley's paper on the subject, he wrote: "In my experience it is most exceptional to see an old case of albuminuric retinitis; this latter affection seems to occur at a late stage of the general disease, so that death supervenes before the retinal changes have existed very long." As an authority on the ophthalmoscopic signs of nervous diseases his opinion was undisputed. His enormous experience at Queen-square, utilised to the full as it was by the extreme care and accuracy of his observations, rendered his position in this branch unique, and it will be long before his valuable services to his neurological colleagues can be adequately replaced. His interests, however, were by no means confined to these somewhat narrow channels. He was one of the first to insist upon the value of studying minute changes in the cornea and iris with the strongest available simple microscope, and the lens used by him served as a model for the corneal loupes now in common use. When in Vienna he was impressed by the systematic teaching there, and soon after his appointment to the Moorfields staff he was the means of initiating those courses of study which have led to the establishing of one of the foremost schools of ophthalmology in the world. Nor were his interests confined to ophthalmology. From boyhood he was devoted to outdoor pursuits, especially shooting, botany, marine zoology, and geology. For many years he collected fossils, chiefly fishes and plants of the Jurassic and Old Red Sandstone systems from Scotland to Dorsetshire. It is satisfactory to know that a large number of his most valuable specimens have recently been acquired by the British

Mr. Edward Nettleship, to whom we are indebted for much of the information contained in this notice, writes as follows: "Marcus Gunn's character might be described as little removed from that of the perfect knight—courageous and pure in mind and body, modest, but clear and strong in his convictions, sweet of temper, ready always to see the better side, scrupulous in giving credit where credit was due, but sensitive and quick to resent without respect of persons whatever he judged unworthy in motive or act. He was a man of considerable intellectual gifts and brain power, and an exceedingly keen and accurate observer; his mental grasp was strong, his judgment careful and well balanced; a certain matter-of-fact simplicity was set off by a ready sense of humour. His influence depended largely on the conviction that he was true and loyal to the core and never satisfied with slipshod methods or imperfect knowledge. Himself singularly guileless, he was a good judge of character and motives in others."

Professor Seward of Cambridge writes: "I have never met a more whole-hearted student of nature than Marcus Gunn. During the last 30 years he had spent most of his summer holidays in collecting fossils at Culgower and other places on the coast of his native country, with the result that data are now available of the greatest geological and botanical importance. Marcus Gunn was no mere collector: he regarded nature with the keen scrutiny of a well-trained man of science. The smallest fragment was carefully preserved, and no effort was spared to obtain every available.

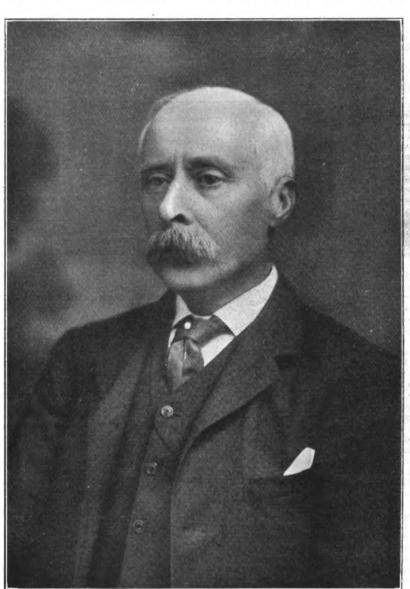
piece of evidence. His aim was to accumulate material which could be used in the interpretation of the records of the rocks, if not by himself by others with more opportunity for paleontological research. His energies were by no means confined to one locality: the collection includes a considerable number of fossil animals; among these may be mentioned a new species of fish which Dr. Traquair named after the discoverer. It is, however, of the plants that I am better able to speak. Thanks to his untiring devotion, it is possible to reconstruct from the fragmentary records the vegetation which flourished in the Upper Jurassic period in the North-West of Europe. Short as my acquaintance with

Marcus Gunn has been, the impression which he made is that of a friend of long standing, whose loveable personality remains as an ennobling recollection. In him were commodesty and high intellectual attainments. The words of one of George Meredith's characters, 'Men of science are always the humanest,' find a striking exemplification in Gunn's life. The courage and patience with which he faced the inevitable are the expression of a true nobility of character and a precious legacy to those who mourn

his loss."
Mr. Percy C. Bardsley writes: "It has been my privilege to work week by week for the last 16 years under the late Mr. Marcus Gunn at Moorfields. His loss to ophthalmology will be recognised all over the ophthalmic world, but it is to express a still greater loss that I write. During these 16 years a vast number of surgeons from Great Britain and Ireland, from our colonies, and from America come to Gunn is the most perfect gentleman I have ever met.' His kindness to his hospital patients was as great as that to his students. His death has created a void in many of our hearts that will never be filled again in this life. Descended from an old Viking family and the last of his name, he was to us the model of a calmly judicious English gentleman."

The Rev. R. C. Gillie writes from Eastbourne: "Perhaps the prevailing impression made on those who knew him best was that of fineness, using the word in all its senses. In manner he was sensitively courteous in a very simple and understanding way, with a touch of Highland distinction blending oddly with his unassuming carriage. In his thinking

he was singularly alert and transparently sincere. Whatever he knew, he knew with perfect clearness, so that a mere layman could delight in his scientific explanations. There was never the slightest concealment of the limits of his knowledge. One felt instinctively that his was a mind from which the last veil of unreality had been lifted and the last trace of evasion removed. Always considerate, even tender to the feelings of others, he was only wrathwith the ful charlatan. with what seemed to him either trickery or pretentiousness politics or science. For such he had no mercy. Speaking of his mental attitude, it is impossible not to touch on his character, for his life was in a marked degree a unity. There was no closed compartment in it. In all his professional and scientific work, his remarkable purity of thought and feeling were as present as in his family and social relations. His patients felt instinctively that



ROBERT MARCUS GUNN, M.A., M.B., C.M. EDIN., F.R.C.S. ENG. (Photograph by Messrs. Elliott and Fry.)

Moorfields to study ophthalmology under Mr. Gunn. I believe that every one of these men will feel, as he reads your obituary notice, that he has suffered a great personal loss. For Mr. Gunn was a friend to all who worked under him. We look back and remember his unfailing urbanity as a teacher; the most junior student could ask him the most elementary question and be sume that he would not be rebuffed, while the older student would receive a lengthy explanation of a difficult case, as lucid as it was complete. He was always ready to give the best out of his wast clinical experience to those who sought for knowledge. Students have remarked to me over and over again, 'I think

they were dealing with a man wholly trustworthy, who was incapable of deception. Trained in the Presbyterian Church, he retained to the end a deep conviction of the reality of the Father of Spirits. His faith had small use for formulas and the ordinary exercises of religion scarcely appealed to him, but humility and reverence were the unmistakeable accompaniments of all his thoughts of the unseen. He rarely broke through the reserve which lay behind the friendly and accessible demeanour. When he did, it was to reveal unconsciously the same clear thinking and lowly minded truthfulness so characteristic of all his life, joined to a wholly beautiful childlikeness. His was the blessing of the pure in heart."

CHARLES ROBERT BELL KEETLEY, F.R.C.S. Eng., L.R.C.P. LOND.,

SENIOR SURGEON TO THE WEST LONDON HOSPITAL, ETC.

By the death of Mr. Charles Robert Bell Keetley our profession has lost a skilful and eminent surgeon, whose life was a good example to all of us of honourable hard work and of devotion to hospital practice. He was the son of Mr. Robert Keetley, a ship-builder, of Grimsby, and was born at Grimsby on Sept. 13th, 1848. He received his medical education at the Hull Infirmary and at St. Bartholomew's Hospital. From the first an able and industrious student, he was awarded a gold medal in anatomy at the University of London. He qualified in 1873, and in 1875 was house surgeon at Queen's Hospital, Birmingham. In 1876 he obtained the Fellowship of the Royal College of Surgeons of England and for some years was assistant demonstrator of anatomy at St. Bartholomew's Hospital. But the true beginning of his surgical career came when he was appointed assistant

surgeon to the West London Hospital. It is not too much to say that no hospital ever had a more zealous and faithful servant. From the day he first went there to the time of his last illness he gave his mind and his strength, often with a sort of extravagance, to its advancement and welfare. During his 30 years of service the West London Hospital grew from a suburban venture to a great general hospital for a million people, to which is affiliated a great post-graduate school. Keetley's name will ever be associated with this development of the place that he loved. He worked incessantly for it, and was often over-worked. On committees, at board meetings, on his operation days he would not leave till the very last thing of all had been done. He disliked having any of his work done for him. Even when his health, a few months ago, began to fail, he still would not take care of himself or hand over a part of his duties to a younger colleague. It is, for example, but a few weeks since he was down at Hammersmith all night undertaking three emergency operations, and there is little doubt that he might have lived longer if he could have been persuaded to allow himself more rest.

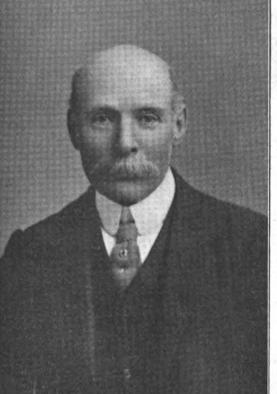
In his treatment of his hospital patients he gave deliberate

and prolonged attention to each case, and, further, was always putting his hand in his pocket for their needs. It will never be known how much money went that way in small sums, but there is not a house-surgeon who has ever served under Keetley who cannot recall his ready sympathy with the material needs of those who came beneath his professional eye. He was far more careful of other people's wants than of his own; and his high place in our profession would have stood even higher if he had been more business-like in his private practice. Often his great experience in operative surgery and his wise judgment in consultation were rated below their value by some colleague whom he had kept waiting, while it was not unknown for a patient to guess rightly that Keetley would soon forget whether he had, or had not, been paid for his attendance It was with him, in this regard, as it was with John Hunter: both men alike were thoroughly methodical in the actual practice of surgery, at the bedside or in the operating theatre, but were inclined to be neglectful of their

work. It would be easy to trace the further likeness between them, for they were men of the self-same temperament, of singular tenacity of purpose and force of will, able to go forward over all kinds of obstacles, and in the end to be successful. Each of them, also, was emotional: readily moved either to anger, or to pity, or to generosity. "All of us, who were Keetley's friends," writes a colleague on the staff of the West London Hospital, "remember that he was quick to take offence, and to show that he was offended, and then, in a moment, he would be no less quick to say something kind and friendly, or even to apologise, in the most delightful way, to a man 20 years his junior. It was not difficult, now and again, to have the sense of a grievance against him; but it was impossible to abide in that most unprofitable of all feelings; the whole thing ended off hand in a better understanding. We found always under the passing vehemence of his manner the steady goodwill of a true friend. He was no more able than Hunter to smile and edge his way through life. he wanted he fought for, with plain speaking, without

hedging or trimming. what he wanted, at the West London Hospital, was always the good of the hospital." Two of its institutions have become inseparable from his memory. One is the West London Medico-Chirurgical Society; he was its founder and its first president; and he received a great part of the happiness of his life from its rapid increase and from the crowded attendance at its meetings. The other is the Ladies' Association. Of this he may truly also be called the founder; and it would be hard to say too much about the admirable, wise, and valuable work which that association has done for the West London poor. These two institutions are of his making, and he lived to see his reward in their great and extending success. The post-graduate school, also, owes much to the loyal support that he gave to Mr. Bidwell in all the hard work of establishing and extending the school to its present membership.

Keetley made a real name for himself both by his practical work in surgery and by his literary work. Many of the profession are familiar with what he did in orthopædic surgery; but in all operations he was no less experienced, independent, and ingenious. In the later years of his



CHARLES R. B. KEETLEY, F.R.C.S.

practice he was especially interested in the operation of appendicostomy, and took a chief part in establishing it in this country. Among his writings, the chief are his book on "Orthopædic Surgery," his very useful "Index of Surgery," which is already in its fourth edition, and his "Student's Guide to the Medical Profession." He was also one of the editors of the first 15 volumes of the "Annals of Surgery." He published many papers of very real value on surgical subjects, his Harveian lecture on Plastic Surgery and his Cavendish lecture on the Conservative Surgery of the Appendix Vermiformis being among the best known of his writings. He was a frequent contributor to The Lancet.

waiting, while it was not unknown for a patient to guess rightly that Keetley would soon forget whether he had, or had not, been paid for his attendance. It was with him, in this regard, as it was with John Hunter: both men alike were thoroughly methodical in the actual practice of surgery, at the bedside or in the operating theatre, but were inclined to be neglectful of their own advantage and of the well-earned payment of their for they are full of the very best kind of humour, while the

very little time that he ever gave to more ambitious painting served to show that he could have excelled here had he chosen. He was an honoured member of the Savage Club, and was an original member, and a President, of the Lincolnshire Society of London. He married the daughter of the late Mr. Henry Holmes Long, of the East India Company, and leaves to her the name of a man of honourable, indomitable mind, generous, warm-hearted, an excellent surgeon, and an excellent friend. She may feel assured that a very large number of persons in all classes and in all parts of the country are sympathising with her in her loss.

Mr. Rickard W. Lloyd writes: "Having enjoyed the friendship of Mr. Keetley for over 30 years, and having received many kindnesses at his hands, I may be excused perhaps for writing of him at this sad moment. Keetley always engaged in his work from a love of the science and a determination to practise it as skilfully and successfully as surgical records showed possible, and to improve upon those records if he could. The courage, thoroughness, ingenuity, and resource which he always displayed was especially shown in the 'eighties' and 'nineties,' when operations were increasing in magnitude and variety almost every day. He was one of the first to adopt Listerian methods, and in his operations he always from the beginning of his hospital career insisted upon thoroughness in antiseptic preparations and precautions. And though so bold a surgeon he was a very careful one. He allowed as little blood as possible to be lost, and he liked his patients to have the minimum of the anæsthetic administered, preferring ether to chloroform. I saw him on the day before he last went to Brighton (where he hoped to throw off a harassing cough, and where, alas! he died) open a knee-joint and remove a large thick fringe from its interior. Elsewhere he performed an operation for radical cure of a very large scrotal hernia. Those cases were in private practice. Afterwards, on the same day, I saw him at the hospital excise a malignant growth involving coils of intestines. Such is an ordinary sample of the operations he had been performing on several days a week for so many years, and the general verdict upon Keetley's mass of varied, bold, and ingenious operative work must be that the results were extraordinarily good. Keetley's social talents were great, despite his infirmity of deafness. He was exceedingly interesting, original, and generally amusing in his speeches, and a very clever artist. Many years ago in the dissecting room at St. Bartholomew's Hospital when he was a demonstrator, I remember the enlightening drawings in coloured chalks that he made in explaining dissections, and the kindliness and the readiness with which he always assisted us as students. I have since seen him illustrate his surgical work scores of times with clever drawings which he made with amazing rapidity and exactness. I have seen many humorous and caricature drawings that he has made when out of the range of some speaker-and unfortunately deafness, his great misfortune in life, often placed him there.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Marcus P. Hatfield, professor of pediatry in the Chicago College of Physicians and Surgeons.—Dr. Theodor Sümisch, formerly professor of ophthalmology in the University of Bonn.—Dr. Max Jordan, extraordinary professor of surgery in the University of Heidelberg, at the early age of 45 years. He was for many years assistant to Professor Czerny, and had published a number of researches and encyclopædic articles on surgical subjects.—Dr. Kell, oberarzt of the Plauen Municipal Hospital, from blood-poisoning contracted in the performance of his hospital duties.

ROYAL MICROSCOPICAL SOCIETY.—At a meeting of the Royal Microscopical Society held on Nov. 17th Mr. Edward Heron-Allen read a short paper on the Recent and Fossil Foraminifera of the Shore Sands of Selsey Bill in Sussex, many hundreds of foraminiferous shells being at the same time exhibited as lantern pictures. Mr. Conrad Beck showed for Mr. J. W. Gordon a microscope lamp possessing several novel features, one of them being that when the light was focussed on an object the image of the incandescent filament or other source of light was not visible in the field. Several ladies were present, this being the first meeting which the rules permitted them to attend.

NOTES FROM CHINA.

(FROM OUR OWN CORRESPONDENT.)

Climatic Bubo.

A7 the Budapest meeting of the International Medical Congress in the section of Tropical Medicine a discussion was raised by Professor Gabbi of Rome on the subject of climatic bubo, and though the account given in your issue of Sept. 18th was necessarily a brief summary, it was not difficult to see that there was considerable doubt in the minds of almost all the speakers as to whether the disease is a specific and separate morbid entity. For some years past I have been puzzled by this complaint, and having been fortunate to meet with a series of eight cases during the past year I may perhaps be allowed to add a few notes concerning it. The cases occurred among Europeans; five of these belonged to a regiment which had arrived a little over a year ago from South Africa. The other three were foreigners who have been resident in Peking for several years. None of the cases showed signs of venereal disease, though six had from time to time exposed themvears. selves to the chance of infection. As in the case of tuber-culous joints, the patients usually give a history of having injured themselves, remembering an instance where they felt a sudden pain on some occasion, but none of the incidents mentioned were such as would cause mischief in glands not already inflamed. The groin glands were swollen, hard, painless, and in six of the cases suppuration took place. In the other two there was no raised temperature throughout, nor was there any leucocytosis, filariasis, or malaria. Beyond finding staphylococci, and, in one case, streptococci in the pus, there was no trace of other bacterial organisms uniformly present which could be accounted etiological factors. There are cases of gonorrhoa in which long after the gonococcus has disappeared one can still find staphylococci in the urethral mucus, and it is necessary to pay particular attention to the clinical history and to look for any possible signs of venereal disease. The health otherwise of these cases was unaffected, and the general physique was good. One inclines to the opinion that this disease is due to inflammation caused by some toxin rather than direct invasion by bacteria. It awaits a more than direct invasion by bacteria. It awaits a more particular investigation, as the view held that it is due to a lessened resistance to microbic infection does not in any way advance matters. As for treatment, complete rest is the most prudent course, and two weeks in bed will sometimes, but not always, tide over the chance of suppuration, but where this does take place simple puncture by a bistoury and application of a Bier's suction glass renewed three or four times, once daily, will be found a more expeditious treatment than by extirpation or scraping. In employing the last method small glands which are not touched by the spoon take up the burden of the scraped glands and considerably lengthen the period of recovery. Internally, iodferratose or the syrupus ferri iodidi of the Pharmacopecia are useful. The tissues surrounding the glands are free from inflammation; in fact, there are absolutely no other clinical symptoms beyond the localised groin glandular swelling. Climatic bubo is a diagnosis of comparatively recent date, but from the experience of other medical men in China who have met with cases of it the general feeling is that it is a distinct and separate pathological entity the etiology of which is still unknown.

Research Work in China.

The above paragraph deals with only one of many medical problems which await detailed investigation on the spot. A short time ago the leading Shanghai paper, the North China Daily Ners, drew attention to the wide scope for research work locally and invited the ratepayers to take up the matter and secure the services of an expert pathologist to work in the municipal laboratory. The administrative duties of the medical officer of health and his assistants leave them scant time for devoting themselves to research. The causes of variation in virulence of small-pox vaccine; cholera antitoxic serum: the suitability of fruits and vegetables as media for the growth of certain pathogenic organisms; preventive inoculation against cattle plague; the causation of beri-beri; the incubation period of rabies in China; the prevalence of Malta fever, sprue, and dysentery are but a few

of the questions which require elucidation. The paper suggested that the schools of tropical medicine in England, America, and the Continent should be invited to avail themselves of the use of the well-equipped municipal laboratory by sending out experts to undertake research along certain defined lines. There can be no doubt of the field for such work, and a hint might be dropped here to our English tropical schools of medicine to look to their laurels in this matter, for it appears that American universities have already formulated plans for establishing research laboratories in China. The University of Pennsylvania has already undertaken, in Canton, the establishment of a medical school that shall have well-equipped research laboratories and whose staff shall consist of men fully qualified to conduct investigation. Harvard, Yale, and Virginia Universities have also formulated plans. One of the outline schemes is as follows:—

Research Department.—Investigation concerning diseases peculiar to China. All the instructors to be men engaged in such study, and capable of imparting the spirit of inquiry to their students. The training of men who shall be the leaders in research in China. Study of methods for improving the hygiene of the population. Emphasis on preventive medicine, with inaugurations of campalgns of education regarding infectious diseases. Exact studies regarding the principles of hygiene for Westerners in the tropics, emphasising especially diet and clothing. While wishing every success to the fulfilment of this scheme, the would be a pity if the responsibility for medical research and education and all the opportunities it offers should be allowed to be assumed by American universities alone. There is plenty of room for all, and, as far as England is concerned, the good work at present being so conscientiously carried out by British doctors at Shanghai, and at medical schools such as those at Peking, Hankow, Hangchow, &c., shows that up to the present moment England is in the forefront

Oct. 27th.

of the movement.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Medical Privilege.

The Full Court of Victoria held last year that under Section 55 of the Victoria Evidence Act a medical man could not disclose communications made to him by a patient nor disclose any knowledge acquired from his professional observation. A case has just been brought forward in which the National Mutual Life Assurance Company declined to pay a death policy on the ground that the holder had suppressed facts as to her health on taking out the policy. The company relied for their case on the evidence of Mr. E. T. Thring, of Sydney, but according to the previous decision his evidence could not be taken. The matter is to be taken to the High Court on appeal.

Melbourne Medical School.

The annual report of the Dean of the Faculty of Medicine sets out that the number of medical students on the Register was higher than in any previous year. The figures given for students taking full courses were in 1908: males, 302; females, 21; total 323; 1909: males, 311; females, 15; total 326. The recognition of St. Vincent's and the Alfred Hospitals as clinical schools was completed, and there was reason to believe that facilities for teaching would be much increased in the new Melbourne Hospital. The proposals made by the faculty and approved by the council under the Stewart bequest should greatly stimulate the teaching of anatomy, physiology, pathology, medicine, and surgery, and a new department of neurology was contemplated. A committee has been appointed to revise the curriculum. At the last Australasian Medical Congress, out of 800 members 300 were trained in the Melbourne school.

Veterinary School, Melbourne.

Professor Gilruth, the recently appointed professor of veterinary medicine in the Melbourne University, reports that the Research Institute, to which is attached a dissecting-room, is nearing completion. Plans for a general veterinary hospital and operating theatre were being prepared, and everything should be in readiness for the opening of the session of 1910.

Private Hospitals in Melbourne.

A statement has recently been made that a number of socalled private hospitals in Melbourne are in reality places of

doubtful, or more than doubtful, repute. The chairman of the Board of Health states that he has found that only 12 private hospitals are legally on the register. The Act requires registration to be renewed annually, but has hitherto apparently been ignored by all concerned. A report was being prepared, but the town solicitor advised that the existing regulations only gave power to supervise the structural requirements, and did not permit of any objection to the character of the persons in charge.

Melbourne Hospital Elections.

A scheme has been prepared by the staff of the Melbourne Hospital with the intention of abolishing the present system of staff election by vote of subscribers. Under the proposed scheme the members of the present staff remain in office until the age of 60 years, and changes from the outdoor to indoor appointments are to be made in order of seniority. Future appointments to the staff are to be made by the hospital committee acting on the advice of a special board, to be composed of representatives of the University, of the staff, and of the committee. This advisory board would examine the credentials of candidates and make a selection, so that practically it holds the power of appointment. The general committee has not yet finally dealt with the proposal, but so far it has not manifested any keen sympathy. Only two or three members of the staff are adverse to the scheme, which will in all probability be eventually adopted, though possibly with some modification as to the automatic succession from outdoor to indoor appointments. It is not contended that the present system has resulted in any notable faulty appointment, but the scenes connected with the election have rendered existing methods distasteful to the majority of those called in to take part. A strong point has been made of the fact that five or six of the most promising younger practitioners have refused to face the election ordeal for the Melbourne Hospital, and have joined the staff of another institution.

Hospital Sunday, Melbourne.

The Hospital Saturday and Sunday collection in Melbourne just taken has resulted in a larger total than that of any year since 1888, when the "boom" was at its zenith. The amount received is £7372, an increase of nearly £300 on the previous year. The largest individual collection was made by the police and totalled £935. The denominational collections as usual seem to show the Presbyterian adherents as much the most wealthy.

Dental Congress.

The second congress of the dental profession in Australasia was opened on Oct. 25th at the Wilson Hall of the Melbourne University by the Governor-General. The president of the congress was Mr. J. Iliffe of Melbourne, and vice-presidents were appointed from all the other Australian states and New Zealand. Many papers have been contributed by leading practitioners in England and the continent.

Tuberculosis in New South Wales.

At a gathering in aid of the Consumptive Home at Strathfield Sir P. Sydney Jones stated that the loss of life from tuberculosis in New South Wales during the last 33 years amounted to 42,912 persons. Assuming each of these meant a loss of £200 to the State, it represented a total loss of £8,500,000 out of a total population which did not amount to 2,000,000.

Insanity in Australia.

Dr. Eric Sinclair, Inspector-General for New South Wales, reports that the number of officially insane under cognisance in that State on Dec. 31st, 1908, was 5705. The increase for the year was 98, which was below the average of the last 20 years. The proportion of insane to the general population was 1-281. The average cost per patient was £30 17s. 10_2d . per annum. In Queensland the number of insane under control on Dec. 31st, 1908, was 2189, an increase of 111 on the previous year, which is more than double the average annual increase for ten years past. The proportion of insane to population is given as 3.92 per 1000. The cost per patient was £22 2s. 9d. Dr. J. B. Cleland reports the number of insane in South Australia as 1051, an increase of 32, and the proportion to population about 2.50 per 1000.

Oct. 26th.

Medical Rews.

UNIVERSITY OF OXFORD.—The following have passed the examination for the Diploma in Public Health:—

Part I.—C. V. Ascrappa, M. N. Balsara, H. M. Crake, J. Fortune, S. K. N. Kabriji, J. B. Mama, W. S. Stalker, L. R. Tosswill, and W. F. J. Whitley.

Part II.—J. Fortune, I. C. Keir, W. S. Stalker, and L. R. Tosswill.

Foreign University Intelligence.-Albany Medical College: Dr. Victor C. Myers has been appointed Assistant Professor of Chemistry and Toxicology. —Cairo: Dr. Engel Bey, Director of the Statistical Department of the Board of Health, has been granted the title of Professor by the Prussian Ministry of Education.— Genoa: Dr. A. Morselli has been recognised as privatdocent of Psychiatry. - Göttingen: Dr. Hans Doering, privat-ducent of Surgery, has been granted the title of Professor. - Grat: Dr. Otto Loewi of Vienna has accepted the chair of Pharmacology and Pharmacognosis. -Königsberg: Dr. Hans Strehl, privat-docent of Surgery, has been granted the title of Professor.— Memphis Medical College: Dr. E. S. Cain has been appointed Lecturer on Medicine and Pharmacology; and Dr. A. D. West as Lecturer on Surgery and Orthopædics.—Naples: Dr. Francesco Accordini has been recognised as privat-docent of Internal Pathology.—Palermo: Dr. N. La Meusa has been recognised as privat-docent of Dermo-syphilo-pathology. Rome: Dr. Angelo Isaia has been recognised as privat-docent of External Pathology; Dr. Alfonso Neuschüler as privatdocent of Ophthalmology; and Dr. F. Laureati as privatdocent of Pediatry. - Rostock: Dr. Th. Geis is retiring from his Professorship of Surgery. - Tübingen: Dr. Karl Schlaver, Oberar:t of the Medical Clinic, has been awarded the Karl Faber prize for his researches on the pathology of the kidneys. -Turin: Dr. E. Martini has been recognised as privat-docent of Surgical Pathology.

A STUDY IN THE HEREDITY OF JEWISH SCHOOL CHILDREN.-Professor Karl Pearson has written to the Education Committee of the London County Council stating that recent work at the Francis Galton Laboratory of National Eugenics, University College, seems to indicate that heredity is far more closely related than environment to the physique and mentality of the child, and asking for permission to conduct an investigation, as regards their vision, of the parentage and home conditions of Jewish children in certain schools in the East-end of London. The mode of procedure would be to examine the eyesight of all the children in the schools selected, and to make inquiries at their homes, where the extent of Hebrew character-reading and the size and lighting of the rooms would be noted, as well as other indications of good or poor environment, and the opinion of the teachers would be obtained as to the state of the clothing, &c., of the children. The astigmometer would be the only instrument used and the home inquiries would be conducted by persons of wide experience of Jewish families. mission asked for has been granted provided that the experiments are conducted under the supervision of the medical officer.

LONDON POST-GRADUATE ASSOCIATION.—We are informed that the London Post-Graduate Association is enlarging its scope. As is now well known, the association issues cards which admit to any part of the clinical instruction at the several institutions which is open to their own students, including operations and post-mortem examinations, for a moderate fee. For those practitioners who desire to see as many cases as possible within a short period the association supplies a very real need; but the time has now come when it is felt that London should take a more important place as a centre for post-graduate study, and with this end in view special classes for qualified medical men only are being held at the following hospitals: University College Hospital, the Westminster Hospital, the Brompton Hospital for Consumption and Diseases of the Chest, the National Hospital for the Paralysed and Epileptic, and the Medical Graduates' College and Polyclinic. For these classes a small additional fee is charged, and information concerning them can be obtained at the individual hospitals. The office of the London Post-Graduate Association

is now at 20. Hanover-square, London, W., where the secretary may be seen daily between the hours of 10.30 and 1, except on Saturday. Particulars may also be obtained on written application.

UNIVERSITY OF LONDON.—At a meeting of the Senate on Nov. 17th the following were added to the panel of lecturers in physiology:—Mr. W. B. Hardy, M.A., F.R.S., Professor A. F. Stanley Kent, M.A., Dr. V. H. Veley, D.Sc., M.A., F.R.S., and Professor Swale Vincent, M.D., D.Sc. Sir T. Lauder Brunton has been appointed chairman of the Physiological Committee, and Professor H. R. Kenwood, M.B., D.P.H., and Professor W. J. R. Simpson, C.M.G., M.D., F.R.C.P., D.P.H., have been appointed representatives of the University at the Third International Congress of School Hygiene to be held at Paris in August, 1910

GUARDIANS AND TUBERCULOSIS.—The Treatment of Consumptives Committee of the Eastbourne board of guardians has circularised the 12 boards in the county of East Sussex, stating that it was of opinion that consumptive patients should be removed from the workhouse infirmary and provided for in a special building arranged on sanatorium principles, and asking each board to send delegates to a conference to consider a proposal to secure the combination of boards of guardians in the county for the purpose of providing separate accommodation for the isolation and treatment of patients suffering from phthisis. Ten of the 12 boards have offered to send delegates, and the conference, it is proposed, shall be held at Lewes early in the new year. A similar conference to that proposed in East Sussex was held at Croydon earlier in the year representative of boards of guardians in the county of Surrey.

RELIEF OF DESTITUTE CHILDREN IN BRIGHTON.-The work of the Brighton Police-aided Scheme for Clothing Destitute Children is to a certain extent explained by its title, but some figures and facts presented at the annual meeting on Nov. 30th still further unfold the splendid character of the work. While on their beats policemen become accustomed to seeing young children day after day perhaps going to, or returning from, school. If they think they are insufficiently clad inquiries are made, and if the parents are deserving the child participates in a periodical share-out of clothing during the winter months. This year 851 children-487 boys and 364 girls-were relieved in this manner. But the work has not ended here. In the last 12 months the same scheme has also supplied 60 girls between 14 and 19 years of age with complete outfits for domestic service; situations were found for all of them, and nearly all of them are now earning a livelihood. Seven cripples were also supplied with crutches. It is noteworthy that a good deal of the clothing distributed is made by the policemen's wives at the Police Institute.

THE COTTAGE BENEFIT NURSING ASSOCIATION AND THE STATE REGISTRATION OF NURSES. -On Dec. 7th Lady Ancaster presided at the half-yearly meeting of the general council of the Cottage Benefit Nursing Association at Denison House, Vauxhall Bridge-road. The secretary, Miss Broadwood, having read the report which appealed for more subscribers, the Hon. Sydney Holland addressed the meeting on the subject of the State registration of nurses. He said that he opposed registration because it would tend to deteriorate nursing and not improve it. The supporters of registration claimed that if nurses were registered the public would have a guarantee that a nurse had had a proper training and was a suitable person for the work. No one had ever suggested that registration should be compulsory. Character and suitability were as important as technical knowledge, and character could not be tested by examination. Too much was made of examinations nowadays. From his own experience he knew that many nurses, who passed examinations did not make the best nurses, and some who came out at the top could never make good nurses. If registration were adopted the standard of examination would have to be low in order that the necessary number of women might pass the test. Nurses would not submit to a hospital training if the State said that only registration was necessary to become a good nurse. Examination would lower the standard of technical knowledge. Hardly any medical man would be so stupid as to recommend a nurse simply because she was on the Register. He would want to know something about her character. With regard to the public, the question only concerned the rich. The poor had such nurses as the Queen's Jubilee Nurses, the nurses of an association such as the Cottage Benefit Nursing Association, and the Poor-law and infirmary trained nurses. Registration would not even be a guarantee of technical fitness, for the methods of treatment were constantly changing and the physical capacity of the nurse might also change. In order that the public might judge of the training which a nurse had had, Mr. Holland suggested the publication of an official directory.

ROYAL COLLEGE OF PHYSICIANS OF LONDON: THE WEBER-PARKES PRIZE AND MEDALS.—The next award under this foundation will be made in 1912, and the adjudicators have selected as the subject of the essay for that occasion: "The Influence of Mixed and Secondary Infections upon Pulmonary Tuberculosis in Man, and the Measures, Preventive and Curative, for Dealing with Them." All essays, together with any preparations made in illustration of them, must be transmitted to the registrar of the College during the last week of May, 1912, in accordance with the regulations relating thereto, copies of which will be forwarded from the College on application. The award will be made at some time previous to Oct. 18th in that year, on which day the prize and medals will be presented to the winners.

UNIVERSITY OF DURHAM.—The King in Council has been pleased to appoint the Duke of Northumberland, Sir Hugh Bell, Bart., Miss E. M. N. Williams, M.D. Lond., D.P.H. Cantab., Mr. G. G. Butler, M.A., Mr. J. S. G. Pemberton, M.A., and Mr. John Wilson, M.P., to be members of the Senate of the University. At a meeting of the council of the University of Durham College of Medicine, Newcastle-on-Tyne, Sir George Hare Philipson, M.B., the President of the College, and Mr. J. E. Gibson, M.A., were unanimously elected as the two representatives of the council of the College to act on the Senate, as constituted under the University of Durham Act, 1908, while Dr. David Drummond and Professor Robert Howden were appointed to represent the Academic Board of the College on the new Senate.

CENTRAL MIDWIVES BOARD.—Special meetings of the Central Midwives Board were held on Dec. 1st and 2nd at Caxton House, Westminster, with Dr. F. H. Champneys in the chair. The Board considered the following charges amongst others against the midwives whose names are given below, and ordered them to be struck off the roll. Mercy Glew, that notwithstanding repeated warnings she persistently neglected to provide herself with a clinical thermometer or to take any steps to render herself competent to read the same, and that having been duly suspended from practice by the local supervising authority on account of having been in contact with a case of puerperal fever, she nevertheless continued to attend women as before, without having disinfected herself, her clothing, and her appliances to the satisfaction of the local supervising authority. Mary Ann Richardson, that being in attendance as a midwife at a confinement, the patient suffering from an offensive discharge, and having complained to her that she felt very ill, she did not send for a doctor. Elizabeth Taylor, that being in attendance as a midwife at a confinement, the patient suffering from puerperal fever, she did not send for a doctor. Georgina Martha Winfield, that being in attendance as a midwife at a confinement, the patient suffering from continual sickness and from diarrhoa, with a temperature of 103° F., she did not send for a doctor. Jane Booth, that being in attendance as a midwife at a confinement, the patient being ill, suffering from scarlet fever, she did not send for a doctor. Emily Bussey, that being in attendance as a midwife at a confinement, the patient being ill, suffering from suppressed lochia and headache, she did not send for a doctor. Jane Philpot, that being in attendance as a midwife at a confinement, the patient being seriously ill, with symptoms of puerperal mania, she did not send for a doctor. Louisa Blendell, Jane Finnegan, Mary Jane Rowlands, and Mary Ann Massey, that they were uncleanly and did not take with them to confinements the appliances and antiseptics required by the rules of the Board. Sentences on the following midwives after charges alleged against them had been considered were deferred: Mary Elizabeth Cornwall, Mary Morrall, Mary Jane Whittle, Catherine Williams, Elizabeth Gazey, and Susannah Morgan.

ROYAL SOCIETY OF MEDICINE.—A special general meeting of the Fellows of the Royal Society of Medicine will be held on Wednesday next, Dec. 15th, at 5 p.m., to consider a scheme, approved by the Council of the Society, for raising the money necessary to erect a suitable building on a new site. The scheme has far-reaching issues with regard to the future of the Royal Society of Medicine, and its adoption will no doubt be approached with due caution and, we trust, in the presence of a full attendance of Fellows.

THE BATTERSEA BROWN DOG MEMORIAL.—On Wednesday night the Battersea borough council decided, on the motion of Dr. L. S. McManus, seconded by Dr. J. T. Richards, to endeavour to arrange for the removal of the offensive inscription on the Brown Dog Memorial at Battersea and to substitute a truthful one. The recommendation of the Highways Committee was that the solicitor should negotiate for the return of the memorial to its donors. A deputation attended and urged that there should be no interference with the memorial or at most that the inscription should be altered in a manner agreeable to all parties. Brown Dog was said to have an "educational value." During the discussion it was pointed out that the Commissioner of Police had written stating that special police protection was costing £700 a year. A member said a memorial which was the cause of so much acrimony and expense was necessarily a nuisance and ought to be removed.

University of Liverpool.—Three new lectureships were instituted by the Council of the University of Liverpool at its meeting on Nov. 30th on the recommendation of the Senate and of the Faculty of Medicine: (1) a lectureship in orthopædic surgery to which Mr. Robert Jones. Ch.M.Liv., F.R.C.S. Edin., was appointed; (2) a lectureship in physiology, to which the present assistant lecturer and demonstrator, Dr. H. E. Roaf, was appointed; and (3) a lectureship in pharmacology, to which Mr. Owen T. Williams, M.B. Lond., M.R.C.P. Lond., was appointed. The lecturer in orthopædics will deliver a course of lecture-demonstrations during the summer term, which will be open to graduates and undergraduates alike. The lecturer in physiology will take special charge of the chemical physiology department. The lecturer in pharmacology was temporary lecturer in the subject during the last two sessions, he will supervise pharmacological research, and will hold a class in practical pharmacology, which is in the third year of the curriculum for the degree.

PROPOSED OPEN-AIR SANATORIUM FOR WORKING-CLASS CONSUMPTIVES IN MIDDLESEX .- For some time a movement has been on foot, having for its object the provision of an open-air sanatorium for working-class consumptives in the county of Middlesex. In furtherance of this object a largely attended meeting was held recently at Hillingdon Court, Uxbridge, by the kindness of Lord and Lady Hillingdon. The meeting was addressed by, amongst others. others, Dr. J. L. Lock (medical officer of health of the Uxbridge urban district), Dr. A. Charpentier (medical officer of health of the Uxbridge rural district), and Dr. J. J. Perkins (honorary secretary of the National Association for the Prevention of Consumption). It was pointed out at the meeting that the deaths from consumption in the county were nearly one-tenth of the total death-rate. A resolution was ultimately adopted supporting the scheme. Part of the money will be raised by a 20,000 crowns fund, subscriptions to which will be invited from all classes; when the sum has been collected and a beginning made an appeal will be issued for larger subscriptions. It is intended to erect buildings which, when completed, will accommodate 100 patients, and it is believed that by spending as little as possible on buildings (which will be on the pavilion plan) the total cost will not exceed £100 per bed. A start will be made as soon as £5000 have been raised, it being hoped to provide 30 beds, together with the administrative buildings, for this sum. Further accommodation will be added as funds permit. The beds are to be for the use of all suitable Middlesex cases whose cost of maintenance is guaranteed either privately, or by the local authorities, or other bodies or persons maintaining beds. The total cost per patient, it is considered, ought not to

exceed 25s. per week in a sanatorium with 100 beds. was originally intended that public authorities should be asked to pay for the cost of establishing the beds they would maintain, but this was found unworkable in Middlesex. It is proposed to appoint a local representative in each district to supervise the local collection of funds, and the local banks will be asked to receive subscriptions. Mr. Andrew Clark, F.R.C.S., was elected representative for the Uxbridge district at the meeting.

A LECTURE on "The Prevention of Tuberculosis, the Larger Outlook," will be delivered on Monday, Dec. 13th (and not on the 15th, as had been previously announced), at the Municipal Buildings, Tottenham, by Dr. R. W. Philip of the Royal Victoria Hospital for Consumption, Ediphysh. Edinburgh. Entrance will be by tickets, which can be obtained from the medical officer of health of Tottenham.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Prorogation of Parliament.

PARLIAMENT was prorogued on Friday, Dec. 3rd. Amongst the Acts which received the Royal Assent on that occasion was the Housing and Town Planning Act.

HOUSE OF COMMONS.

THURSDAY, DEC. 2ND. The Prison Commission.

The Prison Commission.

Sir Philip Magnus asked the Secretary of State for the Home Department whether a vacancy was shortly to occur on the Prisons Commission; and whether, having regard to the fact that the commissionership which might be vacant had been held for some years by a member of the medical profession, he would undertake, in the event of the occurrence of a vacancy, to appoint a member of the medical profession to the post.—Mr. Gladbrone replied: It is true that Dr. Donkin, one of the Prison Commissioners, retires shortly under the age rule, but I hope to be able to make arrangements which will ensure the continuance of the invaluable services which Dr. Donkin has rendered to the medical side of prison work. I hope at the same time to increase the strength of the prison administration in order to enable it to meet the greatly increased responsibilities thrown upon it by recent legislation.

Infantile Mortality.

Infantile Mortality.

Mr. James Stuart asked the President of the Local Government Board whether he could state the number of deaths in England and Wales of infants under one year per 1000 births in each of the years 1904 to 1908, and in the first nine months of each of these years and of 142 present year, distinguishing London, the 76 great twens, and the 142 smaller towns from the rest of the country.—Mr. Burns replied (by written answer): The following tables give the information asked for:—

I .- Infant Mortality in each of the Years 1904 to 1908.

_	Deaths under one year to 1000 births in the years—						
	1904	1905	1906	1907	1908		
England and Wales	145	128	132	118	121		
76 great towns, including London	160	140	145	127	129		
London	145	130	131	116	113		
142 smaller towns	154	132a	138	122	124		
England and Wales, less the 218 towns	125	113b	116	106	110		

II .- Infant Mortality in the First Nine Months of each of the Years 1904 to 1909.

	Deaths under one year to 1000 births in the first three quarters of each of the years—							
	1904	1905	1906	1907	1908	1909		
England and Wales	149	131	135	113	115	106		
76 great towns, including \Loudon	165	142	148	118	123	114		
London	149	129	133	110	110	104		
142 smaller towns	157	136a	140	118	117	107c		
England and Wales, less the 218 towns	127	1166	117	104	105	97d		

a, 141 small town b, less 217 towns; c, 143 small towns; d, less 219

Appointments.

Successful applicants for Vacancies. Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANGET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

Bell, C. W., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Dunoon District of the county of Argyll.

BOYLE, JAMES, M.B., C.M. Glasg., has been appointed District Medical Officer by the Cardiff Board of Guardians.

BREND, W. A., M.B. Lond., Barrister at Law, has been at Lecturer in Forensic Medicine at Charing Cross Hospital.

COATS, GEORGE, M.D. Glasg., F.R.C.S. Eng., has been appointed Ophthalmic Surgeon to the Hospital for Sick Children, Great Ormond-street

BDMOND, G. M., M.D., M.S. Aberd., has been appointed Medical Officer to the Post Office at Aberdeen.
 GEE, OSWALD ARNOLD, M.B., C.M. Edin., has been appointed District Medical Officer by the Gloucester Board of Guardians.

GRIFFITHS, J. HOWELL, M.D., B.S. Lond., D.P.H. Lond., has been appointed Medical Superintendent at Gore Farm Hospital, Dartford.

LL, A. T., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Llanrwst District of the counties of Carnarvon and Denbigh.

PEPPER, A. J., M.S., M.B. Lond., F.R.C.S. Eng., has been appointed Consulting Surgeon to St. Mary's Hospital.

ROBERTS, C. HUBERT, M.D. Lond., F.R.C.S. Eng., M.R.C.P. Lond., has been appointed Physician to In-patients at Queen Charlotte's Lying-in Hospital.

Pacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRKENHEAD BOROUGH HOSPITAL.—Junior Resident House Surgeon. Salary £80 per annum and fees.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—House Surgeon. Salary £130 per annum, with board and residence.

CARDIFF INFIRMARY (GENERAL HOSPITAL).—House Surgeon for the Ophthalmic and Bar and Throat Departments for six months. Salary £30, with board and laundry.

CHARTHAM, KENT COUNTY ASYLUM.—Third Assistant Medical Officer. Salary £145 per annum, with board, quarters, attendance, and washing.

DERBYSHIE ROYAL INFIRMARY.—Two House Surgeons, a House Physician, and an Assistant House Surgeon. Salaries of three former £100 per annum, and of latter at rate of £60 per annum, with apartments, board, &c.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum, with apartments, board, &c.

East London Hospital for Children and Dispensary for Women, Shadwell, E.—Medical Officer for six months. Salary at rate of

Shadwell, E.—Medical Officer for six months. Salary at race of £100 per annum, with luncheon and tea.

ENFIFELD AND EDMONTON ISOLATION HOSPITAL, Winchmore Hill.—
Resident Assistant Medical Officer. Salary at rate of £150 per annum, with rooms, rations, and washing.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, London, S.E.—Ten Clinical Assistants in the Out-patient Depart-

GRIMSBY AND DISTRICT HOSPITAL.—House Surgeon. Salary £120 per annum, with board, lodging, a'tendance, and washing.

Hemple Hempstead, West Herf's Hospital.—House Surgeon. Salary £100 per annum, with rooms, board, and washing.

Hôpital Français, 172, Shaftesbury-avenue, W.C.—Second Resident Medical Officer, unmarried. Salary £50 per annum, with full board and laundry. board and laundry.

Indian Medical Service, India Office, London.—Thirteen Commissions in His Majesty's Indian Medical Service.

LISTER INSTITUTE OF PREVENTIVE MEDICINE, Chelsea-gardens, S.W.— Senior Assistant in the Bio-Chemical Department. Salary £350 per annum.

LIVERPOOL INFIRMARY FOR CHILDREN.—Resident House Surgeon.

Also Resident House Physician. Salaries at rate of £60 per annum, with board and lodging.

LONDON HOSPITAL, Whitechapel, E.-Anæsthetist.

LONDON LOCK HOSPITALS.—House Surgeon to the Female Hospital, Harrow-road, W. Also House Surgeon to the Male Hospital, 91, Dean-street, Soho, W. Salary in each case £100 per annum, with board, lodging, and washing.

MANCHESTER, NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—Anæsthetist. Salary £15 per annum.

MIDDLESBROUGH, NORTH RIDING INFIRMARY.—Assistant House Surgeon, unmarried. Salary £75 per annum, with residence, board, and washing.

MIDDLESEX HOSPITAL MEDICAL SCHOOL. -Lecturer on Mental Diseases.

MIDDLESEX HOSPITAL, W .- Assistant Ophthalmic Surgeon.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood.—House Physician. Salary £75 per annum, with board, residence, &c.

NEWARK-ON-TRENT HOSPITAL AND DISPENSARY.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, lodging, and laundry.

NORTHAMPTON GENERAL HOSPITAL.—House Surgeon. Salary £90 per annum, with apartments, board, &c.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.-Radiographer.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Assistant Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, residence, and washing.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.— House Physician for six months. Salary at rate of £60 per annum, with board, residence, and laundry.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—Weber-Parkes Prize of 150 guineas and two silver medals.

ROYAL EYE HOSPITAL, Southwark, S.E.—Honorary Assistant Surgeon. St. Marylehone General Dispensary, 77, Welbeck-street, Cavendish-square, W.—Honorary Medical Radiographer. Also Honorary Surgeon.

SHEFFIELD, EAST END BRANCH OF THE CHILDREN'S HOSPITAL.—
House Surgeon to Out-patients. Salary £70 per annum, with
board, lodging, and washing.

Sherrife Droyal Hospital.—Assistant House Surgeon. Also Assistant House Physician. Salary £50 per annum each, with board, lodging, and washing.

Sheffield Union Hospital, Firvale.—Assistant Medical Officer (female). Salary £100 per annum, with apartments, rations, &c.

SOUTHAMPTON, FREE EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and residence.

VICTORIA HOSPITAL FOR CHILDREN. Tite-street, Chelsea, S.W.—House Physician for six months. Salary £30, with board, lodging,

WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant House Surgeon, unmarried. Salary £75 per annum, with board, residence, and washing.

WEST HAM AND EAST LONDON HOSPITAL, Stratford, E .- Honorary Dental Surgeon.

West London Hospital and Post-Graduate College, Hammer-smith-road. W.—Clinical Assistants, Throat, Nose and Ear, Skin, and X Rays, Pathological Laboratory, &c.; and Three Casualty Officers.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.-House Salary at rate of £80 per annum, with board, rooms, and

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Goole, in the county of York; at Harpenden, in the county of Hertford; and at Holywell, in the county of Flint.

Births, Marriages, and Deaths.

BIRTHS.

SAVILL.—On Dec. 3rd, at "St. Albans," Sea-road, Bexhill, the wife of Philip Savill, M.D., of a son.

WALKER.—On Dec. 2rd, at Kensington-crescent, the wife of Captain N. Dunbar Walker. R.A.M.C., of a daughter.

WARD.—On Nov. 30th, at The Tiled House, West Byfleet, Surrey, the wife of V. Godsalve Ward, M.D. Lond., of a son.

MARRIAGES.

DAVIDSON—DARBYSHIBE.—On Nov. 30th, at Holy Trinity Church, Brompton, Duncan Davidson, M.B. Oxon., M.R.C.S., L.R.C.P., of Coventry, to Beatrice Alice, daughter of Mr. and Mrs. Darbyshire of Pietermaritzburg.

BENSLEY.—On Dec. 5th, at Kelfield-gardens, North Kensington, W., Charles Egbert Wimond Bensley, M.D., Lieutenant-Colonel, late I.M.S. (retired), and H.E.I.C.S., in his 76th year.

BLAKE.—On Dec. 4th, at Old-court Mansions, Kensington, Frederick William Blake, M.D., Deputy Inspector-General, R.N., aged

William Blake, M.D., Deputy Inspector-General, R.N., aged 85 years.

COCHRANE.—On Dec. 4th, at Middlesex Hospital, James Mackeand Cochrane, M.D., aged 57 years.

HARVEY.—On Dec. 8th, at 85, Approach-road, Bethnal Green, H., William Harvey, M.P.S., in his 77th year, who for nearly fifty years faithfully discharged the duties of Dispenser at the City of London Hospital for Diseases of the Chest (Victoria Park Hospital). Funeral service will be held at the Church of St. James-the-Less, Bethnal Green, on Saturday, at 2.30 P.M. Interment at Hford.

KEETLEY.—On Dec. 4th, suddenly, at Brighton, Charles Robert Bell Keetley, F.R.C.S., senior surgeon to the West London Hospital, of Grosvenor-street, London, W., aged 61 years.

WARD.—On Nov. 28th, at his residence, Belmont, Castle Connell, Ireland, Major Espine Charles Robert Ward, F.R.C.S.I., late Army Medical Staff, aged 61 years.

N.B.- A fee of 5s. is charged for the Insertion of Notices of Births,

Hotes, Short Comments, and Answers to Correspondents.

A QUESTION OF PRIORITY.

WE have received a letter from Dr. J. Miller of Glasgow, which refers to a question of priority in research and in which he asks us to correct a false impression given by a report in THE LANCET of Sept. 7th, 1907, p. 704. The report in question was an abstract of a communication read before the Pathological Section of the British Medical Association at the Exeter meeting two years ago, and began with these words: "Dr. David Lawson (Banchory) then detailed some observations upon The Elimination of Opsonius by the Exerctory Organs, which had been carried out in the Banchory Laboratory in conjunction with Dr. James Miller." This report did not come to Dr. Miller's notice at the time but has since been quoted in a book on Vaccine-therapy which on its authority attributes the research in question to Dr. Lawson and not to The fact was that Dr. Miller carried out the investigations in the laboratory at the Nordrach-on-Dee Sanatorium as the guest of Dr. Lawson, who quoted the results at the Exeter meeting, but with the sanction of Dr. Miller, to whom he attributed the work. We have Dr. Lawson's full assurance of this, for as soon as Dr. Miller had communicated to him the passage in the book to which we have referred he replied that he was scrupulously careful to preface his remarks at Exeter by stating that the investigation was not his own, but that the credit of the ideas and their carrying out was Dr. Miller's, and that if the work had been published in such a way as to give a different impression it had neither his sanction nor approval. Dr. Lawson has also written to the author who quoted our report asking him to accord Dr. Miller his proper credit in future issues of his book. We may add that we published Dr. Miller's complete observations in THE LANCET of April 4th, 1908, under the title of "Note upon the Tuberculo-Opsonic Index of the Urine and Sweat in Health and Tuberculous Disease.

We, perhaps, inadvertently did an injustice to both Dr. Miller and Dr. Lawson, and are glad to take this opportunity of giving the former gentleman the credit of his research and of clearing the latter of an imputation which cannot fail to be unpleasant to any scientific observer.

"DR. GUILLOTIN."

To the Editor of THE LANCET.

SIR,-Dr. Watkin W. Jones is probably better acquainted with the history of the guillotine than myself. In venturing to question the validity of the claim he seeks to establish for Louis I have simply quoted from Lenotre, who is responsible for my statements.

Lenotre attributes distinctly the invention to Guillotin. The merriment to which Dr. Watkin Jones alludes, and with which (according to the Monitcur) Guillotin's remarks were received, referred not to the proposal itself, but to the jocular offer of cutting off the heads of the members of the constituent assembly without their knowing it. The machine chosen, says Lenotre, was "celle qu'avait proposé l'auteur de la machine." Louis was only consulté and submitted an avis motire. report, in which he speaks of instruments in use previously in Germany, Denmark, and England which might serve as a model.

A certain Guédon was then commissioned to make a machine in accordance with the description of Louis, but this was not done, and Guillotin "qui tenait à son idée" applied to Samson, exécuteur des hautes auvres, and the instrument which was first tried on Pelletier was ultimately constructed by a friend of Samson called Schmidt. Speaking of hecatombs of victims decapitated shortly after "on peut * demander," says Lenotre, "ce qui serait advenu si le Dr. Guillotin n'avait pas conçu le sinistre héritier de son nom." I will add (alwayaccording to Lenotre) that Louis is said to have been greatly grieved at his name being attached to the invention. The subsequent change of designation might be taken also as indicating that Guillotin was chiefly concerned in the invention.-I am, Sir, yours faithfully,

Route de la Croix, Le Vesinet, Nov. 30th, 1909. OSCAR JENNINGS.

FRAUDULENT DIPLOMAS IN RUSSIA.

SOME years ago the Russian Minister of the Interior, with the object of suppressing the name "dentist" in favour of the term "doctor of dentistry" for those who had gone through a dental course in special schools, issued a circular forbidding dentists to receive pupils. But for such students as were already being taught by dentists he fixed a period for examination in the universities, conditional on the presentation of a certificate by their teachers. Now that the latest period for such examination is running out, a peculiar form of Russian towns. It has been found that in Kieff, Smolensian and other large towns, doctors of dentistry have been giving false certificates to people who have never been connected with them, and those who bought the certificates submitted them to the university and obtained in exchange a dental degree carrying with it the right to reside anywhere. As a conse quence, says the journal, a large number of Jews have settled in

certain towns and are engaged in various businesses, not necessarily in the dental direction. It is averred that as many as 5000 such degrees have been issued. According to the Smolensk Viestnik, many arrests have taken place in connexion with this fraudulent practice, including medical officers in the public services. Particulars of a similar fraud have also been published. Of late many applications have been made to the Kieff University for verification of dispensers' certificates, of which large numbers, it would appear, have been forged and sold, and owners of pharmacies have been obliged to apply to the universities alleged to have issued the certificates to verify them before engaging dispensers.

PRINTING "IN REVERSE."

To the Editor of THE LANCET.

SIR,-With reference to the recent letter of "Amateur Printer." may recall a note which appeared in the Rapid Review of April, 1904, which reviewed an article in the Leisure Hour? It was stated that two scientists had invented a reformed alphabet and recommended that the characters should be "white on black" instead of "black on white," and also that the speed of recognition was about ten times less in the latter style than the former. This has always seemed to me somewhat doubtful. I have also heard that the private newspaper of the Paris croque-morts (undertakers' men) is thus printed, although I have never seen a copy. I would remind readers of THE LANGET whose sight is impaired of "a very simple contrivance to aid myopic and other failing eyes, especially in reading," used and recommended by Sir W. ... Gairdner, whose letter with the foregoing heading was published in THE LANCET of Oct. 1st, 1904, p. 980. I tried it and found it useful.

I am, Sir, yours faithfully, London, Nov. 30th, 1909.

DANGEROUS HAIR DYES.

DURING the past few years nitrate of silver has to some extent been replaced in hair dyes by paraphenylene-diamine, with the result that numerous cases of poisoning have been reported in the medical journals. The chemistry of this substance and its mode of action are described in the Pharmaceutical Journal of Oct. 30th. The toxic effects are attributed to the formation, by exidation, of quinone di-imide, which is a powerful irritant both of the skin and of the mucous membrane. One of the most popular hair dyes containing paraphenylene-diamine is put up in two bottles, one containing hydrogen peroxide solution, and the other an ammoniacal solution of the dye. The hair is directed to be freed from grease, after which the dye solution is applied and then the bydrogen peroxide. It is said that in skilful hands it is possible to obtain fine tints, but the preparation is a dangerous one. Another formula directs the solution of the dye in a mixture of water, glycerine, and alcohol, with or without ammonia. If ammonia be present it is not considered necessary to remove grease from the hair before applying the solution. Even more dangerous hair dyes are prepared from paraphenylene-diamine and diamidophenol with potassium bichromate, the proportions of the ingredients being varied according as a black, brown, or blonde tint is desired. Such preparations sometimes cause actual burns, followed by an extensive eczema which is very difficult to cure. In one form or another the use of paraphenylene-diamine as a hair-dye has been repeatedly shown to cause these troubles, accompanied by itching, urticaria, nausea, nervous symptoms, sleeplessness, dizziness, epileptiform attacks, and syncope, and in several instances death has resulted.

HEALTH MATTERS IN SOMALILAND PROTECTORATE.

Mr. H. E. S. Cordeaux, C.B., C.M.G., Commissioner of this Protectorate. in his report to the Colonial Secretary for the year ended March 31st. 1909, estimates the population (no actual census having ever been taken) at about 350,000, including about 100 Europeans and whites. The general public health during the year was good and there was no serious outbreak of disease of any kind. There was an increase in the number of patients attending the hospitals pretty evenly distributed. This increase has not affected the death-rate or the number of in-patients, and may be attributed to the large number of cases of simple skin diseases. Every endeavour has been made to keep a supply of simple drugs to meet these requirements. The three coast hospitals are chiefly visited during the winter months— Berbera, for example, having a population of from 20,000 to 30,000 during that time, whereas during the summer 3000 to 4000 is probably an outside figure. This variation has to be taken into account when considering statistics. This migratory condition of the population is due to the excessive heat on the coast during the summer, the impossibility of feeding stock in the neighbourhood, and the many conditions governing trading of all sorts. There are two great considerations which materially affect the general public health. These are, first, that the people are practically all Mahommedans, and therefore total abstainers from alcohol; and, secondly, the indifferent precaution taken either against excessive heat by day or chill at night by the Somalis. In connexion with abstinence from alcohol, Mr. Cordeaux considers there "may be mentioned the very marked difference shown under anæsthetics by the Somalis as compared with European and other races addicted to the use of this stimulant. Serious respiratory trouble is practically never met with and struggling is quite unusual, yet the people are of a both nervous and excitable temperament. In few cases only do the natives either smoke or take tobacco or its usual concomitant, coffee. Regarding the second condition to which I

have drawn attention, the native dress is the same by day as night and consists of cotton only. Wool is seldom, if ever, worn, nor is the Somali provident enough to provide himself with a blanket. Taking this into consideration we account for a very large percentage of the total cases of respiratory diseases, rheumatism, and nerve pains. The application of another Somali trait of character goes some way to explain their freedom from sun troubles, for, in contradistinction to the imported Indians, they drink an incredibly small amount of fluid when exposed to the sun on the march, being fully convinced that by such indulgence staving power is affected and heat stroke more liable to occur both in man and beast. In regard to the general sanitary condition of the protectorate and its chief towns, the Com-missioner testifies that a considerable improvement has taken place. General civil hospitals exist at the three coast towns of Berbera, Bulhar, and Zaila. At Berbera there are also an isolation hospital for tuberculous patients and a single-ward building for the accommodation of small-pox cases. A disinfecting station also exists at Berbera consisting of two rooms and a caretaker's hut; this is furnished with a small "Clayton disinfector" capable of meeting all probable requirements. Bulhar and Zaila are provided with temporary matting huts or tents to meet any contagious disease outbreak. The inland or up-country camp hospitals are at Sheikh and Burao. At the former the civil camp hospital exists separately from the military hospital, whilst at Burao civil and military patients are attended by the military medical officer, the Civil Medical Department furnishing a part of the equipment. The number of patients treated at the civil hospitals in the year 1908 was 17,012, as compared with 10,458 in

SMELLS AND THEIR CLASSIFICATION.

To the Editor of THE LANCET.

SIR,-It is said that "necessity is the mother of invention," therefore it seems that there has been only small inconvenience to our predecessors by the absence of smell classification, otherwise such would have been accomplished long ago. With the advent, or I should say the perfection, of the education of the present day, I think that there arises now some call for classification of smells. When I was a student it struck me very forcibly that medical lecturers laboured under a great difficulty in describing the article or substance they had to dea! with in the absence of the specimen, whereas they could describe the colour, taste, consistence, but when it came to smell they were baffled completely. For the want of a standard, the vocabulary so far as the adjectives are concerned was used profusely, and at the end of it all no one was any the wiser as to the character of the smell. To illustrate my point I will refer you to the British Pharmacoporia, 1885, a product of a very learned body, and therein you will find the smell of musk described as follows: "A very strong, diffusible, penetrating, musk described as follows: persistent odour." With all With all these qualifying terms a student is as remote from knowing the exact smell as he was before. In the present Pharmacopula the learned authors have tried to improve the description by saying that musk has "a very characteristic, penetrating, persistent odour." You will find a large number of similarly ambiguous descriptions of smells throughout the Pharmacopæia and other books dealing with subjects allied to medicine.

The layman generally describes a smell as a "stink" or a "scent," and a lady describes it as "horrid" or "lovely." The sense of smell may be normal, absent, intensified, deficient, or perverted. When normal I daressy it means the acuity of the sense of smell in the majority of persons. When absent we say they have "anosmia." This affliction has its advantages as it enables them to enjoy stale London eggs as if they were new laid. Some have too keen a perception of smell, or "hyperosmia." This is very marked in the blind. Isaac of old said to Jacob, "Thy smell is not the smell of Esau." I came across a gentleman who kept his ipecacuanha powder in a remote corner of the dispensary, and he told me that if anyone removed the stopper he would at once perceive the smell and would have an attack stomach-ache, and I had proof of the accuracy of his words.

The sense of smell is intensified by the administration of strychnine. In some cases we have a perversion of the sense of smell, "parosmia." This is of great clinical importance. A strange smell is often the aura in epilepsy and sometimes the precursor of insanity. There are some persons, if I may use the term, "smell-blind." A fellow student who afterwards did some chemistry with me for the D.P.H. used to gloat over the lovely (as he called it) perfume of bisulphide of carbon. He afterwards became one of the medical inspectors at the Local Government Board. The sense of smell is the function of the olfactory nerve which also distinguishes the various flavours, and this may be the reason why so many persons cannot distinguish smell from taste. four primary tastes are sweet, bitter, acid, and salt, and these have no effect on the olfactory nerve; hence paralysis of this nerve does not delete the sweet, bitter, acid, or salty character of substance, but does of the flavouring agents. But paralysis of the glosso-pharyngeal and certain fibres of the fifth nerve destroys the sense of taste but not flavour. Some of the senses are very fully classified, vision and hearing in particular; probably these give the greater pleasure to the great majority. We have primary and secondary colours, and therefore to describe a colour as "horrid" would not be acceptable, although such passes muster for the smell. In the case of hearing, the classification is so complete that you can describe the musical notes from the grunt of the pig to the song of the nightingale.

Passing on to the classification of smells, some years ago, when

working specially in chemistry, I did bottle up some characteristic smells, and concected a name for each. I do not recollect the details of that work, but it leaves an impression on me that some classification of smells ought to be possible. In the selection of odoriferous substances one recognises the importance of choosing pure definite chemical bodies so as to avoid mixed smells, and that they should be capable of ready dilution, as strong odours not only quickly temporarily paralyse the olfactory nerve endings but also irritate the fifth nerve. The concocted names of the primary odours should be easily adapted to affixes and prefixes. Having adopted the standard of odours and their names, I would suggest sets of them at the elementary schools to familiarise the children with them and their names, as is done at present in the case of colours. The foundation laid of an octave of smells it would not be so difficult as hitherto to impart more definitely and intelligently the character of a smell to others in legal and medical

As a preliminary classification of the primary odours we might select such bodies as (1) ammonia; (2) sulphuretted hydrogen; (3) bromine; (4) valerianic acid; (5) ether; (6) menthol; (7) camphor; (8) artificial musk; (9) nitro-benzol. Next we have to concoct a name for each of these odours apart from the names of the substances, such as is done For example, red does not pertain to any particular substance, but is the quality of large numbers, and we can qualify the quality in various ways, such as reddish-vellow and reddish-brown, or yellowish-red and brownish-red.

After settling the primary odours and name we could, I think, in the same manner describe the odours fairly well of a larger number of I am, Sir, yours faithfully, substances.

Nov. 22nd, 1909. MORRIS J. WILLIAMS.

WANTED-A SIMPLE PURINOMETER.

- A CORRESPONDENT wishes to hear of a simple inexpensive method and apparatus for estimating purins in urine. There is a process (given in Boston's "Clinical Diagnosis") which has a simple apparatus devised by Camerer, but he cannot find it in any instrument catalogue at his command. The only apparatus which he can find in the lists
- G. R. I. (Whalley Range).-The information contained in your legal correspondent's letter is correct. Anyone can notify a death and is at liberty to express an opinion of its cause, but no one but a registered medical practitioner can give a statutory death certificate.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Meek.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

TUESDAY.

MEDICAL SECTION: at 5.30 P.M.

Joint Debate:

On the Diagnosis and Treatment of Duodenal Ulcer, opened by Mr. B. G. A. Moynihan, followed by Sir T. Lauder Brunton, Bart., Mr. Herbert Waterhouse, Dr. W. Hale White, Dr. A. F. Hertz, Dr. R. Hutchison, and others.

DERMATOLOGICAL SECTION (Hon. Secretaries—E. G. Graham Little, H. G. Adamson): at 5 p.m.

Case and Specimens:
Dr. T. D. Savill: Scierodermia.
Dr. George Pernet: Sections of Melanosis Cutis.
Mr. J. MacDonagh: Trichoepithelioma Papulosum.
Dr. Graham Little: (1) Telangiectatic Lupus Brythematosus; (2) Tertiary Syphilis.
Mr. G. W. Dawson: (1) Acne Keloid; (2) Bazin's Disease: (3) Case for Diagnosis.

ELECTRO-THERAPEUTICAL SECTION (Hon. Secretaries—Reginald Morton, G. Harrison Orton): at 8.30 p.m.

Paper:
Dr. N. S. Finzi: Radium in the Treatment of Malignant
Growths.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendiah

MONDAY.—8.30 P.M., Prof. A. Keith: Recent Researches on the Anatomy of the Heart.—Dr. T. Lewis: Auricular Fibrillation.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17, Blooms-

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish square, W.

FRIDAY.—8.30 p.M., Discussion on Tick Fever (opened by Sir William Leishman).—Paper read for Dr. A. Balfour (Khartoum) and Captain D. Thomson, R.A.M.C. (Khartoum): Two Cases of Non-ulcerating Oriental Sore, better termed "Leishman Nodules" (with photograph).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c. BOYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoin's Inn Fields, W.C. MONDAY, WEDNESDAY, AND FRIDAY.—5 P.M., Dr. G. E. Smith: The Evolution of the Brain. (Arris and Gale Lectures).

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22,

College Street, W.C.

Monday.—4 P.M., Dr. J. Galloway: Clinique (Skin). 5.15 P.M.,
Lecture:—Dr. F. Powell: Some Diseases of the Larynx, with
Special Reference to Hoarseness and Loss of Voice.

Tuesday.—4 P.M., Dr. W. Ewart: Clinique (Medical). 5.15 P.M.,
Lecture:—Dr. P. Kidd: Some Points in the Clinical History of
Praymonia

Pneumonia.

WEDNESDAY.—4 P.M., Mr. T. H. Openshaw: Clinique (Surgical).

5.15 P.M., Dr. E. I. Spriggs: The Physiology of the Appetite, with Special Reference to the Arrangement of Meals and the Use of Tonics.

URSDAY.—4 P.M., Sir Jonathan Hutchinson: Clinique (Surgical), 5.15 P.M., Lecture:—Dr. R. Hutchison: Some Conditions which

Simulate Dyspepsia.
FRIDAY.—4 P.M., Dr. StClair Thomson: Clinique (Throat)

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-

Oad, W.

MONDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays.

Mr. Dunn: Diseases of the Ryes. 2.30 P.M., Operations. 5 P.M.,
Lecture:—Mr. Armour: Practical Surgery.

TUESDAY.—10 A.M., Dr. Moullin: Gynecological Operations. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M.,
Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. R. Morton: X Ray Department.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children.
Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 P.M.,
Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. B. Harman: Diseases of the Ryes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Mr. Pardoe: Bacterial Infections of the Urinary Organs.

Women. 5 P.M., Lecture:—Mr. Pardoe: Bacterial Infections of the Urinary Organs.

Thursday.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays.

Mr. Dunn: Diseases of the Ryes. 2.30 P.M., Operations. 5 P.M., Mr. Dunn: Purulent Conjunctivitis.

FRIDAY.—10 A.M., Dr. Moullin: Gynacological Operations. Medical Registrar: Demonstration of Cases in the Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Kar. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Etherington-Smith: Clinical. Clinical.

Clinical.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Mr. B.
Harman: Diseases of the Eyes. Dr. Davis: Diseases of the
Throat, Nose, and Bar. 12.15 p.m., Lecture:—Dr. G. Stewart:
Practical Medicine. 2 p.m., Medical and Surgical Clinica.
X Rays. 2.30 p.m., Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadmought Hospital, Greenwich.

NDON SCHOOL OF CLINICAL MEDICINE, Dreadmought Hospital, Greenwich.

Monday.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery.

3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R.
Lake: Rar and Throat. Out-patient Demonstrations:—10 A.M.,
Special lecture:—Sir Dyce Duckworth: On the Diatheses.

TUSBDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine.

3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris:
Diseases of the Skin. Out-patient Demonstrations:—10 A.M.,
Surgical and Medical. 12 noon, Skin.
Wednesday.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor:
Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient
Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Rys.

Thursday.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine.
3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. SaleBarker: Radiography. Out-patient Demonstrations:—10 A.M.,
Surgical and Medical. 12 noon, Ear and Throat. 3.15 P.M.,
Surgical and Medical. 12 noon, Ear and Throat.

Special Lecture:—Sir William Bennett: The Use of the Thermo-cautery in Surgery.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Special Lecture:—Dr. Rose Bradford: Nephritis.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:— 10 A.M., Surgical and Medical. 11 A.M., Sye.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—
10 A.M., Surgical and Medical. 11 A.M., Eye.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Rivans),
2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose,
Throat, and Ear (Mr. H. W. Carson). 4.30 P.M., Medical
In-patient (Dr. A. J. Whiting).

TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld).
2.30 P.M., Operations. Clinics:—Surgical (Mr. W. Edmunds);
Gynæcological (Dr. A. E. Glies).

WEDNESDAY.—Clinics: 2-.230 P.M., Medical Out-patient (Dr. T. R.
Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks).
3 P.M., X Rays (Dr. H. Pirie). 4.30 P.M., Lecture:—Dr. A. H.
Pirie —The Treatment of Ringworm by X Rays.
THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. B. Glies'.
Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical
(Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappelt
4.30 P.M., Lecture:—Dr. T. R. Whipham Idiocy and Allied
Conditions in Children.

FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. H. Rivans).
2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Rye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Lesile).

HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great
Ormond-street, W.C.
THURSDAY.—4 P.M., Lecture (Medical):—Dr. Still: Epilepsy.

Ormond-street, W.C.
THURSDAY,—4P.M., Lecture (Medical):—Dr. Still: Epilepsy.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, en-square, Bloomsbury, W.C.

MONDAY.—4 P.M., Lecture: Sir Victor Horsley: Surgical Diagnosis and Treatment of Diseases of the Nervous System.

TUESDAY.—3.30 P.M., Clinical Lecture: Sir William Gowers.
FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. T. G. Stewart: Hysterical

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-

THURSDAY.-4.30 P.M., Clinical Lecture:-Dr. A. Wylie: Nasal and Aural Hæmorrhage.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W
MONDAY.—3 P.M., Clinical Demonstration: Dr. H. Campbell.
TURBDAY.—5 P.M., Clinical Demonstration:—Dr. J. Mackenzie.
WEDNESDAY.—3 P.M., Clinical Demonstration:—Dr. F. Palmer.
TRURBDAY.—3 P.M., Clinical Demonstration:—Dr. T. D. Savill.
FRIDAY.—2 P.M., Clinical Demonstration:—Dr. P. Stewart. 5.30 P.M.,
Clinical Demonstration: Dr. E. Macnamara.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-

UREDAY.—6 P.M., Chesterfield Lecture:—Ul-crythema: I., Centri-fugum; II., Telangiectatic; III., Ophryogenes. THURSDAY.

OPERATIONS.

METROPOLITAN HOSPITALS.

MHTROPOLITAN HOSPITALS.

MONDAY (13th).—London [(2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynscological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopsedic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M.), Major 2 D.M.)

West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), West minster (2 P.M.), West London (2.30 P.M.), University College 2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Goldensquare (9.30 A.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Othladine, Gt. Ormond-street (9 A.M. and 2 P.M.), Othladine, Gt. Ormond-street (9 A.M.), Samaritan (9.30 A.M.), Major, 2 P.M.), Central London Throat and Kar (Minor, 9 A.M., Major, 2 P.M.), Central London Throat and Kar (Minor, 9 A.M., Major, 2 P.M.), Central London Throat and Kar (Minor, 9 A.M., Major, 2 P.M.), WEDNESDAY (15th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Chring Cross (3 P.M.), St. Thomas's (2 P.M.), Middlesex (1.30 P.M.), Chring Cross (3 P.M.), St. Thomas's (2 P.M.), St. Mary's (2 P.M.), National Orthopsedic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Boyal Bar (2 P.M.), Royal Orthopsedic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Conterla London Throat and Bar (Minor, 9 A.M., Major, 2 P.M.), Schos-square (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Contral London Throat and Bar (Minor, 9 A.M., Major, 2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Central London Throat (9.30 A.M.), St. Mary's (10 A.M.), Children, Gt. Ormond-street (

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 9th, 1909.

Dat	e.	Barometer reduced to Sea Level and 32° F.	Direc- tion of Wind.	Rain- fall.	Solar Itadio in Vacuo.	Maxi- mum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Dec.	3	28.71	W.	0.37	77	46	42	39	43	Cloudy
**	4	28.75	S.W.	0.09	57	46	39	39	40	Raining
**	5	29.16	W.	0.25	55	44	33	33	34	Fine _
,,	6	29 05	S.W.	0.12	55	43	34	38	39	Overcast
	7	29 22	S.W.	0.02	41	40	35	37	37	Overcast
**	8	29.86	Ñ.W.	0.01	51	42	35	34	35	Fine
**				0.01			70			
**	9	30:36	W.		44	39	32	32	33	Foggy

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The Bradshaw Tecture

O.N

THE BRAIN STRUCTURES CONCERNED IN VISION.

Delivered before the Royal College of Surgeons of England on Dec. 11th, 1909,

By FRANCIS BICHARDSON CROSS, M.B. Lond., F.R.C.S. Eng.,

CONSULTING OPHTHALMIC SURGEON TO THE BRISTOL ROYAL INFIRMARY AND SURGEON TO THE BRISTOL EYE HOSPITAL.

COMPARATIVE ANATOMY.

MR. PRESIDENT AND GENTLEMEN, -In the lower vertebrata a simple brain is formed by enlargement of the anterior end of the spinal cord and by the widening and division of its central canal to form ventricles. Upon this primitive brain swellings are developed in connexion with the sense of sight and smell. The sense of smell seems first of early importance probably for selection between nutritious or poisonous foods or a means of safety. In fishes we find the risual organs well developed and varying in importance with the necessity in the species for more or less perfect sight: optic lobes and tracts, an optic chiasma and infundibulum, a third, fourth, and lateral ventricles and corpora geniculata underneath the optic thalamus. These often vary conversely in importance with the olfactory region, which is enlarged when smell is the more needed function. In all fish the optic nerves cross quite separately one above the other, from one eye to the opposite optic lobe, or one nerve may pass through a slit in the opposite one.

In amphibians the brain is usually of low type but rather large. In the proteus, which is practically blind, the optic lobes are scarcely recognisable, but in the frog they are large and form the broadest part of the brain. In the reptilia the brain is long and narrow, but it has become much increased in size and is well differentiated, and we get a very definite cerebral cortex. The three mantles of the brain exist as found in mammals: (1) the basal pallium or pyriform; (2) the marginal pallium or hippocampal; and (3) the

neopallium or higher cortex (brain proper).

The brain in birds is broad and highly developed, enlarged chiefly by the size of the corpora striata. All the structures upon which sight depends are very well developed. The thalamus and optic lobes are highly organised, and there are even present small temporal and occipital lobes. In birds the optic chiasma is single and complete and crosses over the infundibulum. The bundles of fibres from each optic nerve interlace and alternate, but those of each nerve completely decussate to the opposite side. The optic tracts pass round the optic thalami and show well-developed geniculate bodies. In birds of prey, where rapid coordination between the seeing and capturing of their prey is essential, the optic lobes are very strongly developed. Vision is, as a rule, panoramic, one eye for each side. (The fowl sees its food one eye at a time.) The owls and hawks, whose eyes look forward and who undoubtedly possess a considerable field of binocular vision to enable them to catch their living prey; probably no fibres from the optic nerve pass direct without decussation. Their vision is binocular, but not stereoscopic, for which direct as well as decussating fibres are required.

In the marsupials the brain becomes still more highly organised. On the mesial surface of the hemispheres there appears a sulcus which runs horizontally behind and parallel with the hippocampal. This is the calcarine, or splenial, about which the cortical substratum for vision is placed; it is one of the earliest, best defined, and most constant fissures of the brain, and it can already be shown to form the calcar avis in the ventricle. A genual and a rostral sulcus also show on the mesial surface of the hemisphere,

although no corpus callosum as yet exists.

When we reach the placental mammals a corpus callosum becomes developed and completes the three great commissures with the anterior and the hippocampal. In the colugo (insectivora) the sulci on the brain become more marked; the most definite is a deep calcarine sulcus running horizontally forward, almost the whole length of the mesial No. 4503,

surface of the hemisphere; there are also very large anterior quadrigeminal bodies. In the many families of rodents there is a peculiar absence of sulci, especially on the mesial aspect of the brain, and the calcarine fissure is rarely seen. The squirrel requires very accurate sight, and he has large optic nerves and very developed anterior quadrigeminal bodies. The rabbit and the hare probably possess a very acute sense of hearing. They live to avoid being captured. The eyes are placed so much on the side of the head that each carries an enormous range over its field of vision, and they can see laterally and behind almost as well as in front. This wide panoramic vision cannot well be associated with any great binocular effort; nearly all the optic nerve fibres decussate.

In the carnivora the brain proper is highly developed; it passes forward over the olfactory bulb and backward over the cerebellum. There is a very high degree of binocular vision. In the fruit-eating carnivora the eyes are at the side of the head and they possess only a limited con-But in the felidæ and others the eyes are set vergence. forward and the pupil is very active. These animals require good distant vision, often when the light is dull, and they also need very reliable closer sight and a most perfect coordination of the eyes with the fore limb, by which they catch their prey. In the optic chiasma there are considerable direct as well as decussating fibres. There is a deep calcarine sulcus which with the intercalary shuts off a posterior lobe from the rest of the brain. In some species there appear secondary fissures, running out of the calcarine or even a definite retrocalcarine.

The ungulata are large animals and they need a large brain, but the mesial area is very simple. There is no high specialisation in the calcarine fissure; it is large and placed behind the splenium. It joins the intercalary and this the genual, showing a complex splenial or a form of cingular arc. The eyes are usually placed on the side of the head and separated by the forehead or nose. There is a wide area of periscopic sight, but they only have a limited amount of convergence and binocular vision. In the horse about

one-sixth of the fibres decussate.

In periscopic vision each eye is responsible for the field on its own side, and as this is represented on the opposite side of the brain all the optic nerve fibres must decussate. When the eyes tend to converge and give slight binocular vision a part of the nasal side of each field is overlapped. The superimposed parts have crossed to the opposite side of the middle line. The extreme nasal side of the right field is now concerned with the left field of vision, and the fibres that represent this must go to the opposite side of the brain. As the eyes turn more forward more and more of the nasal fields overlap, and more and more direct fibres are required. In perfect stereoscopic vision both visual axes must be turned towards the object looked at. The whole nasal field is carried across the middle line; we thus have an almost complete overlapping of the two fields, and, what is more important, overlapping of the objects seen by the two maculæ.

In the monkeys the calcarine sulcus becomes the centre of further developments. In the aye-aye and lemurs it is somewhat vertical, but in the tamarin, one of the anthropoid apes, and marmoset, a long single sulcus is prolonged horizontally far back into an elongated occipital lobe, which measures nearly half of the brain. In the squirrel monkey (cebidae) almost half the hemisphere lies behind the splenium. In this large occipital lobe the calcarine sulcus terminates in a wide-shaped bifurcation, and several other compensatory calcarine sulci are developed. The collateral runs forward on its ventral side and from its dorsal runs up a parietooccipital sulcus close behind the intraparietal. macacus we have the higher organisation of the old-world monkeys: the smell organs are well seen but diminishing. The long bifid retrocalcarine, the callosal and the parietooccipital with the intraparietal sulci are well developed, and the general conformation of the brain, especially in the occipital lobe, closely resembles that seen in man.

THE VISUAL PATH IN MAN.

The optic chiasma has very important relations with the third ventricle and with the structures adjoining it; and lesions involving this ventricle would be likely to cause visual symptoms. The lamina cinerea, the very vascular anterior perforated space" and the tuber cinereum, are

important relations of the optic chiasma, and bitemporal defects of the visual fields might be expected to arise from many directions. In some cases of primary optic atrophy I have seen a narrowing of the nasal fields which I have taken to be due to some error in the anterior perforated space. Acromegaly seems undoubtedly to depend on a diseased condition of the pituitary body, and the close relationship of the latter with the chiasma accounts for the early onset of bitemporal hemianopsia. Bitemporal hemianopsia from implications of the chiasma may, however, be very marked without any symptoms of acromegaly, and therefore presumably without implications of the pituitary body. The fibres in the chiasma are decussating, direct, and intercerebral.

About 80 per cent. of the retinal fibres pass through the lateral geniculate body, the other 20 per cent. go to the nucleus of the pulvinar of the optic thalamus. The geniculate fibres are directly associated with vision. Those that pass through the pulvinar (which is closely allied in structure and probably in function to the geniculate body) do not go with the others to the calcarine area. They have no doubt some special function connected with sight, but they pass independently to other centres; some of them probably go to the neighbourhood of the angular gyrus. Degeneration of the pulvinar, if the geniculate bodies are intact, does not produce hemianopsia. The upper half of the external geniculate body seems to correspond with the upper quadrant of the retina.

The axis processes from the optic tracts and lateral geniculate bodies traverse the posterior end of the internal capsule at the junction of its superior and inferior laminæ behind the lenticular body, and then pass directly backward as the optic radiations towards the occipital lobe. They run as the optic radiations towards the occipital lobe. along the outer wall, roof, and floor of the posterior horn of the lateral ventricle, and end in the nervous felt-work of the occipital cortex along the calcarine fissure. The occipitothalamic radiations consist chiefly of "corticipetal fibres" for sight, but "corticifugal fibres" also pass along them to the superior brachium and quadrigeminal colliculus, and thence to the oculo-motor nerves. By Campbell these corticifugal fibres are thought to be the axones of Meynert giant cells in the occipital cortex.

If the visual region of the occipital cortex is removed on one side the lateral geniculate body of the same side undergoes atrophy, particularly in the cells. The pulvinar does not seem much altered. If the eyes are extirpated the tract undergoes atrophy in the grey matter between the cells, but the cells themselves are not affected. Lesions of the retina cause degeneration in the intercellular grey matter of the geniculate body, which is mainly composed of ramifications of the retinal fibres. The visual path has its anterior neurons running from the retinal elements to arborise in the cells of the external geniculate bodies, and from them the posterior neurons run on to nerve cells in the occipital cortex in and around the calcarine fissure. It is therefore not the retinal fibres, but the fibres of the external geniculate body that are projected upon the occipital lobe.

THE VISUAL CORTEX.

The calcarine fissure, which in man commences a short distance behind and below the splenium, was first well described by Cunningham. It consists of an anterior part or "stem," the "true calcarine fissure," which protrudes into the posterior horn of the lateral ventricle as the "calcar avis." The fissure as it passes backwards appears to bifurcate into the posterior or "retrocalcarine" and the occipito-parietal fissures; really, however, the latter is separated by the annectant cuneal gyrus, and the former by the deep anterior annectant cuneo-lingual gyrus. posterior calcarine itself also seems to bifurcate behind into an upper and lower vertical fissure, the "fissura extrema" or "terminalis," but it is really separated from them by the posterior annectant cuneo-lingual gyrus.

If sections are made through the cortex of the occipital lobe there is seen running across the calcarine fissures, and parallel to the grey matter which covers the surface of the lobe, a well-marked easily seen white line. The line is due to the presence of a special plexus of nerve fibre running in the cortex and traceable for a considerable distance within its deeper surface. This is known as the line of Gennari. Elliot Smith has most carefully described its disthe area over which it passes can be easily identified. It runs in the grey substance of the occipital lobe, following the sulci and convolutions, and by means of its presence the area concerned in vision can be accurately mapped out. Though it appears as a line in sections of the brain, it is really, of course, a layer of special tissue, which forms part of the thickness of the cerebral grey matter, and lies half-way between the surface and the underlying white matter of the

At the retrocalcarine fissure it is seen to line the hollow and both sides of the sulcus, and it reaches upward on the cuneal gyrus and downward on the lingual gyrus, as far as the two small sulci, which run nearly parallel to the retro-calcarine—namely, the "sulcus limitans superior" above, and the "sulcus limitans inferior" below; these meet together in the pole of the occipital lobe, and bound the area striata at that part. It is only prolonged a little to the posterior lateral surface of the hemisphere around the tip of the occipital lobe. Here it is strictly bounded by the suicus lunatus, which is itself free of the stricte tissue. The area of cortex which it involves is called by Elliot Smith the "area striata." This is the "visuo-sensory area" of Bolton, Campbell, and others, the "primordial visual area" of Flesching.

The structures concerned have been most carefully examined by Campbell, who finds that the special lamination included in the line of Gennari shows its largest dimensions at the forked termination of the posterior calcarine fissure which it surrounds, just reaching the pole of the occipital lobe, and as the length of one or other limb of the fork may be greater or less the extent of the striate tissue will also increase or diminish, not only in length but in breadth and substance. It spreads forward, bounding the retrocalcarine above and below, involving the cuneo-lingual gyri at either end of that fissure. It spreads definitely below, occupying the lingual gyrus, and it passes forward half-way along the lower border of the true calcarine fissure. Above it is well marked at the back of the cuneus, but anteriorly at the angle where the occipito-parietal sulcus leaves the calcarine it has gradually ceased to exist, and it is not found in the cuneal portion of the annectant gyrus at that part. The occipitoparietal sulcus is quite free of it, so is the gyrus fornicatus. There is no striate tissue along the upper margin of the calcarine proper. Both Campbell and Elliot Smith insist that it is only found along the lower margin. On the other hand, the retrocalcarine is extensively and completely surrounded by the stria Gennari both in man and the anthropoid apes. Elliot Smith proposes to call it the 'medial intrastriate sulcus."

On microscopic examination special arrangement is found in the visuo-sensory area. The line of Gennari is seen to be composed of a dense network of fibres of fine calibre mingled with some larger fibres, which run horizontally and There is marked consolidation in the line of Gennari, below it a pale-stained area with the termination of the optic fibres. The external layers of large pyramids are replaced by a layer of curious large triangular or quadrilateral-shaped stellate cells, practically distinctive of this region, and found chiefly along the calcarine fissure; they have strong processes of considerable length which pass horizontally, some of them run obliquely in the fibre plexus. In the deeper parts of the cortex the internal layer of large pyramids is modified by the presence of a layer of pyramidal cells, the solitary cells of Meynert, another important distinctive feature of the calcarine cortex.

Outside the visuo-sensory area is a border about 2 centimetres in width, the visuo-psychic area. It covers the cuneus above, but not the occipito-parietal fissure nor the upper edge of the true calcarine, but it occupies its lower border almost in its whole length. It passes over the back part of the collateral fissure and round the occipital lobe rejoining the cuneus above. The gyrus fornicatus does not seem to be a part of the substratum of vision.

The visuo-psychic region shows peculiarities in the histological structure; fine fibres are numerous, but they are not collected together as in the line of Gennari, nor is there the pallid zone underlying it. The external layer of large pyramids reappears and none of the peculiar stellate cellsremain, but, on the other hand, some of the pyramids are much enlarged into giant cells, with several roots below and one very long-drawn-out process above. These cells are the tributions: it stops abruptly and can be readily traced, and | most characteristic elements of the layer. The large cells

of Meynert are not found. The very great number both of cells and of fine fibres in this area suggests a high degree of functional activity, and through it are probably transferred the impulses, received from the parts around the calcarine, to further districts in the brain where the higher attributes of sight are located.

Dr. F. W. Mott, in his interesting Bowman lecture on the Progressive Development of the Visual Cortex, shows how the width and complication in structure of the cortex gradually increase as we ascend the animal series and how the special cells become more necessary. Thus in the hedgehog, in addition to polymorph and small stellate cells, are found occasional large pyramids. In the rabbit there is a line of Gennari, large stellate cells, and branching pyramids. Ungulates have a well-marked line of Gennari and numerous solitary cells of Meynert. In the cat there are numerous cells of Meynert, but the most striking feature is the depth of the pyramidal layer. These pyramids are also well developed in the cervical region of the cord, and Mott suggests they lie along the volitional path of the executive faculty which is exercised through the fore limb and with the help of binocular vision. The depth of the pyramidal layer increases after birth. Dr. Mott considers that the progressive development of the pyramidal layer in the visual cortex of mammals is associated with an increase in the perfection of binocular vision.

Flesching has shown by preparations of the feetal brain how the development of different parts of the visual areas takes place. He considers that as there are many degrees of functions so the nerve fibres develop as they are required: the sensory found at birth, the motor found soon after birth, and the associated which gradually develop. Thus at birth only a portion of the fibres in the optic-thalamic radiations have acquired their myelin investment. All those that have done so come from the lateral geniculate bodies and they go direct to the calcarine fissure. Those fibres that come from the pulvinar appear to be medullated later in life and to pass outside the immediate limits of the calcarine area. Medullation of the fibres in the cortical areas occurs at different times. Thus an infant very soon sees light, but does not show that it sees an object held in front of it for some weeks, while it takes him as many months to turn his eyes to follow an object held at his side or to stretch out his hand to get it. It is obvious that the highly coordinated work that depends on sight is constantly needing the development of new cells and of association fibres throughout life, and they are far more easily acquired in early life.

The visuo-sensory area along the calcarine fissure is the primary station in each hemisphere for the reception of impressions coming from the retina through the geniculate bodies; around it is the visuo-psychic area to which these impressions are transferred; it occupies the rest of the surface of the occipital lobe, its functions being to elaborate and to interpret. If part of the visuo-psychic area is primarily diseased, there is likely to be a partial hemianopsia complicated by slight peculiarities of vision more or less indefinite, some difficulty in memory of words, some form of letter, word, or mind blindness. When the fibres that go to the temporal region are affected, there may be word deafness, or loss of power in the musical faculty, to recall names, or to read aloud. The psychic cells are associated with the psychoic motor, where the impressions or information gained by sight are transferred for purposes of thought, speech, or action, and these with the emissive motor by which speech and writing are affected. The centres for these latter acts lie adjoining those for the simple movement of the lips and hand.

The various parts of the visual cortex are connected by short association fibres almost infinite in their distributions. Adjoining the occipital lobe and continuous with its lateral portion is the angular gyrus which appears to be a higher visual centre of some importance, probably developed mainly on the left hemisphere. The angular gyrus might be readily associated with the primary visual areas by means of fibres running through the occipital lobe, or with the pulvinar or elsewhere by association fibres.

The central sulcus of each hemisphere separates the motor area (frontal) in front from the sensory area (parietal) behind. The intraparietal sulcus runs upward almost parallel behind the central (inferior and superior post-central); it then turns horizontally backwards parallel to the upper margin of the hemisphere and terminates in the occipital lobe behind. It separates the post-central region of common sensation, and

the superior parieto-occipital gyri from the supra-marginal and angular gyri; these two latter are probably the centre for the recognition of higher, more elaborate forms of sensation and of sight and hearing.

In cases of visual hallucination the angular gyrus is perhaps usually, but not always, affected. The supramarginal may be the seat of mischief or the posterior parietal lobule. A case of scar after injury over the region of the angular gyrus on the right side was associated with epileptiform attacks on the left side, preceded with bright red flashes of light and succeeded by visual hallucinations. Mr. Gould trephined with cure. In a case of Mackwen injury to the side of the head had produced melancholy and homicidal impulses; there was no damage to the outer part of the skull, excepting a slight depression behind the angular process of the frontal, which could not account for the symptoms; no motor phenomena were present. It was discovered that directly after the accident and for some time since the patient had suffered from psychical blindness. The skull was trephined over the angular gyrus, and a portion of the lateral table was found pressing upon the posterior portion of the supra-marginal convolution, a corner of it embedded in the brain. This was removed with relief to his mental condition.

Distant regions are connected with visual areas by long association fibres, some of which are arranged in well-defined bundles. The perpendicular fasciculus connects the defined bundles. superior occipital and parietal gyri above with the inferior occipital and fusiform below, and with the temporal. The superior longitudinal fasciculus joins the frontal lobe with the occipital, and, Mott believes, through the large pyramidal cells of the visuo-psychic area. The inferior longitudinal runs along the outer wall of the posterior and inferior horns of the lateral ventricle, and probably connects sight with hearing, though the fibres may be for projection rather than for association, and connecting the occipital cortex with the optic thalamus. Many fibres connect the neighbourhood of the calcarine with the angular or marginal gyri, and interference with these fibres might produce typical abnormalities The fasciculus occipito-frontalis runs below the corpus callosum external to the lateral ventricle, and connects the convex surface of the occipital lobe with many parts of the frontal. The splenium is the commissure of the occipital lobes, and connects one visual area with the opposite occipital cortex. The occipito-thalamic radiation contains two sets of fibres. The centripetal run towards the occipital cortex to produce vision, and impulses are transferred by the centrifugal from the cortex to the lower parts of the brain to assist the sight by causing movements of the

VISUAL REFLEXES.

The pupil reflex passes through the lower centres, corpora quadrigemina, and third nerve; it is quite unconscious and does not reach the cortex of the brain. But pupil movements are also controlled by impulses centrifugal from the visual cortex through the brachium superius and the quadrigemina.

Many of the simpler and most constant movements that occur in association with sight are automatic, practically reflex, such as involuntary movements starting from the occipital lobes, as in blinking of the eyes on looking towards a sudden light, or to moving objects. Wide movements of the head and limbs are constantly necessary, such as avoidance of obstacles, and become visual reflexes of varying complexity. For them associated fibres run from the visual cortex to the motor centres from which the movements emanate; some of these tracts are in such constant coöperation that the associated movements become a kind of compound reflex action gradually evolved by constant use. Eye movements intimately associated with the most complex mental activities are most of them involuntary and unconscious; consciousness is alone concerned with the result affected.

The visual centres are undoubtedly reached by other afferent impulses than through the eyet all and retina alone. Pupil action and accommodation, and muscle sense produced by movements of the eyes in any direction or in convergence, cause simple impulses towards the brain. Visual judgments also largely depend on impressions from the sense of touch, and as almost every movement of the body is guided by sight the associations around sight are very wide indeed.

When the sight is lost from defects in the eyeball or option nerve almost all other impulses, from hearing, touch, muscle

balance, &c., are effectual in stimulating a healthy visual cortex, and they become increased in influence to the help of faulty sight. But defect in the visual brain is a much more serious matter, and if the sensory area is damaged by disease some part of the psychic area is likely to be affected with it.

EVIDENCE FROM POST-MORTEM EXAMINATIONS.

We cannot overrate our obligations to Ferrier for his early experimental research work on the brain and for drawing attention to the importance of the angular gyrus and of the neighbourhood of the occipital lobe in visual processes, nor to Schäfer, Horsley, and others. Bolton examined in serial sections the occipital lobe in five cases of old-standing blindness and in one case of anophthalmos. In all he found changes in the cortical area throughout the line of Gennari, with marked atrophy of the fibres and of the cells, especially of the large stellate cells. The line was much diminished in thickness but not absent (perhaps from the presence of fibres running from the occipital lobe through the splenium to the opposite of the brain).

A very important paper published by Dr. H. M. Turnbull in Brain (1904) on "Bilateral Loss of Post Central Cortex" described with great detail a case of bilateral cystic degeneration of the occipital lobes and of the neighbouring cortical areas on both sides of the brain, and the consequent absence or deterioration of the optic radiations and optic tracts with the structures associated with them in the sense of sight. The patient died at 24 years of age from severe burns in the London Hospital, January, 1903, under Mr. Moullin. As a baby she was noticed not to follow anything with her eyes—she simply stared straight ahead with them. They were fine eyes and did not squint. She was taken to Moorfields and found to be quite blind. The notes then made were unfortunately not available after her death. She was very peculiar and of uncertain temper. Her powers of hearing, taste, and smell were very good. She could speak with a limited degree of intelligence. Her powers of locomotion and her common sensations were very imperfect. She never showed signs of seeing anything, never examined anything with her eyes, never watched objects moving about the room. After death the brain was removed and most carefully investigated. About the posterior third of each hemisphere was found to form a cyst with thinned walls. The cavity included the posterior horn of the lateral ventricle and part of the middle horn. The cortex involved was that of the occipital lobes (excepting a small portion of the lingual lobule), the cuneus and nearly all the precuneus, most of the parietal cortex, and the angular gyrus. The proper structure of the wide area of the visual cortex and its surroundings was completely destroyed. The posterior part of the corpus callosum was much reduced in size, and the splenium was represented by a mere cord.

(The splenium is the commissure for the occipital lobes, and sends into each a large mass of fibres known as the forceps major, while the tapetum spreads from it over the lateral ventricle. Déjerine had shown that fibres pass in the splenium from the posterior portion of the median surface of the hemispheres from the occipital pole, from the cuneus, the lingual and fusiform convolutions; and Ferrier also found that fibres pass from the lateral surfaces, the external occipital convolutions, and from the angular gyrus to the splenium.)

There was no trace of the fibres of the optic radiations and the retrolentiform portion of the internal capsule from which they pass was extremely atrophied or almost absent. The optic chiasma in front was small and flattened out by pressure from the distended dropsical third ventricle. The optic nerves and tracts were small. (The small middle root of the optic tract was present; it passes to the medial geniculate body, and by the brachium inferius to the inferior colliculus of the corpora quadrigemina and is concerned in hearing.) The lateral root of the optic tract was very small, and the lateral geniculate body through which most of the fibres pass was very much atrophied; no fibres could be traced into it from the retina nor from the brain. The other 20 per cent. fibres of the lateral root was much better defined; it passed upward to the pulvinar and to the superior quadrigeminal body. The pulvinar was only very slightly deficient behind; otherwise the optic thalamus seemed well developed, as were also the quadrigeminal bodies, though somewhat compressed. Though concerned in vision, these parts are not directly associated with the visual

area in conveying impulses for the primary sensation of sight.

A very large number of cases of varying types of hemianopsia have been investigated, but the deductions drawn
between the faulty area of vision involved and the precise
locality of the disease, found in the occipital lobe after
death, are not by any means conclusive or uniform. Many
forms of pathological mischief have caused the changes in the
brain tissues: hemorrhage, gumma, tubercle, softening from
embolism or thrombosis, abscess, tumour, &c. The secondary
area involved around the actual lesion is in many of them
very wide and irregular, and even when thrombosis or
embolism of the calcarine artery or its branches has taken
place the district affected is more or less wide in extent,
and changes are produced not only in parts of the visual
cortex but in the underlying fibres of the optic radiations
and in the neighbouring tissues.

A lesion involving the occipito-thalamic radiation anywhere between the passage of the optic fibres from the retrolenticular portion of the internal capsule or from the lateral geniculate body to the centres in the visual cortex would produce a hemianopsia, varying in degree and permanence according to the position of the fibres involved and the nature of the lesion. Several cases have been published where the mischief has been limited to some part of the optic radiation, without implication of the cortex. radiation fibres, without being the primary seat of lesion. may become affected from without, and a hemianopsia may result by their secondary implications where no part of the visual cortex or tracts is itself affected. But in cases of uncomplicated hemianopsia some primary damage on the mesial aspect of the occipital lobe in the neighbourhood of the calcarine fissure has usually taken place.

Henschen insists that the primary half-vision centre is along the lips and depth of the calcarine fissure, especially of its anterior two-thirds. He considers that the upper and lower quadrants in the visual field (lower and upper parts of the retina) are associated with the structures that occupy the ventral and dorsal areas respectively of the calcarine fissure. The dorsal part of the visual cortex, the cuneal lobe, and dorsal portions of the optic radiations are concerned with the lower quadrants of the field of vision, while the upper quadrants of the visual field are associated with the lingual and fusiform lobes and the ventral boundary of the calcarine fissures and the optic radiations associated with them. In a case of complete hemianopsia under his care there was found in the opposite occipital lobe softening produced by thrombosis. It was confined to the cortex along the calcarine fissure, lying deep in it and giving rise to slight secondary degeneration of the optic fibres beneath.

Wilbrand states that the lower lip of the calcarine corresponds with the upper quadrants of the visual fields. The following is Hun's case.

A man, aged 57 years, was suddenly seized with slight cerebral symptoms. The fields of vision showed a complete left lower quadrant bilateral hemianopsia, the upper left quadrant being also slightly narrowed at the periphery; the charts of vision did not alter for nearly two years. Then he died. There was found on the mesial surface of the occipital lobe a localised atrophy involving the lower third of the cuneus, bounded below by the calcarine fissure and in front by the parieto-occipital.

In other cases such definite division cannot be made out.

A thoroughly reliable case of quadrantic hemianopsia was published by Dr. Beevor and Dr. Collier.

A patient, aged 55 years, was under their observation for nearly two years during which his illness lasted. Careful perimetric observations were repeatedly taken, and a most thorough examination with exhaustive report was made of the brain structures after death. His only general symptoms were numbing of the left hand and arm, severe recurring occipital headache and faulty eyesight, and at long intervals two or three fits. The optic discs were pallid and there was some sclerosis of the retinal arteries. His central vision was 6/9 in either eye; he was completely blind in the upper left quadrant of both visual fields with some general narrowing of the fields. For two months or so before he died his health failed rapidly and his sight got worse. There was found occlusion of the right posterior calcarine artery, with destruction of the visual cortex involving the whole depth of the calcarine fissure, together

with the right lingual lobe and the fusiform lobe below it. The optic radiation was not involved in the necrosis. So far we should expect the defect that was actually found in the visual field. But there was in addition damage to the lower third of the cuneal gyrus and the adjoining retro-calcarine fissure; this latter area, if Henschen's view is correct, should have caused defect in the lower quadrants of the visual field, which in this case were only slightly implicated. Mott, on examining the sections, showed a patch of healthy striate cortex along the upper lip of the calcarine and in the adjoining surface of the cuneus, which he thought accounted for the retention of vision in the lower fields.

Again, by far the greater part of the disease lay in and around the lingual lobe, but the defective field area is not confined to the upper quadrants; it shows definite narrowing of the lower fields as well. Besides, it would seem possible that the upper part of the cortical lesion came later in the disease, after the patient was too ill for further perimetric testing, and when possibly the lower quadrant had become defective from the cuneal disease above.

The cortex lining the calcarine fissure was necrotic, and yet the hemianopsia was not complete. Can the calcarine then be looked upon as the primary half-vision centre? For there was not complete hemianopsia in this case. We must admit the importance of considering not only the amount of mischief done in the cortex, but also the extent to which the radiation fibres are affected. For, as the authors suggest, there may be considerable overlapping in the cortical supply of the various parts of the retina and considerable power of compensation for local damage in the cortex limiting the lesion.

It seems to me probable that the centre for complete hemianopsia lies more anteriorly in the optic radiation near the calcarine proper rather than in the post-calcarine, which was the sulcus here implicated, or else that the optic radiations must be involved when the hemianopsia is complete. And I suggest that the further forward towards the splenium the mischief is, the greater the number of fibres likely to be involved and the wider the hemianopsia, while the more posterior the lesion the more numerous the subdivisions of the artery, and the more localised the area of faulty blood-supply is likely to be and the smaller the defect in the field.

An important means for localising intracranial mischief is the use of the perimeter to ascertain the condition of the visual field and its defects. It is certain that hemianopsia may occur without being necessarily an early symptom of further brain trouble. I have seen a number of patients who with more or less defect in the visual fields have been able to do useful work apparently without discomfort, and who have remained without any other evidence of disease for many years. The common cause in localised cases is, I expect, embolism of some twig of the calcarine artery. The onset is usually sudden, the patient has slight brain disturbance for some days, and then recovers. The obstructed area undergoes atrophy and causes the patient no discomfort except his loss of localised visual area. But hemianopsia may be a part of a spreading lesion, the first symptoms of a thrombosis which will lead to a progressive softening; or of a commencing tumour, which causes pressure upon some part of the visual cortex or radiations, or upon the optic tract.

Trephining made safe by antiseptics may be necessary in primary injuries; for fracture, abscesses, hæmorrhage, and discharging cortical areas in epilepsy. Cysts may be relieved and old gummata removed. Cases of tumour will die if not interfered with, and though some may be malignant and too deep for removal, still others may be on the surface and more casy than might be expected, while, on the other hand, necropsy may show that operation would have saved the patient.

For the study of the blood-supply to the brain structures concerned in vision I would refer to the splendid work of Dr.

Beevor.

Bibliography.—1. Beevor: Philosophical Transactions of the Royal Society, London, B., 362. 2. Beevor and Collier: Brain, Part 2, 1904. 3. Bolton: Philosophical Transactions, vol. xciii., 1900. 4. Campbell: Localisation of Cerebral Function. 5. Wilfred Harris: Brain, 1904. 6. Henschen: Centre Cortical de la Vision. 7. Mickle: Journal of Medical Science, 1881, 1882. 8. Mott: Transactions of the Ophthalmological Society, vol. xxv. 9. Elliot Smith: Catalogue, Royal College of Surgeons, Physiology. 10. Idem: Anatomischer Anzeiger, vol. xxiv., No. 16-17. 11. Swanzy: Transactions of the Ophthalmological Society, vol. ix. 12. Sequin: Journal of Nervous and Mental Diseases, 1866. 13. Lindsay Johnson: Proceedings of the Zoological Society, 1897. 14. Turnbull: Brain, 1904. 15. Parsons: Arris and Gale Lectures, 1904.

The Hughlings Jackson Becture

SPECIAL SENSE DISCHARGES FROM ORGANIC DISEASE.

Delivered before the Neurological Section of the Royal Society of Medicine on Nov. 25th, 1909,

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MR. PRESIDENT AND GENTLEMEN,—To deliver the Hughlings Jackson lecture is a task equally pleasant and difficult. Its pleasure and its difficulty arise from the same source. The object of the lecture is to honour the distinguished worker who is still with us by an attempt to promote the researches which have thrown such bright lustre on his name, and, if it be possible, to carry a step further the results he has reached, or at least to provide the means that may enable others to achieve this result. But to make such an effort is to realise its difficulty. Knowledge grows most slowly, for the essential facts are rare, and those already gathered have been made to yield their lessons by the Master himself, beyond whom we cannot hope to go. I fear, therefore, my attempt will involve disappointment to you and to myself.

The subject to which I propose to limit my consideration is the symptoms of epilepsy which are related to the so-called special senses, those of smell, vision, hearing, taste, and perhaps touch; and especially the indications of such epileptic symptoms as are occasionally presented by organic disease. Examples of such epileptic discharges from organic disease, demonstrable in nature and seat, are not common. It is important to lose no opportunity of examining carefully such as are met with.

OLFACTORY.

Anatomically, the special senses begin with that of smell, and the olfactory discharges were the first to receive special study from Dr. Hughlings Jackson, whose analytical observation has exerted a fascinating and inspiring influence on workers in every country. He published a paper calling attention to their complex and instructive peculiarities as long ago as 1866, a paper that was referred to and quoted by Sander of Berlin in an account of a fatal case published in 1874, when he also considered the few cases he had been able to find recorded by previous writers. Dr. Hughlings Jackson returned to the subject again and again in penetrating discussions of individual cases, especially in 1899, in a paper in which Dr. Purves Stewart described six fatal cases that had been published by Hughlings Jackson and Beevor, Hughlings Jackson and Colman, Anderson, Nettleship, Sander, and McLane Hamilton.

Another case was published by C. K. Mills in 1908,² who also added two others described by Linde³ and by Southard,⁴ raising the number to nine. Two cases had been published by Dr. T. Buzzard in 1906³; although in one of these there was no post mortem, the nature and seat of the disease were ascertained by surgery, and it is therefore deserving of inclusion. I have two other fatal cases to describe to you to-night, and I find that Sander, in addition to his own case, quoted two others, one by Lockemann³ in 1861, and another by Westphal⁷ in 1863.

The case described by Dr. Buzzard was a girl, aged 21 years, who was found to have a tumour in and about the right hippocampal gyrus, which had destroyed the uncus and had filled the descending cornu of the lateral ventricle. It had

¹ Brain, 1899, vol. xxii., p. 534.
2 Mills: Journal of the American Medical Association, Sept. 12th, 1908.
3 Linds: Monatschrift für Psychiatrie und Neurologie, Band vii., No. 1, p. 44.
4 Southard: American Journal of Insanity, April, 1908.
5 Buzzard: The LANCET, June 30th, 1906, p. 1807.
6 Lockemann: Zeitschrift für Rationale Medicin, Band xii., 1861,

Buzzard: THE LANCET, June 30th, 1906, p. 1807.
 Lockemann: Zeitschrift für Rationale Medicin, Band xii., 1861, p. 340.
 Westphal: Allgemeine Zeitschrift für Psychologie, Band xx., 1863, acc.

given rise to a prolonged sensation of a bad taste in the mouth and of a sound of bells in the head, but neither associated with her epileptic attacks. Dr. Buzzard also mentioned that the case, in which the lesion was revealed by surgery, had at first a frequent subjective sound like the loud clang of a piano, accompanied, after a time, by a very unpleasant smell and a keen sense of reminiscence. A glioma was found infiltrating the base of the right temporal lobe, but the operation was not long survived, and no post-mortem examination was allowed.

Lockemann's case was that of a woman, aged 55 years, who died from a malignant tumour of the brain, which extended from the left frontal lobe to the olfactory region, and caused for a time peculiar olfactory warnings described as variable and not unpleasant. That of Westphal was a syphilitic nodule in the pia mater beneath the frontal lobe which had destroyed the right olfactory lobule and caused a very offensive smell as the warning of epileptic fits.

The case which I have specially to describe is that of a man, aged 37 years, who was admitted to the National Hospital for the Paralysed and Epileptic early in 1905, having suffered for three and a half years from frequent slight attacks, of which several occurred daily, often four or five. In these there was first a smell and taste of gas; he could not compare it to any known odour, but it seemed to be something like sulphuretted hydrogen. It caused salivation and eructation from the stomach. The flow of saliva was so abundant that it would run from the mouth and often filled a tea-cup. After the sense of smell he had a slight sense of turning, and if he walked he had a tendency to walk fast, almost to run. Each attack lasted from one to three minutes. Consciousness was not lost. He occasionally had a more prolonged sense of the same odour. He was a well-developed man, and his mental state presented no abnormality. His smell was defective, especially on the right side, but did not seem to be list. There was almost complete left hemianopia. The right half field was restricted in the upper periphery, especially in the right eye. The left optic disc presented papillitis about four disc-breadths in width, but with only slight swelling (2 diopters). The right appeared normal. The only morbid appearance it presented was a little capillary redness in the upper part. Hearing was good on each side. The tongue and throat presented no symptoms. The strength of the left hand seemed a little diminished. Both knee-jerks were brisk, but there was no foot clonus. The left abdominal reflex was slighter than the right. He had only occasional headache, not severe. There was marked tenderness to firm pressure on the right side at the temporal and lower part of the parietal region. No sound could be heard on auscultation

In february he was operated on by Sir Victor Horsley. The right parietal and temporal regions were exposed. The brain was bulging, but no tumour could be seen on the surface or on raising the temporal lobe, but this was firmly adherent to the dura mater near the tip. An oblique incision into the substance of the lobe revealed an infiltrating growth near the anterior extremity, which could only be partially removed in pieces. Hæmorrhage occurred from many vessels, which had to be tied. The operation was borne badly and the patient died a few hours after its completion. At the necropsy it was impossible to discern the precise size and position of the growth in the temporal lobe. It was found to have compressed the chiasma and right optic tract; it was continuous with a mass of similar growth in the white substance of the frontal lobe. The growth was a glioma.

I shall have presently to describe other cases in which the fits were preceded by an auditory warning at first, and subsequently by an olfactory aura, consequent on the descent of a growth towards the apex of the temporal lobe.

Twelve of the cases were so extensive as to have no precise localising value. Of these, 11 were of tumours and 1 of meningitis; another, that of Westphal, had apparently produced the symptom by destruction of the olfactory bulb and tract. There was extensive meningitis in the case of Southard, but there was also an aneurysm, which had destroyed the uncus. In only one case was there an isolated lesion of this structure, a small spot of softening within the uncus, and in this case, described by Hughlings Jackson and Colman, there were no sensations of smell, only the movement of the mouth and jaws which is so suggestive of a sensation of taste. It was present also in the case of

Southard, in which the uncus was destroyed by an aneurysm. Although the symptom is probably a distant secondary effect, and is present in many cases in which there is no evidence of disease in this region, we are almost compelled to regard it as evidence of a gustatory sensation. We must remember, however, that Dr. Hughlings Jackson, in proposing the name "uncinate epilepsy" for these attacks with an olfactory or gustatory aura, expressly disclaimed suggesting more than the general region, traversed by the olfactory roots, as the seat of disease. Where these fibres end, in the various structures they penetrate, remains to be discovered. A putrid odour was occasionally described. Regarding this, cantion is necessary when it does not attend other distinct epileptic symptoms. It may be an isolated manifestation of suppuration in one of the nasal sinuses.

Several features frequently attend these cases of epileptic attacks with an aura of smell, but little can be added to the instructive discussion they have received from Dr. Hughlings Jackson. I may mention that he has called attention to the observations of W. G. Spencer's on the arrest of respiration at the end of inspiration, produced by stimulation of the anterior perforated spot, over which passes the outer root of the olfactory tract and into which some of its fibres pass, as explaining the sense of dyspnea occasionally associated with an olfactory aura. We are reminded of it by some cases of apparently idiopathic epilepsy. For instance, in one a sense of dyspnea seemed to have a nasal origin. The first thing was a stifling sensation in the nose, as if the patient could hardly breathe, followed by a sudden sense of a peculiar momentary bad smell.

The psychical condition which often attends the slighter attacks in cases in which there is an olfactory sensation has been termed the "dreamy" state. There seems to be only a partial impairment of consciousness, or the loss of this occurs so slowly that a distinct recollection is retained of the transient sensations which precede it. The term "dreamy" is often spontaneously applied to the memory of other slight attacks, especially to those in which some definite sensations are experienced. So also with the impression of recurrence, or of precurrence, it might be more accurately termed: the clear conviction that the same feeling has been experienced before. This is a phenomenon of normal brain states, or presumably normal, as Oliver Wendell Holmeshas so well impressed upon us in his "Autocrat of the Breakfast Table" in connexion with Day and Martin's blacking. Much more strange, and at present beyond our power of conceiving an explanation, is the sense of dread, intense and causeless, which has been marked in several

In ordinary epilepsy we sometimes meet with a slighter sensation of smell associated with other deliberate sensory perceptions. In one case the sound of bells, with red and blue lights, was followed by a distinct putrid odour. Another patient always had a peculiarly complex aura, a sensation in the left hypochondriac region seemed to ascend the left side of the thorax in a jerky motion, and, at the clavicle, it became a sound and could be heard as well as felt; when it reached the level of the ear it was like the hissing of a railway engine. Then he suddenly saw an old woman in a brown dress, who offered him something that had the smell of Tonquin beans. The woman then disappeared and two round lights appeared before him, which got nearer and nearer with a jerky motion, and he lost consciousness. warning was always the same, in every detail. Such cases are, doubtless, due to a secondary involvement of an olfactory centre in a discharge beginning elsewhere, and spreading widely but slowly.

AUDITORY.

Organic disease sometimes causes attacks in which the warning is a subjective sound. As might be expected, the cause is generally a tumour of the upper part of the temporal lobe, often subcortical, beneath the first temporal, in which experiment indicates the situation of the auditory centre. But it will be remembered that extirpation of this has never been followed by permanent loss of hearing, neither has this result usually followed enduring destruction of this region by disease in man.

The effect of a tumour in the region was shown by the caserecorded by Dr. Buzzard, which I have already mentioned.

⁸ Proceedings of the Royal Society, 1904, p. 61.

It is noteworthy that the discharge of the centre is often due to a growth in the white fibres beneath. It was so in a remarkable case which came under my notice many years ago at the National Hospital, where the patient was under the care of Dr. Hughlings Jackson, who, with characteristic kindress, has placed the notes at my disposal this evening. The patient was a man, aged 39 years, admitted in November, 1875. He was a painter, but without sign of lead poisoning. There was no history of syphilis. He was left-handed, but had been taught to write with the right hand. For two years he had suffered from fits, about once a week. He had also suffered much from occipital pain, increased by a cough; there was no paralysis. For the first six months there was no warning, subsequently there was an auditory aura. The slighter attacks began by a humming sound in the left ear; those of greater severity by a loud sound like a peal of bells, also to the left. The duration of the sound was about three minutes, and it ceased before the fit began, and just before the sound ended the patient felt a burning sensation in the left external auditory meatus and concha, like the contact of hot coal. The burning sensation then passed down the left side of the neck, and round the back of the neck to the right ear, and also across the forehead. The burning then passed down the thorax front and back, to the leg and foot, where it became a numbness. After the leg, the sensation passed down the arm to the hand. From the onset there was intense frontal pain. The head shook rapidly from side to side, and the eyelids were quivering; sparks also appeared before the eyes, always yellow. At the onset of the burning heat the face became drawn towards the left by tonic spasm, and afterwards there was trembling of the limbs of both sides. In other attacks of the same character the arm was affected by the sensation before the leg, and his description was that the arm seemed as if lying in a bed of stinging nettles. The attacks were always followed by intense headache. When admitted, the optic discs were normal, but in three months optic reuritis slowly developed. Soon afterwards left hemianopia came on, the loss almost reaching to the medial line. The fits he bad in the hospital were less frequent and generally slight. Each was followed by transient weakness of the left side, the only paralytic symptom. His headache improved. After six months he went out and returned at the end of October, 1876. The fits had continued, many had occurred without warning; but those which he had after readmission presented the same aura, the sound of a peal of bells, now followed by pain at the back of the left hand, which passed up the arm to a little above the elbow, and was then felt in the left side of the face. Tingling followed in the left lower leg, and passed up the thigh; then he fell unconscious. The arm was the seat of constant tremor, which was present also in the leg when he was sitting, but ceased when he stood. It began suddenly in June, in a violent form, soon after rising. In the arm it was coarser than in paralysis agitans, and involved all the joints, but was greater in the wrist and fingers than in the elbow or shoulder. A movement stilled it for a time, but it soon returned. The left arm had become distinctly weak; the grasp was 35 with the right hand, and only 10 with the left; the leg seemed strong. The optic neuritis was subsiding, and vision was considerably impaired.

He did not then stay long in the hospital, and the notes are brief, but he was again admitted in October, 1878. Continuous occipital headache still troubled him. Left hemiplegia had gradually developed and had attained a considerable degree. The neuritis had led to consecutive atrophy with still more impairment of sight, greater in the right eye. The left hemianopia persisted. Hearing was noted to be good on each side; smell also was good and equal; taste seemed diminished. His fits had become less frequent and many appeared to have been bilateral. He still had frequent severe occipital headache. occurred after he returned to the hospital; the description of them in the notes never now mentioned an auditory aura. In those that were severe the convulsion was bilateral, but more severe in the left side.

In the beginning of 1879 sight had almost completely failed. Movement of the eyes to the left was attended by nystagmus. Hearing was impaired on the left side, the watch not being heard at all, while it was clearly heard on the right. The left arm was quite powerless; the leg could

still be moved, although feebly, but it was not rigid. The right leg could be moved freely. Sensation was not much impaired in the left limbs. The occipital headache was slighter, but it afterwards again became severe. During the next few months he had an occasional slight fit, and then continuous delirium set in. His wife was dead, but he asserted that he could see her practising prostitution with other patients in the ward. He was almost blind, but when assured that it was not so, his reply was, "Do you think I cannot believe my own eyes?" In August there was alternate convulsion in the right and left side of the face, and then a severe convulsion on the right side. In September the delirium ceased. Smell was noted to be still deficient, but "better on the left side than on the right." Occasionally, however, he had an unpleasant subjective smell "like a strong liniment, almost taking his breath away." On the right side hearing was still good, and on the left the watch could be just detected in contact; there was often subjective ringing. Taste was slow; occasionally a subjective bitter taste was experienced. Sight was practically gone; occasionally he still had subjective sparks to the left. The chest moved well on the right side, very little on the left. He spoke at first in an audible tone, but his voice soon died down to a whisper. The left arm was powerless, with no rigidity, but he complained of a dragging pain in it, and if moved away from his side he could not tell where it was. The right arm was moved freely, but was too feeble to act on a dynamometer. The left leg was powerless but without rigidity, and passive movement caused much pain in it. The right could be well moved. The right knee-jerk was present, the left very slight, and the attempt to obtain it caused pain. There was no foot clonus. He continued in this condition, having a few fits, generally slight. In one, the convenience was in the right arm and slightly in both legs. On Dec. 7th he died suddenly.

Post-mortem examination .- A tumour was found in the right hemisphere, but no morbid process in the left, or in the pons. The growth lay between the optic thalamus and corpus striatum on the inner side, and the convolutions of the temporal lobe on the outer. It was almost confined to the white substance, ceasing about a twelfth of an inch from the grey substance of the temporal convolutions and of the island of Reil, but it had invaded the outer segment of the lenticular nucleus behind the middle of the corpus striatum, and compressed the other segments. It had also invaded the posterior extremity of the optic thalamus for one-eighth of an inch only, and the thalamic substance was softened in an area of a quarter of an inch, just behind the anterior extremity. A tongue of growth appeared at the base between the crus and the uncinate gyrus, which was displaced outwards but not invaded superficially. It had compressed but not invaded the optic tract almost up to the commissure. Behind, in front of the corpora quadrigemina, the growth had invaded the crus in an area the size of a split pea, and thence had passed into the anterior, and slightly into the posterior, right quadrigeminal bodies, but had not crossed the middle The anterior limit of the growth was the neighbourhood of the grey matter of the convolutions of the island of Reil. The highest level it reached was a little above the floor of the lateral ventricle outside it. It had filled the descending cornu and extended beneath the anterior half of the posterior cornu, where it ceased by a rounded end, which was separated by a thin layer of softening from the cerebral substance. Nowhere else was there this separation. This growth was, for the most part, similar to the appearance and consistence of the grey matter of the cortex. An exception was presented by the region between the posterior part of the optic thalamus and the temporal cortex; here it was much firmer, and almost cartilaginous in consistence, yellowish in tint, and it contained several small irregular cavities. It was evidently the oldest part of the growth. The structure of the tumour presented the aspect of a gliosarcoma. It was composed of small oval cells, with a few fibres.

The features of this case are of great interest. earlier fits must have been due to discharges in the right hemisphere, beginning with the auditory centre, as the result of the growth in the white fibres beneath it. Although the cortical centre would be isolated, the discharge would affect consciousness as a sound, and extending to the motor region, which was not isolated, would cause convulsion on

the left side. But before the convulsion the discharge seems to have spread to the centre for common sensibility in the ear, the external auditory meatus and concha, and thence to that for the neck and the trunk, and the left limbs. The discharge in the centre for common sensation in a special sense organ, as well as the special sense itself, is rare, but is occasionally met with in epilepsy. I have not otherwise met with it as a consequence of organic disease. It is, perhaps, intelligible in relation to the auditory centre, because the vibrations of touch stand in so close a relation to those of sound. Lastly, a feature which is difficult to explain is the final convulsions on the right side, for which no explanation could be found in any lesion in the left hemisphere. We must consider that they were produced by the tumour in the right hemisphere acting on the left cortex through the fibres of the corpus callosum.

Dr. Colman, in a very instructive paper on hallucinations produced by organic disease, has published an account of a case of a tumour of the lower part of the central convolutions and the adjacent first temporal on the left side, in which there was the sound of bells in the right ear and afterwards a pleasing hallucination that a musical box was constantly playing. Dr. Colman has also referred to the case of a Jewess, of Odessa, who was subjected by her husband to blows on the head, which amounted to a rough physiological experiment, the results of which were described by Thomaschereski and Stamonowitsch in 1899.10 Congestion of the cranial bone, thickening of the dura mater and pia mater, and inflammatory tissue beneath the latter, with changes in the cortex, were found over part of the right central convolution, the posterior half of the first temporal, the supra-marginal and the angular gyrus. She suffered from convulsions, chiefly left-sided, and persistent auditory sensation on the left side, as well as left-sided visual hallucinations.

Last year, an Italian widow, aged 39 years, was under my care at the hospital with symptoms of a tumour of the temporal lobe, double optic neuritis, headache, and convulsions, some preceded by the sound of a bell ringing on the left, by a very offensive smell, and the vision of a strange woman. Her case was especially fixed in our memory by the fact that she was quite willing that her head should be opened, but she had a profund objection, at first insuperable, to the removal of her hair; she consented only on the assurance that it need only be taken off on one side, and that it would surely grow again. Sir Victor Horsley operated in July. A round encapsuled tumour, subcortical, was found in the temporal lobe; it reached down almost to the uncus. It was shelled out, through an incision, with as little injury to the brain as possible. She had afterwards slight left hemiplegia and diminution of sensation, but she left after two months, rapidly becoming well. Her only subsequent fits were on the day of the operation, and in these the previous aura, the offensive smell, and vision of a strange woman, occurred after the cessation of ten minutes' spasm of the left arm, not before the motor convulsion. These warnings had occurred only for a year and a half, when the fits had been more frequent, but the first fit was when aged 14-a month after her marriage-and they had occurred two or three times a year ever since, with tongue-biting and micturition, quite similar to those of the last year. No family tendency could be heard of. When aged 19 she had a small tumour removed from the breast. The cerebral tumour was thought to be a glio-sarcoma; its structure suggested a long duration, and it may well have been present at the time of the first fit and have caused the convulsions, which were only associated with the auditory and olfactory warnings after it had attained a considerable size.

The reverse is the case with a woman who has just undergone the first stage of operation (on Tuesday last). Her age is 35 years. Fits have occurred for seven years, and were associated, long ago, with a smell of rotten fish and also the sound of a voice, but these have been absent now for several years. Their cause may be learned next week.11

VISUAL.

Discharges in the visual centre seldom result from organic disease; the half-vision centre in the occipital lobe is still the only one generally recognised. Many years ago I

9 Brit. Med. Jour., 1894, p. 1016.

10 Neurologisches Centralblatt, 1889, p. 22.

11 It proved to be a very large cyst in the temporal lobe, connected with the lateral ventricle.

suggested that the symptoms of disease give weight to the experimental conclusions of Ferrier, which indicated that the region of the angular convolution between the parietal and occipital lobes has a visual function. The facts suggest, I think, that this region is connected with both half-vision centres in a complex way, so as to represent the visual function of both eyes, but of the opposite eye to a greater extent than of the eye of the same side. Partial disease of this centre seems to lower its function as a whole. In the hemianæsthesia of hysteria this centre seems to be put out of action, and the effect on vision is well known. Such an hysterical condition is commonly regarded as not worthy of consideration, but functional states are the only evidence we can obtain of some arrangements in the central nervous system; a similar condition of vision may result from an organic lesion.

Some of the preliminary spectra of migraine can be best understood on the assumption that they depend on a slow discharge in this higher visual centre, on the side in which the subsequent headache is felt, especially those that have the form of what is termed the "angled fortification spectrum." The inhibition which accompanies the spectra seems sometimes to be seated in this centre, sometimes in both (when there is a central loss), sometimes in the related half-vision centre. But it is remarkable how very seldom inhibition of the latter forms part of the warning of idiopathic

epilepsy.

I must not allow myself to be led into a discussion of functional affections, but I have to describe some cases of organic disease involving the angular gyrus and causing visual symptoms, cases which seem to afford definite support to the opinion I have put forward. The first case is that of a man, aged 45 years, who is left-handed, and thinks he became so, except for writing, in consequence of an accident to the right hand at the age of about 10 years. He has served in the navy for 20 years, and during that time he had many blows on the head. He denied syphilis, but admitted many risks. Some time in 1902 he was struck on the head by a heavy piece of coal, and in November of that year-how long after the blow he does not know-he had a severe fit, which compelled him to stay in bed five days. He remembered during this time seeing a bright, white light on his left. Subsequently he had slight attacks in which his head turned to the left and there was brief loss of consciousness. In March, 1904, he had three severe fits in one day, with convulsion on the left side and coloured lights to the left. Afterwards slighter fits occurred every few days, until his admission into the hospital in May, and afterwards.

He was a man of considerable intelligence. His smell, taste, sight, and hearing were normal, and so were the optic discs and ocular movements. The left arm was slightly weak; the grasp 75 compared with 90 on the right side, although in general left-handed. The left knee-jerk was the more active, and the plantar reflex was extensor, the right being flexor. The attacks occurred frequently, but varied much in degree. Very careful notes were taken by Dr. Gordon Holmes, who was then resident medical officer. the slightest, the eyes became fixed without deviation. The left side of the face was the seat of slight tonic spasm, and the head turned slowly to the left; consciousness seemed dull for about a minute. In others, in addition, the left arm became rigid, the elbow a little flexed without movement of the wrist or fingers. Smacking movements of the lips terminated each attack, but no sensation of smell could be ascertained, although sometimes he spoke of an unpleasant bitter taste in the mouth.

Many attacks, especially those that were more severe, were heralded by the appearance of several small round objects, seven or ten, just to the left of the fixing point and above it. They were brightly coloured, red on the outside; within this was a zone of blue, the centre being white. They were always the same, and they moved to the left or returned in a series of jerky movements, for five or seven minutes, often longer, after being first seen. During this time his eyes were constantly being jerked towards the left. Almost immediately after the appearance of the balls, dimness developed in the left half of the field, which was slight at first, but rapidly increased in degree until it amounted to complete hemianopia, extending to the middle line, except in a small area round the fixing point. It remained complete until about five minutes after the coloured balls disappeared, when it slowly lessened. At first, soon after the disappearance

of the balls, round markings of the size of the balls could be dimly seen at the place these had occupied. The passing away of the hemianopia was slow; a little dimness still remained half an hour afterwards.

In some attacks there was initial jerking of the eyes to the extreme left, and of the head, by clonic spasm. After a few seconds the spasm ceased, but presently came on again, and these recurrences went on for 20 minutes, each being attended by the noise in the mouth as if the patient were chewing; the arm and leg were rigid, and the arm was the seat of a fine tremor. In it there was complete loss of sensation, to touch and pain, up to 2 inches above the elbowjoint. The right limbs were normal. During this time the patient saw the coloured balls to the left for about ten minutes. When they disappeared the eyes and head could be moved to the right. The tremor of the arm ceased, but was replaced by irregular motion, comparable to athetosis. In a few minutes the loss of sensation had diminished, and extended only over the hand up to 2 inches above the wrist. Consciousness was unimpaired, but after an attack he frequently used wrong words in speaking which bore no resemblance to those he intended to say. Such an attack was sometimes followed by a recurrence, and in this he sometimes completely lost his sight for about a minute, when the half vision returned. Occasionally he felt only the loss of sensation in the arm, which was verified by examination, and there was extreme deviation of the eyes to the left, without the appearance of the coloured balls. The fields were many times separately taken with the perimeter and always found normal. The following note was made of his impairment in speech: "He always understands the nature of objects, and can easily express all his ideas and wants, speaking quite correctly. He understands everything said to him, even when spoken to quickly or in complicated sentences. He can read fairly well, but says it is much more difficult than it was before he became liable to fits; the effort tires him. He can see the words quite well, but has to read a sentence over and over again before he can understand the meaning. His right hand being good, he can write quite well and legibly, but complains of difficulty in expressing his thoughts in writing.

In July the patient was operated on by Sir Victor Horsley. The dura mater over the supramarginal gyrus was found on incision to be considerably thickened. It was removed. No tumour could be seen on the surface, but the pia mater was milky, opaque, and thickened, and the surface of the brain was firm and nodular, and hard to the touch. A horizontal incision was made just above the supramarginal convolution, and the substance of the brain was evidently sclerosed, greyish white, and opaque in aspect; but, though the incision was deep enough to open the lateral ventricle, no tumour was found. In the angular gyrus, posterior to the incision, a firmer patch of sclerosis was found. The opera-

tion was well borne.

One or two fits occurred each subsequent day on the left side, beginning in the face with clonic spasm. Consciousness was not lost. After a week they became less frequent. His mental state was very obtuse. During August there was steady improvement. The wound healed firmly and his fits became less frequent and ceased by the middle of the month. In the middle of September it was noted that his mental state was good and bright, but now and then he seemed to become dull and strange, as though he had a slight attack of petit mal. Hearing was good, and the only defect in sight was a slight peripheral restriction in the left lower edge of the field. The two knee-jerks were equal and the plantars both flexor. Spontaneous speech was quite good. He still complained of difficulty in reading and that sometimes he could not understand what he read, but he read short sentences quite well and showed that he understood them. In reading aloud he made many mistakes, especially with the longer words, and even short ones were often pronounced wrongly. Spontaneous writing was with many mistakes, which he recognised on reading it afterwards. Writing from dictation was very imperfect and long words he said he could not write, and when urged to try he was unable to produce anything like the correct word. He seemed, indeed, to produce some retained visual symbols rather than to translate the auditory symbol into one of appropriate visual character. By the middle of October all trace of

his wife, but still failed in writing from dictation. He was discharged on Oct. 18th, 1904, and has since been heard of as able to pursue his work in Ireland.

The visual phenomena present in the attacks of this patient seem best explained by a discharge of the assumed higher visual centre in the region of the right angular gyrus, a discharge which spread to the adjacent motor centres, or to it from them, and also produced temporary inhibition of the right half-vision centre, which very slowly passed away after the cessation of the discharge. They show how readily the half-vision centre undergoes inhibition, and that sometimes a secondary discharge of the centre in the other hemisphere may result. This has evidently occurred when a hæmorrhage in one occipital lobe has caused permanent hemianopia, but at first complete loss of sight results by the inhibition of the half-vision centre in the other hemisphere, which, in one case I have seen, continued for a week.

Another case has been in the hospital in which a traumatic superficial lesion of the angular gyrus gave rise to fits beginning with a visual aura. The patient was under the care of Dr. F. E. Batten, to whom I am greatly obliged for the opportunity of describing it to you. She is a girl, now aged 9 years, without neurotic heredity, who when aged 3‡ fell down 14 or 15 stairs and struck her head on the stone tiles of the floor below. There was no cut or bruise of the head, and the exact place of the blow was at the time uncertain. She seemed to have no loss of consciousness. Half an hour later she had a fit, with loss of consciousness and twitching of the right side, face, arm, and leg, and she vomited several times during the convulsion. When it ceased she several times during the convulsion. went to sleep, and after two hours woke up seemingly well, and no loss of power was noticed. Similar attacks recurred, and during the following year she had about 40. they ceased, and she was free for three years, until Christmas, 1907, when they returned, and have frequently recurred since in severe form until she came to the National Hospital on June 15th, 1909. In the hospital she had several attacks, differing in severity, but similar to those which had occurred previously. Each began with a bright light in the right of the visual field, and she always rubs the eye with the right hand, not, she says, on account of any discomfort in the eye, but to get rid of the light; the head is then turned slowly to the right and the eyes also deviate to the right. Consciousness is then lost. Tonic spasm then occurs in the right side, followed by clonic movement and twitching of the right side of the face and jerking of the eyes. The duration of the whole is two minutes. Consciousness then returns.

Immediately after the fit sight was distinctly lost in the right side of the field; it was soon regained, although for a time she said she saw objects more distinctly in the left than in the right half. Sensation in the hand was lessened to both touch and pain, and even after a quarter of an hour she complained that she could not feel the hand properly. right plantar reflex was extensor after the fit, the left flexor, and the abdominal reflex was much less on the right side than on the left. In one severe fit there was also some spasm in the left leg. The visual spectrum, which she calls the twinkles," always appears on the right, and she always rubs the right eye. They seem accompanied by deviation of the eyes to the right. She says the twinkles are "like stars. She once said to her father, "They are all colours, green and red and all, and there is a mist over my eye." She generally denies that the spectrum is coloured. Apart from the attacks, her physical condition seemed quite normal. Her ocular movements were perfect and so usually were all reflex actions, including the abdominal and plantar.

On July 6th she was trephined by Mr. Sargeant over the left parieto-occipital region. On exposing the brain the angular gyrus appeared paler and wider than the other convolutions, and in its posterior part was softened. On incision a dark grumous material escaped as well as some pale gelatinous substance. It seemed to be an old blood cyst. It occupied a small region around the termination of the parallel fissure. The wound healed well. The attacks, however, returned and she has been readmitted. They begin with the same visual

aura, but the convulsion is now general.

to produce anything like the correct word. He seemed, indeed, to produce some retained visual symbols rather than to translate the auditory symbol into one of appropriate visual character. By the middle of October all trace of hemiplegia had disappeared. He could write intelligently to

In this connexion I may refer to the case which I have already mentioned of the Odessa Jewess who had a persistent visual hallucination to the left, and the traumatic meningitis on the right side of the brain had involved the whole region of the angular gyrus.

These cases all speak with the same clear significance. It is different from the diminution of the remaining half-field in some cases of hemianopia, which was the evidence on which I relied in my Manual, as justification of the assumption in man of the higher visual function of the region of the angular gyrus. The higher the level of function the more complex its representation may be, and we may hesitate to reject entirely that of which the evidence may still seem imperfect.

LATENT CHOREA: A CONTRIBUTION TO THE STUDY OF SYDENHAM'S CHOREA.

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In the most important question of the prevention of rheumatic heart disease all are agreed as to the prime necessity of the recognition of the earliest manifestations of the rheumatic infection, and to this end the possible rheumatic nature of such conditions as tonsillitis, "growing pains," and cardiac dilatation has been emphasised by many authors whose views have rightly met with almost universal acceptance. It has seemed to me that for this purpose the study of chorea has been unduly neglected, and it is the object of this communication to emphasise what may be the earliest signs of this type of rheumatism and to draw one or two deductions from the considerations put forward.

At the outset I must offer some defence for the term "latent chorea" with which I have ventured to head this paper. To it there is the obvious objection that in any patient chorea either is present or is absent; nevertheless, it is a convenient name under which to describe cases I believe to be instances of chorea, but which would certainly not be recognised as such. I shall here therefore by "latent chorea" mean such a condition as I am attempting to show to be the earliest form of nervous rheumatism, and by "chorea" the well-known disease with (amongst other symptoms) its disorders of movement, characteristic and obvious. We may perhaps with advantage study first the common symptoms which are seen in a case of chorea, noticing especially how they might be expected to appear in their slightest and earliest forms. They may be divided into motor, mental, and atonic.

The motor symptoms consist of the perpetual, irregular, and purposeless movements of the limbs, which have been described as those of "exaggerated fidgetiness" (Sturges). In addition there may be noted incoordination, due in part, I think, to cerebellar involvement, which assists in rendering voluntary movements clumsy, and in bad cases quite futile. In the trunk there are seen squirming movements and often irregular and incoördinate action of the respiratory muscles, so that the breathing may be in turn thoracic, abdominal, or normal in type. Long-drawn sighs, such as are heard in nervous women, are very common. In the face the movements show themselves, as they must, in various emotional expressions, such as those of pleasure, dislike, fear, or surprise, which flit across the countenance. These may not in severe cases, as far as can be gathered, indicate any corresponding emotion on the part of the child, but often in the slighter forms of the disease they do express (or rather over-express) the mental attitude of the moment. In addition there are movements of the jaw, tongue, and lips which may cause the familiar choreic "clucking." Pupillary changes are not uncommon and are of some interest to us here. Dr. F. Langmead 1 has described hippus, inequality, and eccentricity of the pupils, and to these may be added irregularities in shape. As I have seen them these are usually found in the early stages of chorea. The displacement of the pupil, in my experience, is always upwards and inwards. Dr. Langmead pointed out that they were seen

in cases of chorea, but also, although less frequently, in patients suffering from acute rheumatism but not diagnosed as instances of chorea. It must, however, be acknowledged that in nervous but non-rheumatic children these pupillary abnormalities are sometimes found, and I cannot help regarding them as evidence of nervous instability rather than of any type of rheumatic infection.

Reducing these motor phenomena of chorea down to their slightest forms, such as we might surmise to be present at the very outset of the disease, we should expect to find general fidgetiness only slightly exaggerated, clumsiness in voluntary movements (especially in the finer ones of the fingers), and unnecessary and excessive emotional movements of the face. To these might be added, perhaps, abnormalities of the pupils and the occurrence of occasional sighing respirations of a nervous type. All of these symptoms might be taken to denote merely an extremely neurotic child.

Of sensory changes in chorea I have not found more than a trace. Pharyngeal anæsthesia, the only one I have looked for often, I have noted but twice. Considering how comparatively common this is in neurotic young adults, I had expected to find it in chorea more frequently than I did. Its absence may perhaps be explained by the chronic tonsillitis and general faucial injection which are so usual in choreic patients.

The mental symptoms of chorea are of great importance, and it is not too much to say that they have not received the recognition that is due to them. They are so constantly present and so much a part of the disease that in many ways chorea might well be looked upon as a mental rather than a motor disease. Yet the mental side of the disease has been so neglected that some authors have gone the length of describing a condition which they term "hemi-chorea." With the severe forms of choreic insanity, such as a raving delirium, agitated melancholia, dementia or coma, we are not here specially concerned. What I wish to emphasise particularly are those slighter types of mental perversion which are seen in one form or another in all choreic children. These are mental depression, excitability, emotionalism, inattention, loss of memory, or signs of diminished control as shown by outbursts of passion, unnatural fear, uncontrollable laughing or crying. Often indeed, if the history of the onset of chorea be carefully traced, it is found that such symptoms as these are noted prior to the development of definite movements. As a rule early in the disease the mental attitude is one of depression, while during convalescence it becomes one of exaltation. This will be referred to later in the study of the nervous symptoms (latent chorea) in cases of acute and convalescent rheumatism. In their slightest forms, therefore, these symptoms of chorea would appear as those of mental instability as shown by excitability, fretfulness, inattention, and attacks of passion or crying; such symptoms as might be found in a neurotic, spoilt, but nonrheumatic child.

The atonic symptoms of chorea, paresis or paralysis, are usually present only in the severer forms of the disease and, as a rule, are late in their appearance. Sometimes the paralysis is so marked and accompanied by such rapid wasting as to suggest that the anterior horn cells have been attacked by the infection. I mention this because chorea is so often spoken of as cerebral rheumatism, whereas it may quite possibly be a disease of the whole of the central nervous system in which involvement of the cerebrum gives rise to the earliest and grossest perversions of function. It is obvious that the atonic symptoms in their lesser forms will not be recognisable as choreic, and thus are of no aid to us in approaching the disease from our present standpoint.

Before passing on I must make mention of some of the other signs of the rheumatic infection, particularly as they occur in cases of chorca. Over tonsillitis, "growing pains," muscular rheumatism, and subcutaneous nodules we need not pause; their significance is well appreciated. Arthritis rarely co-exists with well-marked choreic movements as has long been recognised. Perhaps this is owing to the stimulus to complete motor control set up by a painful joint.

to complete motor control set up by a painful joint.

The heart, as has been taught by Dr. D. B. Lees, shows dilatation as its earliest response to active rheumatism. This is only to be detected by careful percussion of the deep cardiac dulness. In addition the pulse is quickened and the heart excitable. Reduplication of the first apical sound is of some interest: it is not uncommon in dilated hearts and

in those of children who are nervous under examination, and where these two factors are both present, as in chorea, it is so common as to be almost the rule. Usually it passes off after a few days' rest in bed. Irregularity of the heart is very frequent in chorea, but is not so common as is the reduplicated and rather slapping first apical sound. The pulmonary second sound is usually augmented and frequently doubled. In the earliest stages of cardiac dilatation there is no systolic bruit at the apex.

Anæmia is the rule in all rheumatic infections, and it is of interest as to some extent it is an index to the progress of the case. It is very prone to remain in spite of treatment by iron should the infection be quieted but not destroyed. It is frequently seen associated with a rather characteristic pink flush on the cheek. Pain in the epigastrium or in the left side of the chest is a symptom often found in rheumatic children, and I have seen it so severe as to be the cause of the child's visit to hospital. It may occur after food but often is independent of meals. Epistaxis is not uncommon in rheumatic children with slight cardiac affections, as Dr. Sidney Phillips has pointed out.

Headache is an interesting symptom. It is, of course, a common associate of anæmia, but in children is more often than not rheumatic in origin. Goodhart 2 states that in 33 cases of headache 23 were of rheumatic stock. commonly this symptom is seen in the early stages of chorea, as Dr. G. F. Still has noted, and so may be regarded not only as rheumatic but as evidence in many cases of an early intracranial infection. It will be remembered that Dr. F. J. Poynton and Dr. Gordon M. Holmes 1 have found vascular engorgement of the pia-arachnoid among other changes in chorea. Thinking that the headache might be due to meningeal ædema, for an excess of cerebro-spinal fluid is usually present in chorea, I tried the effect of calcium lactate as suggested by Sir A. Wright. The symptom was, however, completely unrelieved by this measure, while as a rule it is easily amenable to treatment by sodium salicylate. It is important to recognise that while headache is a frequent result of rheumatism in children, it is rarely produced in them by the salicylate group of drugs.

Sweating of the palms of the hands is very constantly seen in children with any form of rheumatism, but to a less extent is not uncommon in others as well.

I have described in some detail symptoms that must be familiar to all who have studied rheumatism in childhood, partly because any emphasis that is laid upon the fact that chorea is not a disease of the motor system alone is not amiss, and partly because in the delicate task of tracing so composite a clinical condition as this to its earliest manifestations it is necessary to put clearly what are the symptoms that might be expected to be present. It will be seen that I have for the most part omitted the occasional and rare phenomena and have referred to those which are seen if looked for in case after case.

We may expect, then, that a patient showing the earliest signs of chorea would appear to us in somewhat the following light. The child would be pale, fidgety, and in the finer movements of the limbs clumsy; he would be nervous, easily frightened and upset, affectionate but passionate when crossed, excitable but readily exhausted, unable to concentrate his attention on anything for more than a moment, and hence getting into trouble at school, particularly over his The heart will almost certainly be dilated and excitable, with reduplication of the first sound at the apex and possibly irregularity of rhythm. The hands will be moist, and the pupils may show various abnormalities. Headache and pain in the left side or epigastrium might also be present. On inquiry there would probably be obtainable a history of sore-throats or growing pains, or of a strong rheumatic taint in the family. In addition there might be symptoms that I have not yet mentioned. From the general nervous instability as seen in the earliest stages of chorea may arise many so called functional nervous disorders, such as disturbed sleep, night terrors, somnambulism, acquired enuresis, habit-spasms, lienteric diarrhoea, and the like.

I may now proceed to describe how this condition of mental and physical ill-health, which is rheumatic in origin and which I have termed "latent chorea," is met with in children. It may be seen in three groups of cases, and I give them, not in order of their importance, but in that in

Goodhart and Still: Diseases of Children, seventh edition, p. 661.
 Common Disorders of Childhood, p. 458,
 THE LANCET, Oct. 13th, 1906, p. 982.

which they are most conveniently studied. These are (1) in children with obvious acute rheumatism; (2) in children convalescent from rheumatism and chorea; and (3) in children without any very obvious rheumatic symptoms.

1. Latent choren associated with acute rheumatism. - Children with acute rheumatism of the joints, muscles, or heart show as a rule that the nervous system has not escaped. I have heard the saying attributed to a physician eminent among those who study the diseases of children that "nearly all rheumatic children have chorea." Certainly this is so if chorea is recognised in its earliest forms. If it is taken to be a disease of disordered movements only, and these are tested for by the coarse method of making the child hold its hands out straight in front of it, then the disease cannot be said to exist in all rheumatic children. A more delicate test for these movements is required. Watch how the child fidgets as one approaches the bed, how jerkily the hand is withdrawn from under the bedclothes to shake hands, or how the clumsiness in action is shown as the child pulls up its bed-dress for its chest to be examined; in such ways the traces of choreic movements are clearly seen. Often, indeed, a definite attack of chorea can be watched developing out of such slight signs as these. Another test which I have found of use is that noticed when looking for pupillary changes - namely, the child's inability to keep its eyes fixed on an object for more than a second or two. As Dr. Langmead pointed out, abnormalities of the pupils are not uncommon in these children. On the mental side also traces of chorea are quite evident. How depressed are children with acute rheumatism and this in the absence of pain. When admitted to hospital their trials are no greater than those of other children, but their unhappiness is much more severe. Often they can be found crying quietly with long convulsive sobs, the very picture of misery. mental depression has often been noticed in cases of acute rheumatism, and has been attributed to the treatment by salicylates. But I have seen it many times where no such drug has been used, and I have seen children entirely free from it yet taking between 300 and 400 grains of sodium salicylate per diem, and am convinced, therefore, that this symptom of mental depression has, as have anæmia, cardiac depression," and others, been erroneously ascribed to the treatment instead of to the disease. Salicylate of soda will, as Dr. Lees teaches, depress a child if allowed to produce nausea or vomiting, but not otherwise. In adults with acute rheumatism a feeling of intense misery is not seldom present and is not always attributed by the patient to pain. That it is not so marked as in children is explicable on the grounds that the nervous system is more stable in adults than in young subjects and that in children all bacterial infections tend to become more generalised than is the case in adults.

At a Christmas entertainment in a children's ward I had once an excellent opportunity of noticing the nervous instability caused by rheumatism. One of the performers entered the ward dressed in a "property" monkey's skin. Most of the patients were delighted, but from some came immediate shrieks of terror, and I noted that those frightened included not only convalescent cases of chorea, but children with joint or cardiac rheumatism.

The recognition of latent chorea in cases of acute rheumatism adds another link to the strong chain of evidence binding rheumatism and chorea together as the result of one and the same infection.

2. Latent chorea in convalescence from acute rheumatism and chorea. - During convalescence from acute rheumatism the signs of latent chorea are somewhat different from those just described. The main change is in the mental condition of the child, the morbid depression is succeeded by an unnatural mental exaltation. The convalescent rheumatic child is a very delightful little person and in a ward is everyone's favourite. (I think no one will deny this.) He is affectionate, obedient, intelligent, and quick; his wits are, in fact, considerably sharper than those of most children. His shyness has gone and he is now willing very quickly to become your friend. He is very prone to become overexcited at play and has to be looked after on that account. He is apt to take liberties with you, and in his excitement may be very rude in a guileless way. A word from one in proper authority, however, quickly subdues him and may reduce him to tears of penitence; I do not think I ever saw him seriously punished.

In addition to these signs of mental instability the slight

motor symptoms already mentioned are still present, but as the initial depression wears off a new facial movement makes its appearance. This is the quick smile of welcome seen on the approach of a visitor; pleasant enough in its way but far from convincing, a veritable "society smile." In cases of chorea it is often seen and indicates, I think, practically no emotion of pleasure, but during convalescence it does express in an exaggerated way the feeling of pleasure. It is very characteristic.

A patient recovering from chorea passes into exactly the same condition, and to one who has trained himself to recognise at sight the slighter forms of chorea it is often impossible to distinguish at a glance between the child who has rheumatic synovitis or slight heart trouble and one who is getting well from cherea. Lastly, under this heading comes an important consideration. This latent chorea of convalescence may depend on nerve-cells which have been damaged by a rheumatic infection which is passed and gone, but on the other hand—and this is specially to be feared where there are persistent anæmia and a regular slight nocturnal rise of temperature—it may be due to a still smouldering infection, one that is damped down but not destroved.

3. Latent chorea without obvious symptoms of rheumatism.—
It is to this class that I wish to call special attention, for by
the failure to recognise it and its rheumatic origin we may
lose a valuable opportunity of preventing the severer forms
of heart disease.

Children suffering from this form of latent chorea may be brought to the doctor for various complaints. For the most part these are of a slight and indefinite nature. The mother may complain that the child is out of sorts, is languid, will often refuse to touch its food; in her own phrase, "I don't know what to make of him." Headache is a common symptom, and for this, I should imagine, these children not seldom find their way to the ophthalmic departments of hospitals. The mother may volunteer the fact that the child is very nervous but, as a rule, inquiry has to be made if there has been any change in the child's temperament, when it will be found that he has become excitable, fidgety, irritable, passionate, and timid. The patient may have become too frightened to sleep alone or to cross a street. Sometimes the child's pallor attracts the mother's attention, or it may be that symptoms referable to the cardiac dilatation, such as the feeling of being always tired or of the feet being too heavy to lift, cause the visit to Fidgetiness is rarely in these cases the chief complaint, but on inquiry the mother has usually noticed it, and may say that the boy is no longer able to play quietly by himself or the girl to sit at her sewing. In addition, the voluntary movements of the finer sorts have become clumsy. I have seen in these children the marks of needle pricks all over the three middle fingers of the left hand, while in an ordinary little girl who sews they are confined chiefly to the inner surface of the index and to the tip of the middle finger. Their mental fidgetiness is often shown by the fact that although previously good at school they have lately got into disgrace over their lessons, particularly their sums, and may even have been threatened with degradation to a lower class.

On the other hand, more definite symptoms arising from the nervous instability of these patients may cause the child to be taken to the doctor. The most common of these are talking (often doing sums) during sleep, difficulty in getting off to sleep, night terrors, somnambulism, acquired enuresis, lienteric diarrhœa, or habit spasms. These cannot be regarded as part of the chorea, but are rather of the nature of complicating symptoms; the chorea causes the nervous instability, which in its turn is responsible for the appearance of this group of disorders. The appearance in rheumatic children of such conditions as these has been noted by many authors.

The diagnosis of this type of chorea is often suggested at sight, partly by the peculiar pink flush of the patient's cheeks and partly by the general deportment of the child, the fidgetiness, the smiling, and the generally unbalanced nervous state. Such an impression needs careful confirmation by means of the examination of the patient's symptoms and physical signs. Of first importance is the question of sore-throats and growing pains, while headaches are of very constant occurrence. In 16 consecutive cases of latent chorea of this type I noted sore-throats in 13, growing pains

in 9, and headaches in 11. Inquiries should be made into the family history for evidence of rheumatic fever or chorea in the parents or, a matter of greater importance, in brothers and sisters. As might be expected, an inherited neuropathic taint can often be traced. In a neurotic child the earliest symptoms of a mild rheumatic infection are likely to be those referable to the nervous system. Dilatation of the heart is in favour of a rheumatic infection, for this is the most common cause of such a condition in children.

We have, then, to decide in any particular case if the condition is one of latent chorea or is simply an expression of nervousness in a neurotic but non-rheumatic child. A nervous child may show a considerable amount of fidgety movement—a miorokinesis, Dr. F. Warner has termed it, and may be emotional and anæmic and may show slight dilatation of the heart. The symptoms of latent chorea can, as a rule, be distinguished from this state with fair ease. They are of recent origin, the movements are rather different in type, and are associated with clumsiness in the finer voluntary movements, as in sewing. The impossibility of getting the child to fix the eyes on an object for more than a second or two is much more characteristically present in cases of latent chorea than in neurotic but non-rheumatic children. But sometimes it is difficult to decide between the two conditions; as Dr. Still's says, a nervous child "manifests a general fidgetiness which is easily mistaken for a slight chorea." Where such a difficulty arises, the question can usually be settled by inquiry into the matter of sore-throats and growing pains. Where these are, or have been, present, and especially where they are associated with dilatation of the heart, headaches, pain in the left side or epigastrium, moist hands, and where there is a marked family history of rheumatism, the diagnosis of latent chorea becomes increasingly probable. The diagnosis is not to be settled by the presence of any one of these points but by the coexistence of several of them.

I do not wish to suggest that all children who are nervous, fidgety, and pale, and who show slight dilatation of the heart, wet hands, or pupillary abnormalities are the subjects of a rheumatic infection; in many such there is no evidence of this disease to be traced. But it is the main object of this paper to emphasise the fact that just such a condition of ill-health and nervous instability may be due, and in London is very commonly due, to a latent chorea. It is then a matter of some moment that the physician, confronted with a child suffering from various nervous symptoms, should bear in mind the frequency with which such disorders owe their origin to a rheumatic infection; for, to transpose Dr. Still's words quoted above, a child with a slight degree of chorea manifests a general fidgetiness (with others signs) which is easily mistaken for simple nervousness.

It might be suggested that what I have termed latent chorea is due to a rheumatic toxemia, while chorea, fully developed, is due to a rheumatic infection of the central nervous system. While this may or may not be the case, it is a small point beside the important one of the recognition that the condition is rheumatic.

Lastly, the association between rheumatism and "nervousness" has been recognised for many years until it has become to be vaguely held that the infection is particularly prone to attack children of a neurotic temperament. It appears to me, however, that this association is much more properly explained for the great majority of cases by regarding the nervousness as a result of a mild and unrecognised infection. Given the infection, the symptoms of chorea, latent or fully developed, are more prone to appear in a neurotic than a normal child.

Conclusions.—1. That (rheumatic) chorea declares itself first by symptoms significant of general nervous instability. 2. That in dealing with children suffering from nervous disorders of many kinds special care should be taken to exclude the possibility of their having originated from a slight rheumatic infection. 3. That the well-known association between rheumatism and nervous instability is not to be explained by considering that the infection is specially prone to attack neurotic children, but by regarding the nervousness as in most cases the outcome of an infection already present (latent chorea). 4. That the mental depression and headache in rheumatic children are usually to be attributed to the disease and not to its treatment by salicylates. 5. That

the recognition of latent chorea, in children suffering from obvious acute rheumatism affords strong evidence that chorea is a rheumatic condition.

Queen Anne-street, W.

NOTES OF A CASE OF X RAY ULCERS CURED BY HILTON'S METHOD.

BY AGNES F. SAVILL, M.A. St. And., M.D. GLASG., M.R.C.P. IREL.,

ASSISTANT PHYSICIAN TO ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, LEICESTER SQUARE.

A MARRIED woman, aged 30 years, consulted me at St. John's Hospital for Skin Diseases on Feb. 2nd, 1909, complaining of intense pain in two ulcers situated on the left shoulder and upper arm. The ulcers had appeared after prolonged treatment by X rays for scleroderma, and the pain was so severe that she had not slept for over an hour at a time for nearly two years.

The patient was a sensible woman, able to give a clear account of her illness and the progress of her symptoms. Just after the birth of her first child in 1898 she had pain in the left breast, and a few weeks later she noticed the skin on the inner side of the breast had a white mark, which increased in size very slowly and spread over to the sternum. About four years later (1902) the left shoulder and upper part of the arm became affected similarly, and during the following year the whiteness and thickening of the skin gradually extended to the forearm. In 1903 she sought advice at one of the large hospitals in Great Britain and treatment by X rays was ordered. Six months later the disease appeared on the outer aspect of the left thigh, and X rays were administered to that patch also. Some time later she became aware that small patches had appeared on the back and on the chest under the left arm, and in the winter of 1908-09 patches appeared on the left side of the neck just above the clavicle.

History of the X ray treatment and its results.—The treatment was administered almost daily for a period of two years, from 1903 to 1905. The left shoulder was exposed to the rays for five minutes, the lower part of the arm for another five minutes. During this treatment of the arm she was in the habit of sitting with the elbow flexed, the hand resting on the shoulder, with the thumb tucked in under the first finger. The breast and the thigh were also exposed for about five minutes each. Thus the daily treatment lasted altogether about 20 minutes. Sometimes there was a degree of reaction, when she was given a week or two of rest until it had subsided. The reaction consisted of redness and soreness, not severe, and it occurred only on the upper left arm and shoulder, never on the breast or thigh. She believes that towards the latter part of the treatment it occurred about every six or eight weeks, and usually lasted only for about one week. In 1905, however, a very severe reaction occurred, which extended down as far as the elbow, and the left side of the face and the first and second fingers of the left hand also were affected. She decided not to have any more treatment. A year or so later she left that town and came to reside near London and was therefore unable to seek advice from her former medical men for the conditions which ensued. When the inflammation had subsided she noticed two small "pimples," one on the left shoulder, one about 2 or 3 inches lower on the upper arm. These "pimples" inches lower on the upper arm. These "pimples" remained troublesome for two years (1905 to 1907); always catching in her clothing as she dressed and undressed and were very tender. They had a hard scaly top, and later became red and swollen around. About 1907 the scaly tops used to come off frequently, grow again, and again fall off. Then the tops failed to reform, and open sores were left beneath. A little lower down on the arm was a smaller pimple which, presumably, was not so much exposed to friction, because the patient's attention had not been drawn to it; the importance of this lesion will be referred to below. The two ulcers slowly increased in size and became intensely painful. The upper ulcer was never larger than the size of a shilling, the lower became as large as a fiveshilling bit, and was, she thinks, about ½ inch deep; at no time was there much discharge. For two years (1907-09)

she was unable to obtain relief sufficient to obtain more than an hour of sleep at a time. She sought medical advice in various quarters, and tried innumerable remedies in vain. At last she discovered that carbolic fomentations (1 in 100) gave more relief than any other application. Even with this she was obliged to rise up in the night every hour to apply a new dressing, and her whole life, day and night, was devoted to devising some method of alleviating pain for an hour or half an hour at a time. The pain was steady, with occasional sharp darts, and extended from the ulcers up to the spine; she indicated a position on the spine extending 3 inches below the second dorsal vertebra.

Condition when seen in February, 1909. - When the patient consulted me at St John's Hospital there were two ulcers, one on the rounded part of the left shoulder, the other 2 inches lower on the outer aspect of the arm. Both were about the size of a shilling, the lower slightly deeper, about one-third of an inch, with irregular raised margins and clean red bases. Two inches nearer the elbow, in a line with the ulcers, was a hard raised papule with a scab. This was picked off a few days later and revealed a small ulcer which in three days time enlarged to the size of a threepenny-bit. The patient explained that the upper two ulcers had begun in a similar fashion and she had not observed when the third nodule first made its appearance. The ulcers were situated on a band of thick sclerodermatous tissue which extended down as far as the middle of the forearm. This band varied in breadth from 4 to 1 inch, and was surrounded by an area of white atrophied skin over which coursed large telangiectases. The first and second fingers of the left hand (which, as described above, had also been exposed to the X rays) showed signs of chronic X ray dermatitis of a mild degree—slight atrophy and telangiectasis, with brittleness of the nails, and the left cheek presented a slight mottling which was not seen on the other cheek. Similar atrophy with large telangiectases existed on the breast and thigh, the parts which had been exposed to the rays. Patches of morphoea (localised scieroderma) were present on the back and chest; some of these were white and thickened, some were pigmented, with a purple surrounding area, such as is frequently met with in association with morphoea, but none of those untreated areas had the marked degree of telangiectasis present over the areas which had been exposed to the X rays.

Treatment.—After trying cocaine and other analgesic applications a week without any effect I asked my colleague, Dr. Alfred Eddowes, to see the patient and to take her into the hospital if he considered that an operation would yield good results in such a case. Dr. Eddowes considered that the only possible method of giving relief to the patient was to divide the nerves just before they entered the ulcerated areas. Accordingly, on Feb. 18th, 1909, he operated. A semicircular incision, about one inch deep, was made above each of the three filters. Another slightly shorter semicircular incision of the same depth was made across the centre of each ulcer. Free bleeding was encouraged; and the gaping wounds were stuffed with aseptic gauze and a fomentation applied. The gauze remained in for several days; it was left in situ until the granulation tissue, swelling up from the bottom of the wounds, pushed out the gauze before it. The gauze, therefore, was not removed until nature herself rejected it, and the wounds healed up slowly with abundant granulation tissue. The natural healthy discharge was not washed off with antiseptic lotions; a non-irritant boracic acid ointment with yellow paraffin basis was applied. The operation had an immediate result for the better on the patient's condition. Although a sleeping draught of chloral hydrate was administered for another week the patient stated that on the evening after the operation the pain had entirely altered in character, and she so rapidly improved that at the end of the week she was able to have a good night's rest without the administration of any hypnotic. During her residence in hospital injections of fibrolysin were given to bring about absorption of the extremely hard sclerodermatous condition of the arm. When the patient was discharged from the hospital after three weeks' residence the ulcers had almost healed up and were completely free from pain. Since that time (March) she has attended more or less regularly, at fortnightly intervals, the out-patient department of the hospital. Although the operation had cured the pain and the ulcers had at once started to close complete healing did not take place for several months; a tiny nodule remained in the centre which refused to be completely covered with healthy skin. Many different lotions and ointments were tried, but the only application which did not set up discomfort was boracic ointment made up with yellow vaseline. It must be remembered that these ulcers were situated on sclerodermatous tissue, and the unhealed nodule was in the centre of the thick waxy band of diseased skin. The injections of fibrolysin begun during the stay in hospital were repeated at each visit to the out-patient department with the object of softening the thick sclerodermatous parts. The result of the injections was satisfactory; all the thickened parts became softer and thinner. By October, 1909, the upper two ulcers were completely healed, but the third still presented a small nodule, which did not heal till November.

Remarks.—The case is of interest in that it demonstrates how certain forms of X ray ulcers may be cured, and the excruciating pain relieved even after two years' suffering by the old method described by the late Mr. John Hilton. In his well-known work "Rest and Pain" he mentions an exceedingly painful and obstinate form of ulcer. He believes the condition was due to the presence of an exposed or injured nerve termination near the surface of the ulcer. The pain was relieved and the ulcer cured by passing a pointed bistoury in such a way that the nerve was divided between the spine and the painful part in the ulcer. Very little is at present known of the condition of the nerves in X ray dermatitis, and as no histological examination was made of the ulcers in the present case it would be useless to formulate any theory as to the cause of her pain. In spite of the fact that the ulcers appeared on a part of skin affected with scleroderma there can be no doubt that they were due to the frequent short doses of X rays. In a letter to the British Medical Journal (September, 1906) Mr. Hall-Edwards describes his unhappy experiences, and it will be noticed that his description of pain corresponds with that endured by the patient in the case above described. "I have not experienced a moment's freedom from pain for more than two years. The pain is of a neuralgic character; it never ceases, and is intensited from time to time by sudden stabs and jumps." So far as a have been able to find in the somewhat scanty literature on the subject of the treatment of these chronic ulcers, curettage and skin-grafting, or excision, have been the only successful methods of dealing with them, and amputation when they begin to take on a malignant character. I hope the above brief notes may be of use to sufferers who have tried local applications in vain.

Harley-street, W.

ACTION OF CRYOGENINE ON PHTHISICAL TEMPERATURE.

By J. E. GORDON, M.D. EDIN., MEDICAL SUPERINTENDENT, DEVON AND CORNWALL SANATORIUM.

Most recent advances in the treatment of the thermal state in pulmonary tuberculosis have a tendency towards dispensing entirely with the assistance of drugs. The absolute rest practice for the lowering of the temperature has very much to commend it, and in an institution where it can be efficiently promoted very satisfactory results are obtained. The "spoon-fed and bed-pan" patient, however, is by no means always a possibility, and notably is this the case in general practice where the means of the patient do not always permit of the luxury of a nurse. In certain sanatoriums for consumptives—for instance, in those which are run without a nursing staff—absolute rest for any length of time, the view being the lowering of temperature, cannot be insisted upon. Absolute rest not being possible, the question is, then, what are the best means to be adopted to influence a thermic depression? Of course, the patient is put to bed, and if fever is high sponging may be resorted to, and an acid mixture, or aspirin or phenacetin, may be ordered. This may be all that is necessary, and the temperature comes down to remain down.

In the case of obstinate temperature the ordinary pharmacopicia of antipyretics may be tried, one after the other, without result, or merely with transitory effect. The continued course of the high temperature of acute disease, besides discouraging the patient, causes grave physical distress, and it is imperative that the practitioner should find the means to control it. The usual remedies having been tried and found wanting, the exhibition of the little-known drug (in this country) cryogenine may result favourably. I am prompted to speak kindly of cryogenine, as, from a long experience of it, I have found it to act in many instances where the more notorious antipyretics have failed. Cryogenine has been considerably mentioned in continental medical literature. In regard to its composition the following formula is given:—

 C^6H^4 $CoAzH^2$ $AzH - AzH - Co - AzH^2$.

The introduction of the group AzH — AzH — Co — AzH-into the aromatic nucleus is stated to endow this drug with its antipyretic properties. "Az" is the French symbol for azotum. Cryogenine is, in short, a semi-carbazide.

Cryogenine being a powder, the simplest way to administer it is as such, or in a wafer or cachet. As to dosage, I have never exceeded 8 grains. For adults 5 grains is a suitable quantity to commence with, and often it will be found unnecessary to exceed this amount. Cryogenine is said to possess very little toxicity. While the doses I have mentioned are smaller than those prescribed on the continent, I have never found any ill effects to attend their continuous administration twice daily for a fortnight or three weeks. Far from this prolongation having a deleterious effect on the organism, the patient will often confess to a sense of well-being while under the influence of this remedy. It is, however, not advisable to continue cryogenine for too long, as constant use predisposes to immunity. The method of dosage on the continent is to begin with a large dose, 50 to 120 centigrammes (about 8 to 19 grains), and, the thermic depression having thus been attained, to continue in decreasing doses at intervals of 24, 36, or 48 hours as necessary. Children and debilitated individuals, of course, require weaker doses. By giving smaller doses, 5 to 8 grains at 12 A.M. and 4 P.M. daily, and continuing these until the temperature appears settled, the effect is to induce a steadier and more persistent attack on the thermal phenomenon. The object of the 12 and 4 o'clock administration is to intercept the evening rise.

In the accompanying chart the effect of cryogenine is The patient was a girl, aged 16 years, by occupashown. tion a clerk. She came under observation with acute pulmonary disease of short duration, Stadium ii. (Turban's classification), L. (infiltration both lobes). There was no expectoration, but a Calmette instillation was positive. The disease was of a particularly virulent character: the fever was high, there were profuse night sweats, and wasting was marked. From the period, Feb. 27th to March 28th, the patient was prescribed rest, good airing, special diet, which included raw-meat feeding, and the occasional manifestation of aspirin (5 grains, later 10 grains. three times a day). The rest, I may say, was not absolute: the patient was allowed to read, sew, feed herself, and go to the lavatory. The aspirin produced a transitory effect. On March 29th cryogenine (5 grains twice a day) was commenced, with no result. An increase to 7 grains twice a day produced in the course of a few days a fall in the temperature to normal. On April 18th the drug was discontinued, chiefly on the probability of immunity resulting if it were continued longer. The consequence was a decided elevation of the evening temperature, but at no point did the rise reach the former summits. The drug was re-administered on May 15th in 7-grain doses and immediately caused a normal reading. On the 27th the cryogenine was discontinued, and a few days later a last thermic flutter to 101° F. was exhibited, which was promptly discouraged by a renewed course of the drug. The patient was now gaining weight; the physical signs were satisfactorily clearing up. She was put on the usual course of graduated exercise and later graduated work. She was discharged very much improved, with slight physical signs, a gain of 29 pounds, and in a fit condition to return to her ordinary occupation.

The above case is one out of a number of successful results obtained from the use of this remedy. Contrasted with

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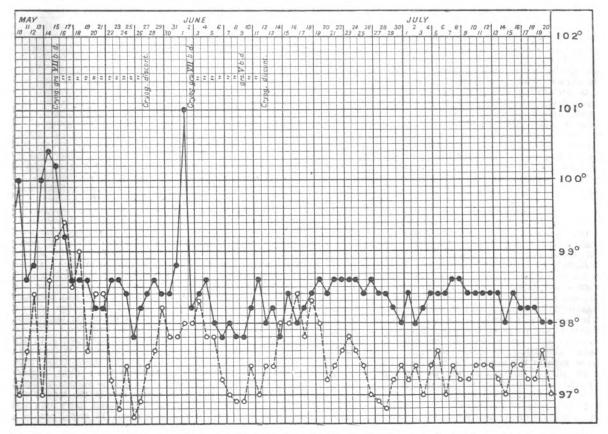
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The circles equal morning temperature (7 A.M.). The dots equal evening temperature (5.30 P.M.). The temperature was taken in the mouth.

pyramidon, which certain writers regard as the best drug for phthisical temperature, I think there can be little doubt that cryogenine is the safer and more efficacious antipyretic. Pyramidon shows a quicker and more pronounced fall—three, four, or more degrees, whereas cryogenine is content with a drop of two or more degrees. The former action is decidedly risky, as collapse may follow this sudden depression, especially if the fall be to subnormal.

Didworthy, South Brent, Devon.

A CASE OF PERIPHERAL NEURITIS (ALCOHOLIC).

BY JOHN WYLLIE, M.D. GLASG.

On Nov. 27th, 1908, I was asked to see a married woman, 40 years of age, to certify for asylum detention, but her mental condition did not seem to me to warrant such a grave step, an opinion with which Dr. Edward O. Daly of this city The woman admitted having taken drink freely Her tongue during the last 15 years—beer for the most part. was dirty, but not tremulous; breath markedly offensive; urine scanty and high-coloured, but contained no albumin or sugar, and had a specific gravity of 1020. She was ruddyfaced and still having her periods, which usually lasted a week. The liver projected two finger-breadths below the edge of the last rib and was hard; the spleen was larger than normal. The pulse was quick and at times irregular. and the apex beat was diffused; otherwise the heart and lungs were normal, as also was the temperature. The patellar-tendon reflexes were absent, and the patient had complained during the last few days of shooting pains in her legs, and she had been inclined to fall suddenly, her legs giving way without warning.

On Dec. 3rd she could no longer stand and could barely move her limbs in bed. The muscles in both upper and lower extremities were flabby and ill-nourished, and were the site of occasional spasm; both knee- and wrist-jerks were absent on the right and faintly flexor on the left side. She complained of her legs feeling numb, but not of tingling. There was some loss of appreciation of tactile stimulus and only a very slight response to faradic electricity. Muscular pians were very prominent, and she called out when a limb was grasped; the knee- and ankle-joints were very painful on movement, but there was no effusion. The patient had a thick, coarse voice, and when she worked herself into a state of excitement upon domestic affairs her breathing was apt to become laborious. Citrate of potash with nitrous ether and cinchona were given internally, and daily intramuscular injections of liquor strychniæ (10 minims) were begun. On Dec. 29th, as the neuritic and deep muscular pains were now much less marked, massage and the daily application of voltaic electricity were started. There was morning vomiting. The paralytic state was now more absolute than the note of Dec. 3rd conveys. The patient could not raise herself in bed or even raise her head from the pillow, or convey a piece of bread to her mouth; she could not raise her legs ever so little from the bed, or separate them more than a couple of inches, or turn over in bed. There was no paralysis of any cranial nerve, but beyond the power of laughing and crying, &c., the only voluntary powers present were the ability to swallow, to turn the head a little to either side and slightly to raise the forearms, and a restricted power over the bowels and bladder. There was a frequent desire to micturate and defæcate, which may be partly explained by highly concentrated urine in the one case and the presence of hæmorrhoids in the other, and if she was not provided with the bedpan quickly accidents happened, but there were no shooting girdle pains or bedsores. The pupils responded actively to light and accommodation, and colour vision was normal. The abdominal reflexes were normal and the other reflexes were in the same state as formerly noted, except that the slightly flexor state of the left plantar had dis-The muscles of the forearms were much wasted. as were the thenar and hypothenar eminences and the interossei; the muscles of the legs were not so much shrunken as those of the forearms, but they were very flabby. Tactile and thermal sensibility was now good, but all over the legs a pin-prick was spoken of as something cold, and the grasp

When the forearms of each hand was just appreciable. were raised the hands hung helplessly, exactly as seen in text-book illustrations of people suffering from lead-palsy. The lower limbs could only be drawn up an inch or two and the feet were in a straight line with the legs; the condition known as dropped foot, the effect of gravitation and paralysis of the anterior tibial muscles, being well shown. Joint pains were still very severe when the limbs were moved. The patient wandered a good deal at night and was said to have delusions, but I always found her coherent and rational. The reaction of degeneration of muscles was marked. Faradic electricity elicited feeble responses in both thighs, except on the outer side of the left thigh, where it was more active, but there was no response below the knees. Faradism was feeble in the forearms and normal in the arms. Voltaism of 8-cell power produced feeble responses in the extensors of the forearms and strong responses in the flexors. Both forms of electricity produced little irritability when applied to the nerve trunks of the arms (median and ulnar) and legs (peroneal and tibial).

On Jan. 10th, as the urine was less concentrated, the medicine had been changed to potassium iodide, capsicum, and strychnine, except when the neuritic pains were much in evidence, when a chlorodyne mixture was given. There were occasional attacks of orthopnœa. On the 16th the patient was much worse. During the night there were two severe attacks of difficult breathing, made worse from the fact that the sufferer could do nothing to raise herself into the sitting posture. She was ordered potassium iodide, digitalis, and nitroglycerine, and extractum stramonii (½ grain), to be taken at bedtime. Massage, electricity, and strychnine injections were to cease for a time. On Feb. 2nd the dropped hands were not so noticeable, slight wrist-jerks could be obtained on both sides, and the patient could lift a full soda-water syphon with her right hand and a half full one with the left, and she recognised pin-pricks over the whole of the four extremities. The power in the legs had been increasing during the last three weeks until she could now flex the legs well upon the thigh, but she required the assistance of an attendant in re-extending them. The feet could be raised a foot or more from the bed but were allowed to fall sharply. Ankle clonus had disappeared. On the 15th the patient could take her food in the sitting posture, with a chair behind her, and could feed herself, but in a jerky manner. On the 22nd she was always lying upon her right side and kept the left leg continually flexed, crying out when it was straightened, and in order to avoid the possibility of this faulty condition becoming permanent side splints were ordered to be applied daily for eight hours. On March 10th she could raise herself to the sitting posture by the merest touch of the attendant's hand, her legs were no longer kept in the flexed position, and she could change them from the flexed to the straight position without pain. Although the grasp of the hand was greatly improved she could not by her utmost efforts move the indicator of the dynamometer. On the 24th there was full control over the bowels and bladder, and the attacks of orthopnœa had ceased. As the dropped foot on both sides was becoming rigid, simulating equino-varus, the heel being raised and the sole turned inwards, and the hands were assuming a claw-like state, splints to counteract these conditions had to be applied. On account of the tendency to spasticity the hypodermic injections of strychnia were discontinued altogether. On April 1st tonic medicine was given instead of the iodide of potassium, tinctura ferri being preferred to quinine for a time on account of the patient being somewhat anæmic. On the 16th, with strong support on either side, the patient could stand, and she felt her weight upon her heels for the first time during her illness. On May 1st nothing had been said lately about delusions, the removal of hard plugs of wax. which pressed upon the membrana tympani on either side, possibly removing a source of reflex irritation.1 The reaction of degeneration had almost disappeared. matter of reflexes the condition was as follows :- Wrist-jerks : right, fairly active; left, just appreciable. Knee-jerks: right, active; left, appreciable. Plantar reflex: right, slightly flexor; left, absent. There was as yet no voluntary flexion at the ankle-joint, and if there was any at the toes it was very slight. The patient could feed herself fairly well, and with strong support could walk about 12 steps, but in a

¹ Three or four months after the close of the writer's attendance the patient was certified as insane.

thoroughly ataxic way. The hands and feet were quite supple, and could be moved passively in any way without pain.

Remarks.—The treatment was directed not only so to improve the state of the peripheral nerves as to restore feeling to the skin, which was more or less insensitive, and power to muscles which were paralysed, but also to create in the patient a distaste for drink. What was the cause of the orthopnœa? There was no bronchitis, lung trouble, or albuminuria, and the heart and valves were normal. suggest fatty degeneration or infiltration of the heart on the one hand and a faulty innervation of the organ on the other. Recovery is strongly against the former view and in favour of the latter, especially as improvement was coincident with the return of motor power in the limbs, and I think neuritis of the cardiac branch of the vagus is the correct answer. The inability to turn to one or other side or to rise from the recumbent position indicates that the neuritis was not confined to the extremities.

Vaso-motor disturbance was never very obtrusive; the legs and feet looked cold and livid and felt cold to the patient, and there was slight cedema of the dorsum of the left foot. The highly abnormal state of the lower reflexes, particularly the presence of ankle clonus, probably signifies that there was some change in the motor cells of the anterior cornua of the cord. Space forbids me to discuss the differential diagnosis, but I may say that the bilateral wristdrop and foot-drop, the deep tenderness of muscles, and the alcoholic history chiefly influenced me in concluding that my patient suffered from peripheral neuritis. Hull.

A CASE OF PNEUMONIA MIGRANS. BY H. BUCKLEY RODERICK, M.A., M.D. CAMB.

IN THE LANCET of Nov. 13th last, p. 1409, Sir Clifford Allbutt refers to a case of "pneumonia migrans" which he saw in consultation with me during its earlier stages. The progress of the case, ending in complete recovery, presents several points of interest, the details of which are as follows :-

The patient, a young lady, 27 years old, single, consulted me on July 13th last, complaining of slight occipital headache and feeling "out of sorts." Previously she had had no serious illness. In the autumn of 1908 she consulted me about a cough, some loss of flesh and appetite. As to the family history, her mother died from phthisis about the age of 40; one brother, now aged 21 years, is the subject of dormant caries of the spine; an elder brother is said to have recovered from pernicious anæmia; the rest of the family are apparently strong and healthy. At this time I carefully examined the patient's chest for possible early signs of tubercle, but could find none. I also subjected her expectoration, which was very slight, to bacteriological examination, with a like negative She rapidly recovered her usual health under a course of cod-liver oil and tonics, and I did not see her again until she consulted me on the present occasion.

The patient informed me that on July 9th she went for a cycle ride feeling perfectly well. She was caught in a shower of rain, but, in spite of her damp condition, rode on to a cemetery, where she remained some time arranging flowers on a grave. On the 10th she began to feel ill, and the following day being a Sunday, she stayed in bed, feeling cold and shivery. On Monday, the 12th, she kept about, but on Tuesday, owing to increasing headache, she came to consult me in the evening. Her temperature being 103° F. I told her to go to bed, and prescribed 10 grains of aspirin every four hours. During the night she was delirious at times and had no real sleep, the headache becoming more severe. The temperature ranged between 102° and 103°. respirations 24, and pulse 100. I examined her chest but could find no adventitious sounds. On the morning of the 16th, after another delirious and restless night, her temperature stood at 104°, and on examining her chest I found a small patch of consolidation hetween the right scapula and the spine. During the next two days the temperature ranged between 102.5° and 104°, but the most distressing symptom was a noisy delirium and sleeplessness, notwithstanding the administration of 15 grains of bromide every four hours

during the day and 7½ grains of veronal at 9 P.M. prescribed by Dr. Laurence Humphry, who saw her in consultation with me at this stage. On the morning of the 18th her temperature had dropped to 101.20, and, it being about the seventh day of the disease, I hoped that the crisis had been reached, but during the day it rose to 103.4°, and after another restless and noisy night the temperature at 2 o'clock the next day had risen again to 104.4°, and a patch of consolidation had appeared in a corresponding situation in the left lung. Another bad night followed, but her temperature came down by stages during the day and night following so that at 6 o'clock on the morning of the 21st the thermometer registered 99.4°

During this period the patient lay in a semi-comatose condition, with somewhat contracted pupils, muttering delirium, and occasional muscular twitchings. The urine on examination was normal; the sputum, scanty and never rusty, on bacteriological examination was found to contain some pneumococci, but no tubercle bacilli. On the advice of Sir Clifford Allbutt, who considered the case presented symptoms of meningitis, I performed a lumbar puncture which proved negative. During the 21st the temperature rapidly rose to nearly 103°, accompanied by a return of the delirium, and on the evening of the 22nd scattered patches of consolidation appeared on both sides of the chest. On the night of the 23rd the patient became noisy and very violent, and was not alleviated by a four-hourly dose of 15 grains of bromide and one hypodermic injection of morphia (4 grain). She refused all nourishment; her temperature oscillated between 101° and 103.8°. On the 25th Sir Clifford Allbutt again saw her in consultation and advised a half-drachm dose of chloral and 20 grains of bromide at 9 P.M. About 2 A.M. she began to perspire profusely, and slept for seven hours, her temperature rapidly falling from 103.8° to 101.5°. On the night of the 27th the restlessness returned, and on the following morning, her temperature standing at 102.5°, an urticarial rash appeared over the chest and abdomen. She was foaming at the mouth, the face distorted, the limbs twitching. At 2 P.M. the thermometer registered 103.8° and a fresh patch of consolidation appeared at the right apex. Tache cérébrale was very well marked. I here prescribed quinine sulphate (2 grains) every four hours. The twitchings continued throughout the night, but the temperature dropped to 100° by 10 o'clock the next morning, only reaching 101.8° during the day. She was here seen by Dr. Latham, who considered the case presented all the appearances of acute tuberculosis and advised the continuance of the quinine. At 5 A.M. on the 30th the twitchings ceased and the temperature remained at 100° till after mid-day, when it rapidly rose to 103 · 4°. The patient was quiet, showed signs of exhaustion, and continued in a semi-comatose condition. Throughout the 31st the temperature remained almost constant at 1020; at 6 o'clock on August 1st it rose suddenly to 104° and another patch of consolidation appeared on the left lung The right apex, under the third and fourth ribs in front. however, was distinctly clearing. From this, together with the fact that the very scanty sputum only contained a few pneumococci, I concluded that the infection must be pneumococcic and not tuberculous. Consequently on the 2nd, the temperature at 2 A.M. having been 104.20 and dropping at 2 P.M. to 102°, I injected ½ cubic centimetre antipneumococcic vaccine (Lister Institute polyvalent) containing 2,500,000 dead pneumococci. This was followed by a further drop in the temperature to 100° at 6 P.M. and to 98° at 6 the next morning. The patient, though exhausted, became quite conscious and rational. On examining the chest the right apex was found to be clear, but a dry pleuritic rub could be heard over the third left rib area in front. The temperature during the day only rose to 100.80 and descended again the next morning to 980. The right lung was quite clear and in the left lung could be heard sharp râles and coarse rhonchi. Next morning the temperature was again subnormal and did not exceed 100° during the day; the left lung was clearing fast. On August 5th the temperature remained practically normal all day and continued so, the patient making a slow, but uninterrupted

The striking features of the case were: (1) the cerebral symptoms, which persisted throughout the illness, varying from a semi-comatose state to a violent delirium; (2) the migratory nature of the pneumonia and the small area of

lung involved in each attack; (3) the slight disturbance of respiration, which only once reached 40 to the minute, being usually about 28; and (4) the rapid recovery after the small dose of antipneumococcic vaccine, which it is reasonable to suppose was instrumental in bringing about the favourable result.

Cambridge.

A CASE OF SYPHILIS OF THE PANCREAS WITH A PANCREATIC CALCULUS IN THE DUCT.

BY J. GEORGE TAYLOR, M.A., M.D. CANTAB., M.R.C.P. LOND.,

HONORARY PHYSICIAN, GENERAL INFIRMARY, CHESTER,

THE following case seems to me to be of sufficient interest

and rarity to be worth recording.

The patient, a man, aged 45 years, was admitted into the General Infirmary, Chester, under my care on Jan. 20th, 1909. His history was that he had been suffering from Bright's disease for 12 months and that six weeks ago he had had a fit. The family history was un-important except that his wife had had three mis-carriages, varying from the fifth to the seventh months of pregnancy, and that the feetus in each case was dead. On admission the patient was very weak; the pulse was hardly palpable, the expression was anxious, and the tongue was dry and brown. The temperature was 97.8° F., the respirations 28, and the pulse 94. The heart's apex beat was a quarter of an inch outside the nipple line, but no murmurs were heard. The lungs appeared healthy. In the abdomen a tumour was felt at the tip of the ninth right rib, protruding downwards and inwards towards the umbilicus for about 2 to 2½ inches. It was rounded in outline, something like half an orange, hard, and not tender on pressure, nor moveable. The dulness was continuous with the liver dulness, and the tumour appeared to be an outgrowth from the liver. There was some tenderness over the loins. The urine was of specific gravity 1012; it was acid, there was a large amount of albumin, but no sugar. No casts could be found. There was a good deal of ædema of the legs

In view of the family history it was thought that probably the abdominal tumour was gummatous in nature and that the albumin in the urine might be due to some lardaceous change in the kidneys secondary to syphilis. The patient was therefore ordered 20 grains of potassium iodide with drachm doses of liquor hydrargyri perchloridi three times a day. On Jan. 25th a pericardial friction sound was heard near the apex and also some pleural friction at the left base. On the 30th the albumin was distinctly less and the liver dulness was slightly diminished. For the last few days he had been feeling better. On Feb. 4th he vomited occasionally and the albuminuma was still getting less in amount. On the 9th he seemed less well; his pulse became very feeble and only 42 per minute. From then until the 13th he gradually got weaker and died during the evening of

At the post-mortem examination extensive pericardial adhesions were found; at the apex there was some hæmorrhage under the visceral layer of the pericardium. The left ventricle of the heart was hypertrophied. The aortic valves were healthy; the mitral, tricuspid, and pulmonary valves were sclerosed. The coronary arteries were hard and thickened. The aorta was atheromatous. The lungs were bound down practically all over by pleural adhesions and were very emphysematous. On section they showed much brown pigmentation. The liver weighed 48 ounces. and lower surfaces showed scarring and slight puckering, with bands of fibrous tissue running into the liver from the scars. The spleen was normal except for slight capsulitis. The suprarenals were normal. The kidneys were very granular, weighing 3 ounces each. The stomach and intestines were normal. The pancreas weighed 4 ounces; it was enlarged, being 6½ inches long and 2½ inches deep. It was very hard and very tough to the touch, feeling almost like leather. On making a longitudinal section and turning the front surface upwards two breaking down gummata were found; the larger was seven-eighths of an inch long and three-eighths of an inch broad. A very small calculus was iii., 172.

found in the main duct. It was about one-third of an inch in diameter, with a very irregular surface, brownish-white in colour.

Microscopically the pancreas showed marked fibrosis; in many places normal pancreatic tissue had quite disappeared. The smaller arteries showed well-marked changes in their walls, in some cases the endarteritis leading to complete obliteration of their cavity. There were also large areas of fat necrosis.

The calculus was very kindly analysed for me by Mr. W. Ffoulkes Lowe, A.R.S.M., F.I.C., and he reports as

Carbonate of		 	Trace Soluble			
Silica		•••	 	68 5 ·	١	
Alumina			 	18.0	l	
Ferric oxide			 	Trace	Insoluble.	
Silica Alumina Ferric oxide Magnesia	•••		 	Trace	,	
				100:0		

"There was no trace of phosphate in either the soluble or insoluble portion, and no oxalate or sulphate. The sand appeared to form a nucleus for the carbonate of lime, and the grains appeared to be coated over with the carbonate."

The case is interesting because syphilis of the pancreas is rare, and more so in the acquired than in the congenital form of the disease. When in acquired syphilis the pancreas is affected the result is usually chronic pancreatitis, whereas in the congenital form gummata generally occur In this case there were both chronic pancreatitis and gummata present.

Pancreatic calculi again are of great rarity. Dr. G. Newton Pitt 1 says that less than 100 cases are on record, and that in 11,000 necropsies at Guy's Hospital there were three cases only. They generally consist of carbonate and phosphate of lime, and carbonate of magnesia; in this case, however, the composition was extraordinary. There was no trace of phosphate and only a comparatively small ame unt of carbonate of lime, while silica and alumina composed practically the whole of the rest of the stone. The occurrence of silica in the human body is very uncommon. Thomson and Ferguson 2 report a case of intestinal sate in which the amount of silica present was 1 per cent. The only explanation I can give of the presence of silica in my case is that it may have been swallowed, for the man lived on the estuary of the Dee, and it is quite possible that in windy weather he might swallow sand in fair quantity, but why it should pass into the pancreatic duct I cannot see. Unfortunately the urine was not tested for Cammidge's reaction, as no suspicion of pancreatic disease arose during the time the man was in hospital.

Chester.

A CASE OF "STATUS LYMPHATICUS" WITH SUDDEN DEATH.

BY R. W. S. WALKER, M.B. CANTAB., M.R C.S. ENG., LATE HOUSE SURGEON AT THE GREAT NORTHERN CENTRAL HOSPITAL

THE condition described by Paltauf 3 as a clinical entity. and termed by him the "status lymphaticus," has been brought forward prominently of late in view of the frequent occurrence of sudden death during anæsthesia in persons suffering from this disease. I believe that these notes may be of interest from the mode of termination of the case. which was referable to no special exciting cause.

The patient, a male baby, came under observation at the age of 5 months, being brought to hospital for circumcision. He was small for his age and was well nourished, but was flabby and somewhat unhealthy in appearance; so, though no signs of organic disease were detected, I gave orders that he should be brought back in two months' time, since that was no urgency in regard to operation. Two months afterwards, while on my holidays, the child was brought back The mother was told to bring him again in a week's time

¹ G. Newton Pitt: Article "Diseases of the Pancreas" in Allbutt and Rolleston's System of Medicine, vol. iv., part 1, 1908, p. 314, 2 Thomson and Ferguson: Journal of Pathology and Bacteriology vol. vi. p. 334, 2 Paltauf: Wiener Klinische Wochenschrift, 1889, ii., 877, and 182, 179

when I should have returned. Four days after, while I was on duty, the child was brought in dead, and since I was unable to grant a certificate an inquest was held.

At the inquest the mother stated that the subject was the younger of twins and had been delicate since birth. He had been difficult to rear, and in comparison with the elder child had given rise to a great deal of trouble. He had never had definite symptoms of any disease, but had not grown well and was fretful and irritable. She had noticed nothing in particular wrong with him until the day of his death, when, while lying in the cradle, he suddenly became blue in the face and appeared to have a "convulsive fit." She wrapped a shawl round him and brought him straight to the hospital. She stated that she felt him move on leaving the house, but noticed no movements after this.

The post-mortem results were as follows:-The body was small for a child of 7 months, but was well nourished and presented no signs of wasting. The length was 26 inches, the weight 11 pounds. The changes found after death fell into two groups-changes associated with lymphatic enlargement, and changes connected with venous derangement. In regard to the former the thymus was hypertrophied, and instead of a weight of 11 drachms, weighed 2 ounce. There were no signs of any undue pressure on the trachea by this gland. The adenoids were enlarged, the tonsils small. There was considerable hyperplasia of the mesenteric glands, which were so pronounced as to resemble bunches of grapes. The Peyer's patches in the small intestine were markedly hypertrophied. There was but slight enlargement of the bronchial glands and of the Malpighian corpuscles of the spleen. No hyperplasia of the superficial lymphatic glands was present, and the thyroid was normal in size. was considerable engorgement of the great veins of the brain and of the neck and abdomen. The heart was normal in every respect save that there was considerable hypertrophy of the right ventricle; the pulmonary artery was not stenosed, the pulmonary valves were normal, neither was there anything suggestive of abnormality nor disease in the lungs. On section there was considerable change in the liver, which showed well-marked signs of chronic venous congestion. This was confirmed on microscopic examination. The body in every other respect was healthy and there were no signs of rickets. Microscopic section of the thymus and of a mesenteric gland showed marked hypertrophy of the lymphoid elements.

The lymphatism, with the exception of the lack of hypertrophy of the spleen, follows, I believe, the accounts of the post-mortem findings in the status lymphaticus with some detail, and the interest of the case lies in the mode of death which can be attributed to no special exciting cause, since the child was apparently lying quietly in the cradle. No signs of mechanical pressure on the trachea were found after death.

Leicester.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

JOINT MEETING OF THE MEDICAL AND SURGICAL SECTIONS.

ON Dec. 14th a joint debate was held under the presidency of Mr. G. H. MAKINS, C.B., on "The Diagnosis and Treatment of Duodenal Ulcer." The debate was opened by Mr. B. G. A. MOYNIHAN, followed by Mr. H. COLLINSON, and Sir T. LAUDER BRUNTON, Bart., Dr. W. HALE WHITE, Mr. F. S. EVE, and Mr. HERBERT WATERHOUSE took part in the discussion, which was adjourned on the motion of the last speaker. We shall publish an account of this important debate after it has been concluded.

CLINICAL SECTION.

Gumma simulating Malignant Discase. - Exhibition of Cases. A MEETING of this section was held on Dec. 10th, Mr. A. PEARCE GOULD being in the chair.

Mr. H. J. PATERSON read a short communication on a case of Gumma of the Breast simulating Malignant Disease. He said that a woman, aged 26 years, was admitted into the London Temperance Hospital under his care in November, 1901, suffering from a swelling in the right the casts. - Dr. POUNTON referred to some cases published in

breast. The patient stated that she had noticed a swelling in the right breast for three months. She had suffered little or no pain, but had lost flesh considerably. She was thin and extremely anæmic and looked very ill. Occupying the whole of the upper and outer quadrant of the right breast was a hard, somewhat irregular swelling, not adherent to the skin or deep fascia, but apparently sending processes into the surrounding breast tissue. No glands were felt in the axilla. He thought that the swelling was a rapidly growing sarcoma. Under chloroform he incised the swelling. It was densely hard and macroscopically and from its feel on cutting appeared to be a carcinoma, but a piece was frozen and examined microscopically in the theatre and reported to be a sarcoma. Accordingly, he sutured the exploratory incision and performed a Halsted's operation. The patient's general condition did not improve after operation and she remained extremely anæmic. Two weeks later the suture holes became ulcerated and small red nodules appeared in the surrounding skin. Gradually the skin bordering on the line of incision became brawny and indurated, and then ulcerated. After she left the hospital the ulcerated area slowly spread, and the axillary and supra-clavicular glands became enlarged. 14 weeks after the operation he noticed a smooth, hard swelling on the sixth rib in the axillary line. Thinking that this was probably a gummatous periostitis he put the patient on mercury and iodide of potassium. The swelling on the rib quickly disappeared, and in a few weeks the ulcerated area had completely healed. Fresh sections of the breast swelling were cut, and examination of them proved that the swelling was inflammatory, probably a gumma. He saw the patient about three years after the operation, and she was then in excellent health. After that he lost sight of her, and had been unable to trace her. The case was of interest not only on account of the difficulty in diagnosis, but on account of the rarity of gummatous disease of the breast. The rapidity of growth, the absence of enlarged glands, the age and general condition of the patient, led him to think that the case was one of sarcoma, a view supported by the microscopical examination of a piece of the swelling made at the time of the operation, although from the naked-eye appearance and character of the incised swelling he thought that it was a carcinoma. The patient did so badly after the operation that he feared she had secondary visceral deposits and that the operation would not benefit her much. The occurrence of periostitis of a rib gave a clue to the real nature of the case, and appropriate treatment speedily brought about a cure. As is so often the case, there was no history or other evidence of previous syphilitic disease.

Dr. McMullen showed a female patient, aged 62 years, suffering from Adiposis Dolorosa. There was a history of harmatemesis. The condition was first noted five years ago, and was then localised to one arm and circumscribed, but it spread rather rapidly. The changes were preceded by, and associated with, pain along the nerve trunks and hyperæsthetic skin areas. At present the upper segments of both arms, the back, and the sternal region were involved. Thyroid extract had been administered with a moderate degree of improvement.-Dr. A. M. Gossage described a case in which the patient seemed to be about the average from a mental point of view. Mr. V. WARREN Low emphasised the point that pain might precede the changes in the condition.—Dr. Leonard Williams pointed out that the disease occurred in women after the menopause.—Dr. F. J. POYNTON discussed the treatment of these cases by thyroid. and Sir DYCE DUCK-WORTH said that there was no doubt that the condition was affected by thyroid treatment and advised that the medicament should be taken at night. - Dr. J. GALLOWAY commented on a type of the disease in which there was unusual vaso-motor disturbance.—Dr. PARKES WEBER spoke on the nomenclature and incidence of the disease, and Dr. MCMULLEN replied.

Dr. W. P. HERRINGHAM demonstrated a case of Rheumatoid Arthritis with Albuminuria and with great enlargement of the liver. The patient was a boy, aged 15 years, who had been in hospital several times since November, 1905. In 1907 the liver was not enlarged. When admitted last June he was found to have the liver greatly enlarged, reaching as low as the right iliac crest; it was smooth, hard, and painless. No amyloid reaction with iodine had been seen in

THE LANCET in which definite lardaceous changes had been found.-Dr. PARKES WEBER said that in nine out of ten cases the enlargement was fatty.—Sir DYCE DUCKWORTH advised full doses of iodide of potassium for the patient, and Dr. H. D. ROLLESTON said that there was a toxemia in Still's disease which gave rise to nephritis, and that lardaceous disease was known to be due to toxemia of various kinds, especially the suppuration of syphilis; therefore, in exceptional cases toxemia in Still's disease might give rise to a lardaceous condition of the kidney and liver instead of nephritis.

The following cases were shown :—

Dr. J. R. Lunn: A case of Acromegaly.

Dr. R. MILNE: A case of Acromegalic Gigantism, and two cases of Achondroplasia.

Mr. A. CARLESS: Impaction of Large Calculus in the Lower End of the Right Ureter.

Mr. W. G. SPENCER: A case of Trephining for General Epilepsy.

Dr. F. J. POYNTON: Two cases of Congenital Œdema with Cardiac Defect in Mother and Daughter.

Dr. J. W. THOMSON WALKER: A case of Resection of the Bladder for Malignant Disease.

Mr. C. J. SYMONDS: Excavating Rodent Ulcer of the Face under Treatment by Radium.

Mr. A. SMITH and Mr. J. McDonagh: A case of Pachydermatocele.

Mr. F. S. Eve: Arterio-venous Aneurysm with Exophthalmos following an injury to the head; a case of Partial Luxation of Odontoid Process; and a case of Transverse Fracture of both Patellæ, with much separation of fragments, treated by_operation.

Dr. PARKES WEBER: A case of Recklinghausen's Disease and a patient a few months after omentopexy and peritoneal drainage for Chronic Ascites connected with Hepatic

Mr. C. A. BALLANCE: A patient on whom he had performed the operation of Trephining after Fracture of the Base of the Skull.

Mr. J. D. MALCOLM showed a patient who had undergone Cholecystduodenostomy for Acute Emaciation. The nutrition of the patient had steadily improved since the operation.

LARYNGOLOGICAL SECTION.

Exhibition of Cases and Specimens.

A MEETING of this section was held on Dec. 3rd, Dr. J. DUNDAS GRANT, the President, being in the chair.

The PRESIDENT showed the two following cases: 1. A case of Secondary Specific Pharyngitis in a woman aged 22 years, who, although quite healthy looking, had been sent to Brompton Hospital as presumably suffering from tuberculosis. On both faucial pillars there was symmetrical superficial ulceration, more marked on the left side, and of two months' There was neither history of syphilis, rash, nor post-cervical glandular swelling. Scrapings from the diseased surface revealed spirochæta pallida. 2. A man, aged 41 years, who was a considerable smoker, and showed a peculiar Erythema of the Soft Palate of three months' duration. A bright red rash was distributed over the soft palate, the hard palate having a white sclerotic appearance. In the discussion an opinion was expressed that the condition might be due to pyorrhœa alveolaris, which was also present. The patient had been in the habit of smoking 2 ounces of tobacco a week from a short pipe.

Mr. W. H. Kelson showed a case of Frontal Sinus Disease with Necrosis in a man aged 33 years. A year ago the patient was operated upon for suppuration in the left maxillary antrum, and immediately afterwards, owing to swelling in the frontal region, the anterior necrosed walls of the sinus and large sequestra were removed therefrom. Since then several small portions of dead bone have been removed.

Mr. H. BETHAM ROBINSON showed a man, aged 63 years, with a Flattish Ulcer creeping from the inner side of the left arytenoid cartilage on to the posterior part of the left cord, the posterior two-thirds of which showed some heapedup granulations, leaving the left side free. Mobility was normal. The right cord was healthy. The suggested diagnosis was senile tuberculosis.

belly) breathing on the stresses, strains, and frictions in the throat and larynx, more especially of the cricoid cartilage on the spinal column, and also the transverse axis of respiratory rotation of the cricoid on the thyroid cartilages. Dr. Spicer explained in detail how he arrived at the conclusion that the basic factor in causation of disease in the human body, and the production of disorders of the nose, throat, larynx, and voice, was the manner in which the respiratory function was nsed.

Mr. HERBERT TILLEY showed the two following cases: 1. Tuberculous Ulceration of the Epiglottis treated by amputation of the diseased portion. The patient was a man, aged 43 years, who, in March, 1907, had suffered slight pain on swallowing, loss of flesh, and profuse sweating at night. He also had physical signs of pulmonary tuberculosis with evening rise of temperature. The stump of the epiglottis was now quite healed and the patient had gained nearly three stones in weight since the operation. 2. The larynx of a man, aged 78 years, whose right vocal cord was removed for Epithelioma in September, 1896. From that time the patient enjoyed good health till a month ago, when he succumbed after tracheotomy performed (in other hands) for dyspnæa. A well-developed epitheliomatous ulcer now occupied the left cord, the original right cord and arytenoid remaining quite healthy.-In the discussion the generally expressed opinion was that this was a clear case of reinfection after recovery from the original disease.

Dr. STCLAIR THOMSON showed a case in which there had been Complete Stenosis of the Larynx after Diphtheria (for which tracheotomy was performed) in a boy when aged 1 year and 2 months, but complete recovery had now been obtained by intubations spread over three years. Dr. Thomson's object in showing the case was to illustrate (1) how laryngeal stenosis from diphtheria might occur, even although a satisfactory low tracheotomy had been carried out; and (2) the success of the latter in complete occlusion of the glottis when combined with intubation, the result being seldom equalled by laryngo-fissure and laryngo-tracheostomy.

Dr. G. WILLIAM HILL showed two cases treated by application of radium bromide. The first patient had suffered from a malignant tumour of the neck which manifested continued decrease of the swelling after the application of 50 milli-grammes for 22 hours. The second patient, who suffered from carcinoma of the gullet, had received six applications since July last, and could now swallow almost anything, instead of only purées and other liquids as formerly.

Other cases and specimens were shown by Mr. CHARTERS J. SYMONDS, Dr. GEORGE C. CATHCART, Mr. HAROLD S. BARWELL, Dr. W. S. SYME, Dr. JAMES DONELAN, and Mr. P. R. W. DE SANTI.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION.

Phosphorus Poisoning.—The Lactic Acid Bacillus.

MEETING of this section was held on Dec. 7th. Professor A. R. Cushny, the President, being in the chair. Mr. H. WIPPEL GADD read a report upon Kangalugi Root.

Mr. R. G. HANN and Dr. R. A. VEALE contributed at account of a case of Phosphorus Poisoning, and showed pathological specimens obtained therefrom. The drug had been taken as an abortifacient, and besides the more usual fatty degeneration the viscera showed numerous larg-hæmorrhagic extravasations. In addition there were enormous subcutaneous hæmorrhages covering a large part of the superficial extent of the body.

Dr. GEORGE HERSCHELL opened a debate upon the Therapeutic Value of the Lactic Acid Bacillus. He emphasised the necessity of selecting suitable cases and of using an active preparation, and said that only two or three of the solid preparations on the market contained the Bulgarian bacillus The conditions suitable for treatment were those where there was abnormally great putrefaction of proteids in the alimentary canal, with auto-intoxication from the colon. No good results were to be expected where the symptoms were due to an excessive fermentation of carbohydrates. He had met with marked success in the treatment of the former cases.—Dr. F. W. GOODBODY said that he had searched for evidence on the chemical side of good results, but had met. to a great extent, with negative results. Aromatic sulphates were not appreciably diminished .- Dr. VAUGHAN HARLEN Dr. Scanes Spicer showed a model to illustrate the said that he agreed with the opinion of Dr. Goodbody variation in effect of costal (or back) and abdominal (or The evidence of changes in the composition of the

fæces was disappointing, considering the improvement which had occurred in the symptoms. He thought that these good effects were psychological in origin. His experience was that improvement occurred in functional dyspensias but not in those that were associated with organic change.—Dr. W. BULLOCH said that he had examined over 20 specimens of the tablets placed on the market and none had showed the presence of active bacilli. They might be each and all discarded as worthless.—Dr. J. W. H. EYRE said that working with his own strain of bacilli he had had success in treating certain infections of the colon with pathogenic bacteria. Successive cultivations from the fæces had shown rapid diminution of the pathogenic micro-organisms. - Dr. ROBERT HUTCHISON expressed himself as profoundly sceptical of the good results claimed, and this feeling was strengthened by what he had just heard. To diminish intestinal putrefaction he would rather trust to small doses of calomel. He hoped that the discussion would go far to suppress a dangerous craze.—Dr. C. H. MILLER said that he had used the method in a series of cases of rheumatoid arthritis. The arthritis benefited little, but the general health of the patients improved greatly.—Dr. A. F. HERTZ said that he was sceptical of the existence of auto-intoxication from the bowel. He related a case of streptococcal infection of the bowel which had resulted in rapid recovery when soured milk was Simultaneously the streptococci disappeared from the He thought that such bacterial control was necessary.—Dr. W. Langdon Brown said that he had certainly seen indicanuria disappear during treatment by this means.

SECTION OF AN ESTHETICS.

Lymphatusm.

A MEETING of this section was held on Dec. 3rd, Mr. RICHARD GILL, the President, being in the chair.

Mr. H. BELLAMY GARDNER and Dr. R. SALUSBURY TREVOR communicated a paper on Lymphatism, with specimens and lantern illustrations. The importance of the subject as bearing upon the explanation of sudden death in children and adults was pointed out. The normal weight of the thymus gland, according to Dr. L. S. Dudgeon's researches, was stated to be from 7 to 10 grammes. The fluid expressible from the gland post mortem was normally sterile and of an acid reaction. Dr. McCardie had stated that Paltauf in 1889 first pointed out that many cases of sudden death, otherwise unexplained, were found post mortem to have enlarged lymphatic glands, enlarged thymus and spleen, hypoplasia of the aorta, and swelling of solitary follicles of the intestine and of Peyer's patches. In infants and young children death was often preceded by fits of stridor, and ended in sudden asphyxia; in older children and adults respiration ceased without obvious dyspnœa, and the heart failed immediately. Enlarged thymus was often also found in association with rachitis, exophthalmic goitre, myasthenia gravis, and leukæmia. Photographs of frozen sections of the normal newborn infant were shown to demonstrate the position of the thymus gland in relation to the œsophagus, trachea, innominate artery and aorta at the levels of the sixth cervical, first, third, fourth, and fifth dorsal vertebræ respectively. Six cases of sudden death presenting enlarged thymus gland and general lymphatism were then related. 1. A boy, aged 13 months, died suddenly while a physician was at the bedside. There was no sign of asphyxia. Respiration and circulation stopped simultaneously. 2. An infant, aged 9 months, with recently healed eczema, died within an hour after onset from tracheal stridor, with asphyxial symptoms. 3. An adult, aged 29 years, a congenital imbecile, died suddenly in a tepid bath from respiratory and circulatory failure. 4. A female, aged 30 years, who died suddenly under a local ansesthetic (tropacocaine) for the removal of a small cyst in the neck. Respiratory cessation; no dyspnœa. Heart failed later. 5. A male, aged 14 years, died at the third inspiration of ethyl chloride given for the adenoid operation. There was no respiratory obstruction. Respiration failed first, and then the heart. 6. A male, aged 13 years, died during an operation for adenoids and tonsils under C1E2 mixture. There was no respiratory obstruction. Respiration ceased while the corneal reflex persisted. This negatived overdose of anæsthetic. The circulation failed rapidly. The thymus weighed 56 grammes. There were enlarged

lymphatic glands in the infra-tracheal group, mesentery, and inguinal regions, enlarged Peyer's patches and solitary follicles throughout the intestine. This was a grossly marked case, and was illustrated by 12 lantern-slides of the parts affected, explained and demonstrated by Dr. Salusbury Trevor. A history of chronic eczema, a severe attack of measles, and abscess in the middle-ear were afterwards disclosed. A chronic toxemia had been suggested as the cause of the general lymphatism by several writers. Gallois has suggested that this was a mild septi-cæmia due to swallowed muco-pus from the naso-pharynx. In the present state of knowledge these sudden deaths presented a problem worthy of most active research on the part of the medical profession. The means of diagnosis pointed out by A. S. Warthin might apply in well-marked cases—i.e., percussion of the thymic area over the manubrium sterni, yielding unusually wide dulness, radiographic examination for wide thymic shadow above the heart, palpable cervical, axillary, or inguinal glands. Mr. Bellamy Gardner particularly dwelt upon the importance of discovering (1) the cause of these sudden deaths; (2) in what subjects to suspect lymphatism; (3) how to diagnose it; (4) how to treat it; and (5) how to safely conduct anæsthesia in such subjects.

Dr. DUDLEY W. BUXTON said that the subject of the status lymphaticus in its relation to deaths under anæsthetics was complicated by the fact that great confusion existed in the clinical records of such cases. The physical signs were so confusing that one was led to believe that the conditions called lymphatism, thymic death, and thymic asthma were, in fact, variants from some common dyscrasia, the nature of which was at present unknown. Theorising was inevitable, and the theory that these conditions were but symptoms of different stages of some toxemia, probably a lymphotoxemia, appeared to the speaker to supply the best explanation of the central malady. The mechanical theory of death was certainly untenable, as cases in which definite pressure by the thymus like those in which thymic asthma existed presented such well-marked symptoms that any general anæsthetic would be withheld. The cases in which no symptoms existed, but which revealed lymphatic hyperplasia, varied in degree and no doubt were very common. Until they knew the incidence of such conditions in persons who survived anæsthetics they could not say whether they were indeed more likely to die during narcosis. He suggested that a subcommittee should be appointed to study the subject. What appeared to be clear from the record of the cases of death under anæsthetics was that the patients were suffering from a depressed vitality, the signs of which Dr. Buxton enumerated, and that their blood pressure was abnormally low,

exceptionally weak vapours and always supplying oxygen with them. Cases were on record in which the patient who eventually died under chloroform had survived it many times Probably in the one instance more, and in the others less, powerful vapours had been employed. thought that all persons who conceivably were of this dyscrasia should be dealt with on the lines indicated, whether they appeared robust or as in the exophthalmic goitre cases they gave evidence of definite disease which probably interfered with normal respiration. It was safer to assume a disease which might not be present than to overlook one which presented no clear objective signs.

due in part to the state of the heart muscle. Myocardial

disease was a constant accompaniment of, if not a part of,

lymphatism. It followed that these persons could not take the usual and safe strength of chloroform without grave

risk. Asphyxial complications, trivial in most cases, caused

serious results in them. Hence his insistence upon giving

Dr. LEONARD WILLIAMS believed that status lymphaticus was due in most cases to a want of work on the part of the thyroid gland, and that the other minor glands were enlarged to make up for the lack of efficiency of the thyroid.

Dr. B. H. SPILSBURY said that too much emphasis had been laid on the size of the thymus gland; a thorough microscopical examination of the structures was essential, the naked eye appearances not being sufficient evidence on which to form a diagnosis. The heart muscle was always degenerated to some extent in these cases, either fatty degeneration or brown atrophy, or a combination of the two being an essential feature of status lymphaticus. Dr. Spilsbury denied that the condition was necessarily congenital; in some cases he had

found distinct evidence that the thymus gland had atrophied in the ordinary way during childhood and grown again later in life. Of all the cases of death during anæsthesia in which he had made a post-mortem examination about 75 per cent. had shown signs of status lymphaticus, and this condition is, in his opinion, a more important factor in causing death than the anæsthetic employed.

Dr. F. W. Hewitt said that before putting deaths down to status lymphaticus, they ought to consider whether the individual cases could not be explained on other grounds. In many cases an asphyxial factor was present before the sudden death occurred; but this might be so slight as to pass unobserved. He did not think that the heart was really an important factor in causing death. If the respiration was kept absolutely free, and the amesthesia was not too profound, it was nearly always possible to avert an accident.

MEDICAL SOCIETY OF LONDON.

Anatomy of the Heart .- Auricular Fibrillation.

A MEETING of this society was held on Dec. 13th, Dr. SAMUEL WEST being in the chair.

A paper by Professor ARTHUR KEITH and Dr. IVY McKenzie, entitled "Recent Researches on the Anatomy of the Heart," was communicated; this will be published in full in a forthcoming issue of The Lancet.

Dr. Thomas Lewis delivered an address on Auricular

Fibrillation and its Relationship to Complete Irregularity of the Heart as it Occurs Clinically. He spoke of the two groups of cases with which complete irregularity is particularly associated—namely, advanced mitral stenosis and general degeneration of the cardio-vascular system. He gave the general clinical features, the type of sphygmographic tracing, the venous pulse curve, and laid particular stress on the absence of all signs of normal auricular contraction. He then referred to certain phenomena indicating activity of the auricle, more particularly hypertrophy of the auricle, found at necropsy, and the reappearance of signs of normal auricular contraction in paroxysmal cases of the affection at the time when the normal rhythm returns. He next turned to the electro-cardiographic evidence of the condition. The change from the normal type of curve to that of the type met with in complete irregularity was described. It was stated that in this condition the curve consists of two parts, one attributable to ventricular activity, and the remainder of the curve was constituted of irregular waves the result of auricular activity and replacing the normal auricular peak. These waves are known to result from auricular activity because they appear in their maximal form when leads taken directly from the chest wall lie directly above the right or superficial auricle. The pure ventricular curve can be similarly obtained by leads suitably placed in relation to the left ventricle. Dr. Lewis referred to two forms of auricular activity-coördinate and incoördinate. He noted the evidence for the absence of coordinate contraction, and concluded that incoördinate contraction was present as the result of the information afforded by these direct leads. Finally, a comparison was made between the records yielded by complete irregularity in man and auricular fibrillation in the dog. 1. Dealing first with the radial pulse, the following features in common were described : complete irregularity, increased rate, and an absence of relationship between the size of the beats and the pauses preceding them.

2. He dealt next with the venous curves, and showed that in both dog and man a ventricular form is present and small oscillations of pressure occurring in the veins are common to both when the pulse is slow. 3. He next compared the electric cardiograms from the two conditions. Slides were shown demonstrating how identical the curves were from dog and man, and the following special features which the curves presented in common were emphasised: the presence of the first ventricular variation R., showing the supra-ventricular origin of the beat in each case, its increase in size as compared with the normal condition, the absence of relationship of its height to preceding pauses and to sizes of corresponding arterial beats, and the presence of the curious waves replacing the normal auricular waves, waves which can be directly shown to proceed from the fibrillating auricle in the case of the dog.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

President's Address.—Hypertrophic Cirrhous of Liver with Alcoholic Paralysis.—Exhibition of Specimens.

A MEETING of this section was held on Nov. 12th, Mr. A. H. BENSON, the President, being in the chair.

The President delivered an address on the subject of Trachoma.

Dr. H. C. DRURY read notes of a case of Hypertrophic Cirrhosis with Alcoholic Paralysis, the patient being a large stout woman, aged 42 years. She had had 20 pregnancies, with 13 living children and 7 miscarriages, these latter having been irregularly distributed between the live births. There was no history or evidence of syphilis. She was admitted to hospital in a state of alcoholism, and she had an alcoholic history. She complained of weakness and "pins and needles" in her feet and hands. There was an abrasion on both knees from her legs having "given under her" on getting out of bed. Her mind was quite clear. The lungs were healthy. The heart was strong and regular, but there was a mitral systolic murmur. There was not, however, any evidence of failing compensation. The movements of the limbs were good. and the hands could be fully extended, but the muscular action was weak. The muscles of the arms, especially of the extensors, were painful to pressure; those of the legs were in a similar condition, and attempts at voluntary flexion caused pain in the calf. The reflexes were absent, while sensation, though perverted, was still present. It was evident that the patient was in an early stage of peripheral neuritis. This gradually developed from day to day until there resulted complete "drop wrist" and "drop foot." She could draw her legs up in bed, but could not extend them again. The abdomen was very large and pendulous; at the umbilious was a tumour of about the size of a hen's egg, which was the empty thickened sac of an old-standing umbilical hernia. The liver and spleen were both greatly enlarged; there was no ascites. Jaundice was present, the conjunctivæ being of a bright yellow colour, but the colouration of the skin was such that it might easily escape notice. The urine was high coloured and clear, without albumin or sugar; it gave the iodine reaction for bile. The fæces were lighter than normal in colour, but contained bile colouring matter. The liver was very large, reaching in the parasternal line more than two hand breadths below the lower border of the ribs. It was readily palpable, being smooth and firm, with a sharp hard margin, but of normal shape, and painless. Simple hypertrophy was excluded by the extreme firmness of the organ and the remarkable sharpness of the edge; it was, moreover, larger than was likely to be the case in simple fatty liver. Amyloid disease was excluded by the absence of any cause for such, the history of the pregnancies being alone sufficient to preclude syphilis. All the symptoms indicated hypertrophic or biliary cirrhosis. The patient had a continuous but quite irregular febrile temperature for some five days, and then (Oct. 10th developed a profuse diarrheea without assignable cause She became rapidly weak, fell into a heavy lethargic or sent comatose state, and died rather suddenly on Oct. 24th. The great enlargement of the liver having the characters already described, the enlarged spleen, the jaundice without ascitethe irregular pyrexia, the profuse diarrhœa, the bile-coloure fæces, and the great asthenia passing into semi-coma and death, together produce the clinical picture described if Hanot, which has been named hypertrophic, or biliary. insular cirrhosis of the liver.

Professor A. C. O'SULLIVAN gave the following account the post-mortem appearances: "The liver weighed? pout 11 ounces. The increase in size was fairly uniform in but 11 ounces. The increase in size was fairly uniform in the side to side. Its capsule was somewhat thickened; it we finely granular on the surface and of a light greenish-yellow. On section, the connective tissue was seen to divide liver up into small areas about as big as, or smaller that a lobule. Under the microscope there was a great quant of connective tissue arranged on the whole with a tender to surround lobules. It also sent delicate strands everywhere in between the liver cells. There was extensive facilities.

infiltration and the liver was stained green in places with bile pigment. The connective tissue outside the lobules contained great quantities of newly-formed bile ducts. A section of the external cutaneous nerve showed extensive degeneration, all the larger fibres being degenerated; the myelin and axis cylinders were broken up and the nuclei of the sheath were increased."

Dr. J. B. COLEMAN exhibited Viscera of a woman, aged 34 years, who died with symptoms of gangrene of the lungs, consecutive to perforated gastric ulcer, the sinuous track of which led, by a perforation in the diaphragm, into an abscess cavity between the diaphragm and the base of the left lung. The lower lobe of that lung contained several abscesses and gangrenous areas.

SECTION OF MEDICINE.

Spleno-medullary Leukamia. - Sane Hallucinations.

A MEETING of this section was held on Nov. 26th, Dr. WALTER G. SMITH, the President, being in the chair.

Mr. MAURICE R. J. HAYES read a paper on Spleno-dedulary Leukæmia Treated by X Rays. The case was that medullary Leukemia Treated by X Rays. The case was that of a woman, aged 42 years, married, no children. Symptoms directly referable to her disease began in August, 1906, but the enlargement of her spleen was first apparent in December, 1908. In February, 1909, when X ray treatment was commenced, she was very animic and wasted; she suffered much from breathlessness and palpitation, her legs were swollen and she had hæmic murmurs. Her spleen extended for two inches to the right of the middle line, for three inches below the umbilicus, and to the level of the crest of the left ilium. The liver was slightly enlarged; there were no enlarged lymph glands. For purposes of irradiation the superficial area of the spleen was divided into four circular areas, 10 centimetres in diameter, and each one was exposed in turn, a hard tube being used. The average duration of each exposure was 18½ minutes. From Feb. 20th to Nov. 25th, 1909, 22 exposures were given. She had no treatment during July, August, September, and October, when she felt very much improved and was able to perform her household duties. Her spleen had reduced in size till it was palpable for 2½ inches below the left costal arch, and it was freely moveable. Palpitation, breathlessness, and cedema had disappeared, and she looked very well; the anæmia was better. In the end of October her symptoms returned, and X ray treatment was resumed in November, to which she is responding. She has had no medicinal treatment whatever for her disease. She at no time in the course of treatment suffered from any general or local symptoms which might be referred to the X ray, save a slight dry dermatitis in April, when irradiation was suspended for three weeks. The reports on the blood-films, which were examined by Professor E. J. McWeeney and Dr. W. D. O'Kelly, are as follow:-

		Reds.	Whites.			Myelocytes per cent.		Hæmo- globin per cent.		
Feb. 15th		3,100,000		566,000		20 o	whites		60	
March 1st	• • • •	_		704,400		-		•••		
,, 23rd		3,528,000		209,333	•••	10	••		63	
April 5th		4,368,000		197,000		17	,,	•••	58	
,, 24th	•••	4,224,000		172,000		7.3	••		63	
June 21st		5,072,000	•••	3 6,000		8	,,	•••	75	
Nov. 15th		3,488,000		168,750		14:3	**	•••	77	

-The President, Dr. E. J. M. Watson, Professor McWeeney, Dr. W. G. HARVEY, and Dr. C. M. BENSON discussed the case. Dr. A. R. Parsons quoted a case of his own which was almost identical with Dr. Hayes's case. She was 55 years of age, and had had a prolonged course of arsenic without any improvement. The condition of her white cells was almost identical at the end of the treatment with what it had been at the beginning. After the tenth or twelfth application of the X rays a marked improvement took place in her blood, and the spleen decreased to such an extent that it was almost impossible to palpate it. She went away feeling perfectly well but returned within a year's time with the spleen increased and a relapse in the condition of the blood. She again received benefit from the rays but died in six months. It was quite certain that the rays effected a diminution of the spleen, but how it was brought about he did not know. The improvement in the blood was not brought about by the destruction of the white cells, although the rays might inhibit their formation.

Dr. R. J. ROWLETTE said he had performed a postmortem examination last year on the body of a patient who had died from heart disease while under X ray treatment. The leukamia was discovered when she was put to bed in hospital, and as far as it was concerned she had improved considerably. In the microscopic examination of the spleen he did not find any of the patches which were said to be typical of the disease, and it was possible that the X rays had caused their disappearance.

Mr. HAVES, in reply, said he believed the woman's present condition to be due altogether to the X ray treatment. Out of 63 cases collected as treated by the rays only four were alive in from three to six years after the primary symptoms, so that it did not promise very well for the patient.

Dr. W. R. Dawson read a patient's autograph account of Sane Hallucinations.

Medico-Legal Society.—A meeting of this society was held on Nov. 23rd, when Dr. J. E. Risien Russell read a paper on the Effects of Traumatism upon the Nervous System. Although he did not include the effects of gross lesions of the nervous system, he did not confine his remarks to the subject of traumatic neurasthenia, but rather attempted to show that although no evidence of structural damage of the nervous system might be determined immediately after an accident, subsequent changes might take place in the nervous system which could give rise to signs which are regarded as evidence of organic disease. The way in which these symptoms and physical signs developed after an accident made it difficult to escape from the belief that the altered condition of the nerve elements is the outcome of the accident. He emphasised the fact that the symptoms of traumatic neurasthenia might follow an accident of the most trivial kind, and considered that the conditions under which the accident is sustained have more to do with the result than the actual severity of the injury, provided no actual structural damage has been done to the nervous system. In short, the mental shock sustained is an important factor in the production of the symptoms. In his experience the age of the patient and the state of the blood-vessels are other important factors which often influence the prognosis unfavourably, but nothing is more difficult than to say how long a case of traumatic neurasthenia is likely to take to get well, even after trivial injuries. How far antecedent disease should be allowed to influence the question of compensation was next considered, as was the question of how far a plaintiff for damages would prejudice his case by refusing treatment. He supposed that there could be no doubt as to the result if it could be shown that the claimant deliberately aggravated his condition by some wilful neglect or similar act, but the refusing of treatment could not be viewed in the same way, for it was conceivable that the suggested treatment might not only be uncongenial to the patient but actually harmful to his condition. He advocated the Weir Mitchell or "rest-cure" treatment in these cases, and advised that, when possible, the treatment should be conducted in homes in the country devoted to the care of nerve cases, and was further of opinion that there is great advantage in placing such patients under the personal influence of a resident medical officer whose whole time could be given to the care and management of the patients. Admirable as was this treatment, it could not be said that a course of the kind for a certain number of weeks or even months would necessarily result in cure, for he had known many cases in which no question of compensation arose and in which, nevertheless, prolonged treatment on this and other approved lines failed to bring about improvement in the patient's condition. Dr. Russell next dwelt on the importance of being able to recognise the features of a malady that could not be reasonably ascribed to an accident and which may have existed before the injury and which, even if it had developed subsequently, must yet be regarded as independent of the trauma. Although organic changes could result from injuries to the nervous system, the clinical picture of a very few diseases could be thus established, so that the determination of certain diseases made it impossible to associate the injury with them as cause and effect. In conclusion, he advocated the extension of the system of consultations between the medical men who appeared on the opposite sides before the case came into court, and he hoped that it might be found

possible for the society to use its influence to promote what he considered was a much needed reform in regard to medical evidence in the courts of law. He spoke in complete ignorance as to what was possible in this way, but he could not help feeling that it would be a good plan if medical assessors could be appointed to assist the judge and jury in their deliberations in cases in which medical evidence was called. There could be no doubt that this reform would be of great advantage to the medical profession, and he believed that it would also be of advantage to the public, but he could not, of course, venture to express an opinion as to how the legal profession would view any such alteration of the present mode of procedure.

MANCHESTER MEDICAL SOCIETY.—A meeting of this society was held on Dec. 1st, Mr. W. Coates, the President, being in the chair.—Dr. E. S. Reynolds read a communication on the Importance of Rectal Examination in Medical Practice, referring only to those cases in which symptoms were not obviously due to rectal mischief but in which rectal examination was essential before a correct diagnosis could be made. He alluded specially to three groups of cases and related illustrative examples: (a) Profound and even fatal progressive anæmia due to slight but repeated rectal hæmorrhages; (b) malignant disease of the rectum or in the pelvis; and (o) pelvic abscess secondary to appendicitis.-Dr. J. Barnes Burt read a paper on the Etiology of Heberden's Nodes, which was an attempt to prove that Heberden's nodes are compensatory changes brought about by the constant use of the terminal phalangeal joints when the ligaments of those joints are weakened by disease or degeneration. The paper comprised:
(a) A description of the five different views relating to
the origin and clinical significance of Heberden's nodes. (b) An analysis of 40 consecutive cases showing the following points: (1) Heberden's nodes occasion a variety of conditions which are in no way connected with one another; (2) they are always preceded by some condition which leads to weakening of the joint ligaments; and (3) the more the joint is used the greater the liability to these nodes. Thus if the ligaments are weakened constant use of the terminal phalangeal joint leads to the last phalanx being tilted backwards because opposition to the thumb is the chief action of this phalanx. The posterior margins thus receive an extra degree of pressure and will therefore hypertrophy, the pressure being intermittent. The hypertrophy of the most prominent portions of the margins forms Heberden's nodes; in other words, Heberden's nodes are compensatory changes. Chronic gout, rheumatoid arthritis, senile degeneration, and wear and tear may all be important factors in the production of this disease; but just as hypertrophy of the heart is a compensatory change occurring in a variety of conditions so Heberben's nodes are a compensatory change and not a sign of one specific disease. - Dr. H. H. McNab read a paper on the Importance of Early Treatment in cases of Convergent Strabismus, pointing out the value of Claud Worth's researches and emphasising the necessity of curative measures being undertaken at the earliest possible date after the appearance of the squint.

United Services Medical Society.—A meeting of this society was held on Dec. 8th at the Royal Army Medical College, Grosvenor-road, S.W., Lieutenant-Colonel W. G. Macpherson, C.M.G., R.A.M.C., being in the chair.— Fleet-Surgeon F. H. A. Clayton, R.N., read a paper entitled "Notes on Seven-day Fever of Eastern Ports: its Occurrence in the Navy and its Relationship to Dengue." It was pointed out that so far as the navy is concerned Bombay was the principal source of cases of fever of this particular type. A brief sketch of the symptoms and of such facts bearing on causation as are at present known was given and the results of investigation into its occurrence in the East Indian Squadron for a period of ten years were then detailed. This showed that in the Naval Defence Flotilla permanently stationed at Bombay outbreaks seemed to occur at almost any time of year and were apparently chiefly dependent on the supply of susceptible individuals. In the smaller ships, on the other hand, which were docked for a considerable time, outbreaks always coincided with docking, and the possibility of its occurrence seemed to vary with the length of time in dock and the number of white men on board. The larger ships in Bombay harbour for considerable periods but only docking for a few days

were practically immune except in one instance. The analogy which existed therefore between the occurrence of this disease and that of malaria in ships was then discussed, and the conclusion arrived at that the facts suggested convection by blood-sucking flies. Various points which might appear to argue against this conclusion were dealt with, and the history of an outbreak in 1907 was given which offered some support to it. The question of the variety of fly likely to be responsible was discussed, and C. fatigans was, on the whole, held to be the most probable. The second part of the paper was devoted to a consideration of the Relationship of Seven-day Fever to Dengue. The history of the disease was briefly related and Megaw's papers were referred to. Instances were given of the occurrence at the termination of epidemics of cases having some of the characteristics of both diseases, and a history of an outbreak was then related in which what appeared to be originally seven-day fever assumed, following on the change of locality, many of the chief characteristics of epidemic dengue. In the concluding part of the paper reference was made to some of the possible factors which operate in the conversion of the sporadic to the epidemic form of dengue. The final conclusions come to were—that on the whole naval experience suggested the convection of seven-day fever by a biting insect, possibly C. fatigans; that the disease is in reality a sporadic form of dengue, its epidemic extension being promoted by certain unrecognised factors.—In the discussion which followed it was generally agreed that a good case had been made out for regarding seven-day fever as a sporadic form of dengue. Questions were asked as to the character of the pains, the occurrence of the rash, the prevalence of seven-day fever on the China station, whether observations on the Widal reaction bad been carried out in cases of the disease, and if immunity followed attack.— Among the speakers were Major W. S. Harrison, R.A.M.C., Lieutenant-Colonel Sir W. B. Leishman, R.A.M.C., Major S. L. Cummins, R.A.M.C., Fleet-Surgeon J. A. Keogh, R.N., Deputy Inspector-General S. T. O'Grady, R.N., Staff-Surgeon M. H. Knapp, R.N., Staff-Surgeon R. St. G. Bond, R.N., and the President.—Fleet-Surgeon Clayton replied and the proceedings terminated with a hearty vote of thanks

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL Society.—A meeting of this society was held on Nov. 26th, Dr. J. B. Hellier, the President, being in the chair.—Mr. Leonard A. Rowden read a paper, illustrated with lantera slides, on the X Ray Diagnosis of Renal Calculus. He dwelt on the importance of using a fluorescent screen and not a photographic plate for the purpose of diagnosis, pointing out that if the plate alone was relied on, many calculi might be overlooked. He also insisted on the area of illumination being cut down to its smallest possible limits so as to do away to a large extent with the general fogging of the picture produced by the secondary radiations. Out of a series of 400 examinations 92 cases were operated upon and the diagnosis was found to be correct in 95.4 per cent.-Dr. A. H. Bampton read a paper on the Medical Aspect of Complete Suppression of Urine, and narrated a case where there was complete suppression for ten days, with but slight symptoms up to the eighth day; there was neither clouding of the brain, nor acceleration of the breathing and pulse, nor gastro-intestinal disturbance; the temperature was also subnormal. The patient died unconscious, but without convulsions, on the eleventh day. At the post-mortem examina-tion the bladder was found empty and there was no mechanical obstruction in the urinary tract. The kidneys showed interstitial nephritis. Dr. Bampton said that similar cases had been reported by Sir Dyce Duckworth and Professor W. Osler, and he discussed various theories to account for the arrest of physiological functionnamely, (1) the stop-cock action of arterial supply, (2) the "choked-filter" theory, and (3) the retension of toxins which paralysed the renal epithelium.—Mr. B. G. A. Moynihan showed an Enlarged Prostate, weighing 241 ounces, removed in June last. The patient had suffered for nine months from symptoms of prostatic obstruction. A large tumour was palpable above the pubes. The prostate was removed by the suprapubic route. The wound was slow in healing, but was closed in seven weeks. -- Dr. A. Sharp showed two cases illustrating Tertiary Manifestations of Syphilis of the Larynx. One showed a diffuse infiltration involving the ventricular bands and inter-arytenoid regions and causing troublesome dyspnœa and loss of voice. The other case showed a typical tertiary ulcer—the remains of a disintegrating gumma—involving the true and false cords of the left side. It was pointed out that potassium iodide was much more efficient in circumscribed than in diffuse infiltrations, and that in the latter mercurial inunction with iodide gave the best results.—Mr. H. Collinson showed a Circular Tin Disc half an inch in diameter removed from the larynx of a child, aged 4 years. The child was admitted to a hospital late at night when skiagraphy was impossible. High tracheotomy was performed and the foreign body was found to be tightly impacted below the glottis.—Mr. Walter Thompson showed a Sloughing Testis following Influenza.—Dr. E. F. Trevelyan showed a case of Pachyderma Laryngis in early Pulmonary Tuberculosis.—Other cases and specimens were also shown by Mr. H. de C. Woodcock, Mr. H. Secker Walker, Dr. T. Churton, Dr. O. C. Gruner, Dr. T. Wardrop Griffith, and Mr. A. L. Whitehead.

Reviews and Notices of Books.

Mosquito or Man? The Conquest of the Tropical World. By Sir RUBERT BOYCE, F.R.S. London: John Murray. 1909. Pp. 267. Price 10s. 6d. net.

THE direful importance of flies as disseminators of disease has been fully realised for only a few years. Although the discovery of the connexion between various diseases and the presence in the body of definite bacterial organisms naturally led to the inference that these might be carried from person to person or from infected localities by flies, comparatively little weight seems to have been laid upon this just inference. The undoubted sources of danger in contaminated drinking water, milk, and other articles of diet engaged attention rather than the possible living carriers of deadly germs. It is probably the recent investigations upon malaria and the proof that the malaria organisms pass certain stages of their existence within the bodies of mosquitoes, and perhaps still more the later researches upon sleeping sickness and other diseases caused by the presence in the blood of trypanosomes, which again directed attention to the general importance of diptera as sources of other kinds of infection. For while the mosquitoes are intermediate hosts of the malaria protozoon, it is not so clear that the trypanosomes pass any stage of their existence as actual parasites of the tsetse fly; it would rather appear that they are merely conveyed by this fly from one infected animal to another until then non-infected animal. This accidental transference is believed to play a large part in the dissemination of disease; plague, for example, may be transferred through the intermediary of fleas, and typhoid fever through the common domestic fly. All of these matters are dealt with in an interesting and convincing way by Sir Rubert Boyce, who, from his connexion with the Liverpool School of Tropical Medicine, has had much opportunity of gathering accurate first-hand knowledge.

The book is meant for the layman, from whom it demands in the way of preparation for study merely that acquaintance with scientific method and progress which is now so generally diffused among the reading public. The historical method adopted by the author shows how enormous has been our progress in so complex a subject, and proves absolutely that the most important part played in the acquisition of this immense mass of information has been in the domain of zoology. And yet in the face of this patent fact the study of zoology was at one time in considerable danger of being eliminated from the medical curriculum, while it is still reduced to its lowest possible dimensions in an overcrowded curriculum. A fair weighing of the topics dealt with by Sir Rubert Boyce leaves no room for doubt as to the value of a training in all branches of

zoology. In writing on the "proof of the mosquito doctrine of malaria the author remarks: "With these facts proved it is clear that in order to prevent malaria it was necessary to protect man from the infected mosquito and also to wage war against it. Now, this latter would have been a stupendous task if it meant that war was to be waged against all mosquitoes. Here, however, direct scientific observation proved to Ross that the only species of mosquito which could become infected belonged to a single group, the Anophelinæ." Thus the capacity to distinguish species from species became a necessity, as abundant errors in zoological publications conclusively prove, for the number of ill-described and unidentifiable species which cumber the pages of zoological journals is vast. The faculty for such observation is not universal and needs development by proper training; and though the training may properly form part of a post-graduate course, early zoological instruction will make it much easier.

Given the requisite zoological knowledge, the rest of the prophylactic measures are matters of common sense. It being known that the larvæ of germ-carrying mosquitoes inhabit such and such localities, it becomes clear that they must be eliminated from these localities. The emptying of water-butts, the screening of cisterns, and, in fact, the whole series of recommendations issued for the purposes of warning the ignorant are obvious results of the technical inquiries of the expert and need no special education on the part of those whose business it is to carry them out.

The history of discovery relative to yellow fever occupies no less than five chapters of the volume under consideration. It offers an excellent instance of the persistence of views without proper support, followed by the success of practical preventive measures deduced from the scientific study of other diseases. It is a most remarkable fact that in spite of great attention to this prevalent disease by so many competent observers of several nationalities there is up to the present no knowledge whatever of the actual parasite which is concerned in the disease. As Sir Rubert Boyce justly observes: "The prevention of vellow fever is one of the most brilliant triumphs of modern prophylaxis." So long ago as 1881, while this particular branch of preventive medicine was quite in its infancy, Dr. Finlay of Havana had enunciated a theory that mosquitoes were responsible for transmitting yellow fever. Although subsequent discovery did not lead to the detection of any microscopic parasite, it did undoubtedly establish the fact that the transmitter of the disease was a definite species of mosquito-viz., Stegomyia calopus-and that while the virus was transmissible by the fly it was only after a latent period of three days that this transmission could take place. This, of course, argues a development of the parasite within the fly analogous to what happens in the case of the malaria organism. This enormously important discovery could not have been made without a consideration of the previous work upon the transmission of malaria and upon the life-history of the malaria parasite. Previous though still recent methods of dealing with outbreaks of yellow fever were directed of course to the destruction of bacterial sources of infection. The fact that the disease, at any rate during a particular outbreak mentioned by the author, was found in the houses of the wealthy as well as in the more insalubrious quarters of Belize, may have given a clue to the inefficiency of that view of the causation. The failure of quarantine in coping with yellow fever depends, of course, upon the communicability of the disease being only via the stegomyia, a fact which must have come as a shock to many brought up upon older but still very new views. The truth of the statement of the alchemist and physician, Bombastes Paracelsus, that

disease comes from without and is not engendered within, is more than ever established.

It is perhaps remarkable that Sir Rubert Boyce only devotes a part of one chapter to sleeping sickness, in view of its bulking so largely in the public view at the present moment, as well as in view of the important theoretic question that it gives rise to. The Sleeping Sickness Committee housed by the Royal Society is extremely active in this matter and has been for some time. The numerous papers which have been sent home and are published, or to be published, in the Proceedings of the Royal Society by Sir David Bruce, now actively engaged in the investigation of the parasite of this disease, as well as the continuous work in this country of Mr. H. G. Plimmer and others, are resulting in a very detailed knowledge of the various trypanosomes which are the cause of this and some other allied diseases. While much is known of "trypanosomiasis" much is yet involved in mystery. It is not at all certain how far the trypanosome⁸ actually live as parasites in the tsetse fly or whether, as already mentioned, they are merely conveyed from man to man or from beast to man in a mechanical way by the fly. Furthermore, the life-history of the protozoon requires clearing up. There is, for example, some evidence that it propagates itself at times by ultramicroscopical spores. Many years ago Dr. Dallinger, whose recent death we deplore, in cooperation with the late Dr. Drysdale, found that free living monads, allies of trypanosoma, divided into an immense number of excessively minute spores which could not be properly observed with the poorer lenses of the early "seventies." It is quite likely that the same phenomena occur in the parasitic forms which, moreover, may be conceivably parasitic stages of free living organisms, thus complicating the problem still further. Apart from prophylaxis Sir Rubert Boyce advocates arsenisation as the most effective treatment. In any case, as in other diseases conveyed by protozoon organisms, it is prophylaxis rather than treatment after infection that promises the best results.

This very interesting volume cannot fail to bring home to the reader the vast importance, economic as well as scientific, of this new "conquest of the tropical world." The text is elucidated by numerous plates from photographs which illustrate not only several of the insects concerned in the propagation of disease, but views of "anti-mosquito brigades," screened wards in hospitals, houses in course of fumigation, and many other scenes and objects bearing upon the contents of the book.

The Physiological Feeding of Infants. By ERIC PRITCHARD, M.D. Oxon., M.R.C.P. Lond., Assistant Physician to the Queen's Hospital for Children. Third edition. London: Henry Kimpton. 1909. Pp. 469. Price 7s. 6d. net.

This was a good book in its first edition; it is a much better book now. The first edition was written round the subject of the "modification" of milk, which was five years ago a comparatively new process, originally devised by Meigs in America. The chapters on the need of modified milk still remain, but much new matter has been added to them, and the volume has gained some important chapters on conditions of malnutrition in infants which reveal a wide experience and sound clinical judgment on the part of the author. The whole book is admirably written; it is polished in style, yet not formal; simple, and yet accurate. To an intelligent. educated mother or nurse the directions for the artificial modification of milk would be quite intelligible, and the methods could easily be followed from the directions. Much of the clinical description could also be comprehended by an intelligent laity, so that if not too much reliance were

placed upon it alone the volume would be a useful manual in the nursery, though it is properly directed towards informing the medical profession. Especially valuable would be the sections on the modification of food in obedience to the hints afforded by symptoms of abnormal digestion.

We are glad to find the author opposing the indiscriminate use of predigested or peptonised milk. It has its value in acute gastro-intestinal derangements or for short periods of time, but it deprives the infant's stomach in health of the opportunity of learning to exercise its natural functions. It is impossible to insist too strongly on the value of fresh milk; the more milk is manipulated and handled the more it loses some subtle quality, partly due to the destruction of proteolytic and fat-splitting ferments. Dr. Pritchard places no faith in any form of dried or condensed milk. Our knowledge of the proteid constituents of milk is, however, far from complete, and the usual modern classification of caseinogen, lactalbumin, and lactoglobulin indicates only widely groups capable of being split up into numerous smaller varieties.

The practical details of milk modification deal with the alteration of the percentage ratio of fat (afforded by cream). milk sugar, proteids, and water. Modifications of the ordinary percentage of average cow's milk have been effected in a rough-and-ready fashion in nurseries since "bottles" were first used, but they have been much confined to additions of water, milk sugar, and occasionally cream. The teaching of Dr. Rotch and the practical working of the Walker Gordon laboratories have reduced the percentage reconstruction of milk almost to a certainty, but not quite. It is comparatively easy to separate cream and milk and reassemble them with any given percentages of fat and caseinogen, adding water, or cream, or milk sugar as required, but to prepare "split proteid" mixtures is a more subtle matter. It consists, in general terms, in preparing whey from separated milk by means of rennet, heating the whey to 140° F. to destroy the activity of the ferment, and adding cream and milk sugar. The factors involved in the reconstruction of milk, in which "split proteids" are concerned, are grouped for practical purposes as caseinogen, whey proteids, and fats, and the laboratories which undertake the "reconstruction" of milk are now prepared to issue milk re-formed in percentages of these constituents. Dr. Pritchard lays stress on the necessity of employing these "split proteids" in occasional cases of young or delicate infants, but the highly elaborate calculations and processes required by the employment of split proteids are seldom required and should not deter medical advisers from gaining a knowledge of simple methods. It is unnecessary to summarise the directions for the modification of milk, as it can be carried out in an ordinary nursery. The procedure is no more difficult than that involved in the construction of an ordinarily edible pudding, and the description of the processes as given by Dr. Pritchard is lucid, minute, and simple. He prefers a modification of Soxhlet's apparatus, which would cost about 15s., but having a large experience among the poorest classes he is fertile in suggesting cheap substitutes for expensive apparatus. And not only in apparatus is he mindful of the empty pocket of the poor. There is no doubt that many infants among the poorer classes suffer from lack of cream in cows' milk diluted to furnish a lower proteid percentage. He therefore recommends the addition to each bottle of a small quantity of a solution of citrate of sodium to delay the coagulation of the caseinogen, and to supply the deficiency of fat he employs (for the poor) emulsions of cod-liver or salad oil, or even linseed oil. An emulsion of the

last can be made at a cost for materials which will furnish nearly a hundred feedings for 4d. It is impossible to note more than a small fraction of the many excellent points of detail in these chapters on milk; they are so careful and clear that everyone interested in or employed in the management of crèches or babies' homes should obtain this volume. There are admirable information and advice on the subject of breast-feeding, a function which is usually performed in a very perfunctory manner. Even accoucheurs and nurses of the widest experience might find something new to them in this chapter. The importance and methods for regulating the rate of sucking are properly insisted upon, and great stress is laid on the value of test-feeds estimated by weight. Very careful attention is also given to the recognition of the effects of the over-supply or under-supply of breast-milk.

Dr. Pritchard has compiled a mass of information based upon new work by Emil Fischer and other organic chemists on the digestion of the carbohydrates in the intestinal tract. As he says, our whole conception of this subject has recently been greatly modified and simplified. After reviewing the physiological chemistry of the carbohydrates which enter most largely into the constituents of food, the author traces very clearly the influence on babies of feeding them too early with carbohydrates, and arrives at the conclusion that "starch given at this early period of life is digested, but it is digested in the wrong way, in the wrong place, and by the wrong agencies." Instead, therefore, of being broken down by the amylopsin ferment in the duodenum, it is attacked by bacteria in the colon and broken down into irritating acids, such as acetic, butyric, and valerianic acids, and into gases such as hydrogen, methane, and carbon dioxide. We can conceive no better tribute to the author's style of writing than that he has rendered a disquisition on such a subject not only easily intelligible but extremely interesting to read. The end of the volume contains some excellent recipes for preparing foods for children which are careful and not too abstruse, while the ingredients can be obtained at moderate cost. Directions for making the emulsions to which we have alluded are given here.

Gail-stones, their Complications and Treatment. By A. W. MAYO ROBSON, D.Sc. Leeds, F.R.C.S. Eng., and P. J. CAMMIDGE, M.D. Lond. London: Henry Frowde and Hodder and Stoughton. 1909. Pp. 315. Price 5s. net.

THE works issued under the title of the Oxford Medical Publications have comprised several valuable additions to current medical literature. The volume before us may confidently be said to be at least as valuable as any of its predecessors. Time was when the treatment of gall-stones was purely medical; now the conditions are changed, and all agree that gall-stones should be treated early by the surgeon if the best results are to be obtained, and the parts of this volume which include the operative treatment of gall-stones are among the most valuable.

The chapter on the anatomy of the gall-bladder consists of an account of the structure of these parts, which, while it cannot be called elaborate, is adequate for the purpose for which it is intended. The authors divide the common bileduct into four portions: (1) the supra-duodenal; (2) the retra-duodenal; (3) the pancreatic; and (4) the intraparietal. The various forms which the ampulla of Vater may present are illustrated by a diagram, and this will help to demonstrate the differences that exist in different cases in the risk of a gall-stone lodging there in its course towards the duodenum. The authors appear to think that the linguiform processes of the liver or Riedel's lobe may be acquired. They mention that "it is said to be uniformly due to cholelithiasis," but they agree that it is not always associated with gall-stones. It is, however, extremely doubtful

if it is ever really produced; it is probably always congenital.

An account of the character and composition of bile follows, and this is succeeded by a chapter on the composition and formation of gall-stones, and some excellent figures illustrate this occurrence. The bacterial origin of gallstones is described, but we do not obtain any authoritative statement as to the relative frequency with which different organisms act as causative factors. It is suggested that a proteid diet in excess has but little tendency to the formation of gall-stones. The various symptoms of cholelithiasis are detailed and discussed. With regard to the law usually associated with Courvoisier's name, that distension of the gall-bladder accompanied by jaundice is usually dependent upon malignant disease, either of the head of the pancreas or of the common bile-duct, and is rarely associated with gall-stones, it is pointed out that one of the authors, Professor Mayo Robson, had drawn attention to this association previously to Courvoisier's publication, but it would be difficult at present to change the name of the law. As is pointed out here, the absence of dilatation of the gallbladder which usually accompanies the presence of gallstones is due partly to the ball-valve-like action of the stone not causing complete obstruction, and partly to the inflammatory changes set up by the calculi, by which the gallbladder is frequently diminished in size as it become adherent to surrounding structures, so that when the common duct is later obstructed the gall-bladder is unable to dilate.

In the diagnosis of gall-stone the point on which most stress is laid is the paroxysmal nature of the attacks of pain, and the presence of very marked tenderness over the region of the gall-bladder, or at least over some point in a line from the ninth costal cartilage to the umbilicus. Slight jaundice is very frequently present in gall-stone colic, even when the calculi are merely in the gall-bladder or cystic duct. We agree thoroughly with the authors that in doubtful cases the operations of sounding for gall-stones and of aspirating distended gall-bladder are not only futile but dangerous. A small exploratory incision is far safer and of much greater value whether for diagnosis or for treatment. The pancreatic reaction of the urine may sometimes prove very useful in doubtful cases. The complications of gall-stones are many, and the authors tabulate 27, though it would have simplified matters if they had been grouped; they range from dilatation of the stomach to infective endocarditis. The pathological changes in the gall-bladder and ducts are well described, and the authors maintain that drainage is the best treatment for suppurative cholangitis. As the authors point out, intestinal obstruction due to gall-stones may arise in four ways: firstly, there is simple mechanical occlusion caused by a large stone; secondly, obstruction due to volvulus dependent on the violence of the colic caused by gallstone attacks; thirdly, obstruction resulting from adhesions left by local peritonitis; and lastly, obstruction dependent on paralysis of the intestine caused by peritoneal adhesions. Inasmuch as 52 per cent. of these cases are fatal when treated on medical and expectant lines, it is clear that surgery should be resorted to at an early period, and an operation should be performed as soon as symptoms of obstruction occur. We concur in the advice that enterotomy is far preferable and safer than any attempt to crush the stone without opening the bowel wall; and, of course, it is hardly necessary to point out that the mortality resulting in these cases when surgical intervention has been left to a late period of the disease cannot be taken as any indication that surgical treatment is as likely to be followed by fatal results as is medical treatment.

An interesting chapter is that on malignant disease. In a series of 56 operations for cancer of the biliary passages, 41

—that is, 73·2 per cent.—were associated with cholelithiasis, and even in several of the other 15 a history of long-continued attacks of intermittent pain pointed strongly to a similar association. The authors are inclined to support the theory that the "irritation" of the gall-stones leads to the occurrence of malignant disease. Calculi in the common bile-duct were said to occur by Courvoisier in 4 per cent. in all cases of cholelithiasis, but the authors have found this condition present in nearly 40 per cent. of their own cases of gall-stone.

A chapter is devoted to medical treatment, though it is pointed out that medical treatment is essentially preventive and not curative; but this preventive treatment should be of great value in diminishing the tendency to recurrence of stone in those who have already suffered from this affection. It is advised that the meals should be regular and at frequent intervals, and a mixed diet is, we are told, best; but overindulgence in sweet or starchy foods should be avoided. It is especially urged that care should be taken that a sufficient amount of water should be drunk so that the bile may not run the risk of becoming concentrated. The authors do not believe that it is possible, by any drug administered by the mouth, to cause the absorption of stones already present in the biliary passages, but they think that some drugs, such as benzoate of soda, which have been reported as having a beneficial effect, may act by relieving the associated catarrh. They are quite sceptical as to the value of olive oil in causing the passage of gall-stones, and any effect it may have they ttribute partly to the lubricating action on the bile-duct and partly to the diminution of the excessive secretion of hydrochloric acid in the stomach.

As to the operations on the biliary passages, they urge the value of pushing the spine forward at the level of the liver and depressing the lower part of the body, so that the common and cystic ducts are brought several inches nearer the surface. As to the question which has within recent years been raised of the desirability of excising the gall-bladder in all cases where surgical intervention is desirable, the authors are opposed to it, for the results they claim of cholecystotomy are so good that they consider that it is unnecessary to remove the gall-bladder unless there is some special indication for it, while if the surgeon is not perfectly certain that the lower biliary passages are quite free the risks of cholecystectomy are very great.

This is a valuable book, for it contains in a convenient and readable form all the accepted knowledge on the subject.

Folkssenchen (Epidemio Diseases). 14 lectures. By various authors. Edited by Professor Dr. R. Kutner. Jena: Gustav Fischer. 1909. Pp. 390. Price M.6.

THE series of lectures contained in this book are part of a course of what we should call post-graduate instruction, delivered under the direction of the Zentralkomitee für das aerztliche Fortbildungswesen in Preussen. An introductory address by Professor M. Kirchner deals with epidemics in general and emphasises the amount of human life which they are responsible for destroying. In the second lecture Professor A. Wassermann gives a brief outline of our present knowledge of immunity and of the principles of serumtherapeutics founded upon it. Later in the book this same writer deals with enteric fever, chiefly from the bacteriological point of view, describing the methods of identifying the bacilli, the Widal test, and the unsuccessful attempts so far made to treat the malady by specific methods; and in the last lecture but one he also writes on small-pox and vaccination. While in respect to this last disease Germany is specially well protected by reason of a scientific insistence upon universal vaccination, in regard to other epidemics, such as dysentery,

plague, cholera, leprosy, and hydrophobia, the land frontiers of the country render it more exposed than are these islands to recurring outbreaks. The fear of the introduction of plague seems from these lectures to be ever present, and two lectures are devoted to this subject, one by Professor W. Kolle on the clinical features of this protean affection, and a second by Professor G. Sticker on diagnosis. The former is specially interesting as giving a graphic account of the malady, which is very well worthy of study. Dysentery is dealt with by Professor Kruse and cholera by Professor W. Kolle. Two lectures deal with tuberculosis, one by Professor W. Dönitz on the treatment of the affection, and the other by Professor A. Moeller on the public health and sanatorium aspects of the question. The former writer regrets that there is no method of measuring the degree of immunity produced by injections of tuberculin, and makes no mention of the determination of the opsonic index, which strikes us as an extraordinary omission. Opinion may differ as to what the value may ultimately prove to be of some of the work done in this direction, but this point makes that work more certainly deserving of record and criticism. We find sometimes that appreciation of the work of foreign observers is not a strong point in German science. Yellow fever, sleeping sickness, and beri-beri are described in one lecture by Dr. B. Nocht, and malaria in another by Professor E. Martini. The latter gives some useful illustrations of the anopheles and culex genera of mosquitoes and of their larvæ. Professor M. Kirchner's lecture on leprosy is interesting, as giving an account of the development of humane treatment of this disease, and also as pointing out its wide prevalence even at the present day, when our own immunity from it leads to a disposition to minimise its importance elsewhere. The final lecture by Dr. Schüder on hydrophobia may be studied with advantage as affording a good account of the measures taken in Germany to deal with outbreaks of the disease, although the immunity which has been obtained in this country renders any imitation of them here unnecessary.

In the above account we have not kept to the order of the actual chapters. It will be seen that the volume does not contain a complete account of all infective diseases, but a series of articles on certain selected examples. These are from the hands of experts, and are clearly written and of definite value. We understand from an editorial note that other volumes in this series are to follow, and we shall look forward with interest to their appearance in view of the excellence of the present book.

The Ophthalmic Year-Book. Edited by Edward Jackson, A.M., M.D., George E. De Schweinitz, A.M., M.D., and Theodore B. Schneideman, A.M., M.D. Volume VI. Denver, Colorado: The Herrick Book and Stationery Company. 1909. Pp. 415.

THE "Ophthalmic Year Book" is an American publication containing a digest of the literature of ophthalmology of the year. It has now reached its sixth volume, and each succeeding volume has been an improvement on its predecessor. It is published under the editorship of Dr. Jackson, Dr. de Schweinitz, and Dr. Schneideman, names which are guarantees for the excellency of the publication. In fulness and detail it scarcely competes with Nagel and von Michel's "Jahresbericht für Ophthalmologie," but it has the inestimable advantage of appearing within a few weeks of the end of the year which is being dealt with. Its utility is enormously enhanced by this fact, and, as far as we have been able to judge, it gives a remarkably complete and accurate résumé of ophthalmological literature. The book is divided into three sections. The first gives short biographical sketches of ophthalmologists who have died

during the year; the second, comprising the bulk of the book, gives a classified digest of the literature; and the third gives the list of the books, transactions, and journal articles, with extensive references to the places of publication. It will suffice to say that the abstracts from the papers and other publications have been satisfactorily carried out, not only with regard to American literature, which naturally occupies a prominent place, but also with regard to English, German, and French. We consider it a book which no ophthalmologist can afford to be without.

LIBRARY TABLE.

First Principles of Chemical Theory. By C. H. MATHEWSON, Ph.D., Instructor in Chemistry and Metallography at the Sheffield Scientific School of Yale University. London: Chapman and Hall, Limited; New York: John Wiley and Sons. Pp. 123. Price 4s. 6d. net.—This book is quite advanced in the treatment of its subject, in spite of which it presents the first principles of modern chemical theory in plain and intelligible terms to the beginner. The author however, very properly does not expect the reader to confine himself to theoretical considerations, for he distinctly states that the purpose of the book is rather to offer a very early presentation of leading principles which are of material assistance in teaching the beginner to explain and correlate his experimental results. In the plan of teaching adopted at the Sheffield Scientific School of Yale University the aim is to improve every opportunity for illustrating and applying the principles discussed as the student adds to his actual chemical experience. That is an admirable plan. The author justifies the introduction of the electrolytic dissociation theory and the law of mass action at an early stage, and, in fact, includes such considerations in the first year of study. We agree with him that, having regard to the importance of these questions in all chemical studies, they should receive attention as soon as possible, and if the student's practical course is directed to a demonstration of chemical changes and the theoretical considerations which they involve he is calculated early to realise the meaning and significance of ions and so forth. The modern interpretation of chemical change and reactions is thus well put, and the book should be not only of distinct service to students, but to others who, while they have studied chemistry under the old régime, would be glad to keep pace with recent developments.

Guy's Hospital Nursing Guide, 1909. Edited by the MATRON. London: Ash and Co. Pp. 166. Price 1s. 6d. -This is the fifth issue of the register of nurses of Guy's Hospital. To it is appended an excellent essay on Nursing as a Profession, and 40 pages of valuable information on various points connected with a nurse's duties, such as the handling of infectious cases, the immediate treatment of poisoning, and other subjects, all well arranged and sound in matter. There are some very good receipts for invalid cookery. Those contemplating nursing as a career would find this unassuming volume a valuable guide.

Iransactions of the American Otological Society. Fortysecond Annual Meeting. New Bedford, Massachusetts: Mercury Publishing Co. 1909.—The first paper in this volume of transactions has been contributed by Dr. Crackett. It deals with the treatment of acute suppurative lepto-meningitis of otitic origin, and is based upon six cases operated on by drainage. The second paper is by Dr. Norval H. Pierce and is a report of a case of recovery after an operation on a large cerebellar abscess, in which the patient exhibited nystagmus towards the sound side with the caloric test on the sound side, and on the diseased side a negative result was obtained. Dr. Dench reports two cases of abscess of the brain, one of them terminating in recovery. Syphilis of the Ear, by Dr. J. S. Fraser, being Part 2 of the

A paper read by Dr. P. Fridenberg on some recent theories of the labyrinth will well repay careful perusal. An article on subjective and objective sense of sound perception by Dr. D. B. Kyle is a well prepared paper. Dr. J. B. Ras reports two cases of Sinus Thrombosis. Dr. A. B. Duel and Dr. J. Wright contribute a paper on the Clinical and Pathological Significance of Bacterizenia in Suppurative Otitis; it contains a large amount of exceptionally interesting matter. Dr. G. E. Shambaugh read a paper on the Significance of Certain Labyrinthine Symptoms. Dr. W. C. Braislin presented: (1) a paper on a Study of Some Casts of the Infantile Pharynx, with special reference to the Eustachian Tubes; and (2) a Note on Eustachian Obstruction, together with a long bibliography. The remaining memoirs which complete the volume are as follows: Autotoxic Deafness, by Dr. S. F. Snow; Nasal and Aural Discharge in Children, by Dr. P. Fridenberg; Sequestrum of Labyrinth, by Dr. J. F. McKernon; the Importance of the Thorough Study of the Naso-pharynx in the Treatment of Diseases of the Ear, by Dr. J. R. Packard; Chronic Epipharyngeal Periadenitis. in Adults, by Dr. J. S. Logan; Report of a Case of Removal of Foreign Body from the Region of the Tympanic Cavity, Entrance through Soft Palate, by Dr. D. A. Walker; and Radical Removal of the Tonsil, by Dr. C. W. Richardson.

Annals of Otology, Rhinology, and Laryngology. St. Louis, Missouri: J. H. Parker. June, 1909. Price \$4.00.-This volume contains papers read at various meetings of societies in the United States, the first being by Professor Chiari on the Treatment of Cancer of the Larynx; and the next, admirably illustrated by Dr. Loeb, is a Study of the Anatomical Relations of the Optic Nerve to the Accessory Cavities of the Nose. These are followed by several other good papers. The first original one is by Dr. L. M. Hurd and Dr. J. Wright upon the Diagnosis of Tuberculosis of the Tonsils, Clinical and Microscopical; the next being on the Removal of the Entire Tonsil by F. C. Todd. A Method of Precision for Inflating the Tube and Tympanum is the title of a short paper by Dr. J. Hubbard; and Dr. D. Day reports a case of probable sarcoma of the temporal bone. A few abstracts on current literature are also included.

Christmas and New Year Cards, Sc. - From Messrs. Raphael Tuck and Sons, Limited, Moorfields, London, E.C., we have again received a selection of Christmas and New Year greeting cards, pictorial calendars, and toy books for children, of infinite variety, artistic design, and excellent workmanship. We have for so many years past spoken in terms of high commendation of the productions of Messrs Tuck, that it is difficult to find new words with which to express our approval.

JOURNALS AND MAGAZINES.

The Manchester Medical Review .- Two articles on the relations of the medical profession and the public appear in the October issue of this magazine. One by Dr. J. Stavely Dick deals with the organisation of the profession from within and acclaims the British Medical Association as "a type of machine for such a purpose which cannot be surpassed." The other, written by Dr. E. Vipont Brown, draws attention to the evils of dispensaries and sick clubs, and regards the scheme propounded by the Minority of the Poor-law Commission as affording a suitable remedy. Dr. G. H. Lancashire contributes an interesting paper on Dermatitis Artifacta, and Dr. S. English deals with the subject of Strangulated Hernia and records three illustrative cases.

Journal of Laryngology. Rhinology, and Otology. August, September, October, and November, 1909.—The August number of this journal contains a paper on Congenital

report for the Ear and Throat Department at the Royal Infirmary, Edinburgh. In the September number there is a paper by the same author on the Histology of Nasal Accessory Sinus Suppuration. Otherwise the issues consist mainly of transactions of societies, with a few abstracts from current literature.

New Inbentions.

A NEW ÆSTHESIOMETER.

THE instrument which I here describe is by no means presumed to be indispensable, but it is capable of filling a want in the armamentarium of the neurologist, who often has to make a series of examinations of sensibility in a relatively short time. The utensils required occupy only a small space; the case may be easily carried in the coat pocket. One can work quickly with it and yet get very exact results. I consider it a special advantage to be able to trace immediately the limits of sensation and to have one hand free during the determination of the sensibility to contact, pressure, and pain, although both hands are in use in the delineation of the limits of sensibility to temperature. The case contains two instruments:

1. One of these is slender, shaped like a penholder, and covered at both ends with caps which are removeable by simply pulling them off. A camel's hair pencil may be placed on the end of one of these caps; it is used for testing tactile sensation. Removing the cap reveals a needle; this serves to test the sensibility to pain. This needle may be heated to redness before each examination without blunting its point in the least. The other cap encloses a dermatograph. Between the latter and the needle lies a spring, the strength of which may be graduated in three different degrees by means of weights. As a rule this spring is tight. Its simple tightening mechanism is loosened by a slight turn to the left; this enables us to test the sense of pressure by placing on the skin either the dermatograph or the cap

which covers the needle, then compressing the spring. When for this purpose the needle is used it is easy to graduate the irritation of pain by compressing the spring, just as with Aly's instrument. With this part of the æsthesiometer we may also test the tactile sensibility, as well as that of pain and pressure, while simultaneously tracing the obtained limits.

2. The other instrument is broader and serves to examine the sense of temperature. It consists of three parts: two hollow metallic cylinders, separated by a solid rubber cylinder, which serves both as handle and isolater. The metallic cylinder which lies nearer the corrugation in the rubber handle is filled with sodium acetate, like a thermophore. This salt, as is well known, melts on being heated a short time over the flame of a spirit lamp or any other, communicating the disengaging heat to the surrounding parts; it recrystallises on cooling. may therefore be used a considerable number of times without renewing. With

this part of the instrument we test the sensitiveness to heat. The other cylinder serves to test the sensation of cold; for this purpose the natural coldness of the metal alone may be used (which generally suffices in winter), or the cylinder may be filled either with cold

water or with lumps of ice. Experiments made in the Frankfort Physical Society by a chemist, Dr. W. Epstein, and myself have shown that for tests with high degrees of cold-which seldom come into consideration, since intense cold, just as excessive heat, acts more like an irritation of pain—ammonium nitrate is the most suitable material. It is cheap, may be had in large crystals, and easily introduced into the cylinder. It is only necessary to add a little water and the nitrate dissolves immediately, giving out intense cold. But it does not recrystallise spontaneously; a new filling is therefore required before each examination.

Experiments have determined that the differences in temperature may be plainly recognised by healthy persons during about 15 minutes, even when the cylinder is only filled with cold water; this time is amply sufficient, even for very minute tests of the sense of temperature. Both metallic cylinders are closed by screwing the caps on tight; thus the cold and the warm side may be applied alternately and continually without danger of leakage. It is obvious that this method of examination is much easier than the one generally used with several test-tubes of different temperature, not to mention the greater facility in the transportation of our instrument and the advantage of being able to trace with the dermatograph the limits obtained.

This instrument may be obtained from Mr. B. B. Cassel, Neue Zeil, Frankfort-on-the-Main, price M.15, case included.

DR. SIEGMUND AUERBACH.

MEDICINE AND THE LAW.

A Foolish Libel on a Medical Inspector of Schools.

Dr. Martha Adams, a lady who in July, 1908, was appointed medical inspector of schools in the district of Twickenham, recently brought an action for libel against Vanity Fair, Limited, Pomeroy, and others, in respect of an article written by the defendant Pomeroy, and published over his signature in Vanity Fair. The action when the case came on for trial had been stayed against all the defendants except Mr. Ernest Pomeroy. The evidence showed that acting in her official capacity the plaintiff found two girls in a school under her care had not been vaccinated, in the case of one of whom a certificate of exemption did not appear to have been obtained. The plaintiff thereupon gave notice of this to the vaccination officer, a course which was not prescribed by the circular of the Board of Education defining her duties, and with regard to which a question in the House of Commons elicited the reply from the President of the Board that information so obtained should be regarded as strictly confidential. The defendant wrote of this incident in Vanity Fair, "To my mind a more villainous misuse and abuse of power has never been perpetrated even in the medical profession, which is peculiarly prolific in devices of this kind. But why are the medicoes so prejudiced? Because of the vaccination fees! How many of the children reported to the vaccination officer by Dr. Martha were subsequently infected by her, and at how much per head, or, if by some other doctor, what percentage of fees did she obtain?" Apparently the fact that the plaintiff had exceeded the strict limits of her official duties in what she did affected the view of the jury. At all events, they were content to find a verdict for one farthing damages, for which judgment was entered with costs. An appeal published in another column (see p. 1854) should ensure Dr. Adams's personal loss being amply covered. It need hardly be mentioned that Dr. Adams, in the witness-box, stated that she had never vaccinated a child in Twickenham, or suggested that one should be vaccinated, and that her remuneration was by salary unaugmented by fees for examining or reporting on children and that no contradiction of this was attempted.

Typhoid Fever from Eating Oysters.

An action was recently tried before the Lord Chief Justice and a special jury in which the plaintiff, Leslie Cardale, a lieutenant in the Royal Navy, sued Henry Klockenbusch, a hotel keeper at Chatham, for negligence in supplying him with oysters at dinner from which he contracted typhoid fever. A brother officer, like himself in command of a torpedo-boat destroyer lying off Sheerness, who dined with the plaintiff on the night when the oysters were alleged to have been eaten, had also been taken ill with typhoid fever and had died. The plaintiff was the only witness as to the fact of his having eaten oysters at the defendant's inn on the night alleged, his companion being dead, and the fact that he had eaten them being denied by the defendant whose books did not show that any oysters had been supplied to customers on the day named. Ample medical evidence was, however, given as to the illness of the plaintiff, as to the dates on which both officers were first medically attended, as to the normal period of incubation of

the disease, as to the absence of other cases in the fleet, as to the nature of the contamination of oysters, and as to its The medical officer of health of Chatham also deposed to the fact that certain areas in the Medway were liable to be infected by sewage from Rochester and Chatham, and that oyster beds had been closed by order of the Fisheries Commission. The chamberlain of the Rochester fisheries was also a witness with regard to the contamination of certain beds which he specified, in the neighbourhood of Chatham and the steps taken to prevent dredging from them. It was contended on the part of the defendant that he had taken all reasonable care and that it was not proved that the illness of the plaintiff was due to his having eaten oysters on the date alleged at the defendant's house. The questions left by the Lord Chief Justice to the jury were as follows: "Did the plaintiff contract typhoid fever from any oysters supplied by the defendant! Did the plaintiff rely on the skill and judgment of the defendant to supply him with fit and proper food? Assuming that the oysters were supplied by the defendant to the plaintiff, was the defendant, or were his servants, guilty of negligence?" The above questions, upon which the liability of the defendant was held to depend, were all answered in the affirmative by the jury, and as this constituted a finding for the plaintiff, a verdict as to the damages was added-namely, £264, to include £100 in addition to the "special damages" claimed. The latter were made up of expenses of medical treatment and of loss of pay due to the illness. Judgment was given for the above amount, a stay of execution being granted subject to the money being paid into court.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

An ordinary meeting of the Council was held on Dec. 9th, Mr. BUTLIN, the President, being in the chair.

A report was read from the Board of Examiners in Anatomy and Physiology for the Fellowship, stating that at the recent examination 108 candidates were examined and that 33 of these were approved and 75 rejected. It was resolved to issue Diplomas of Fellowship to 28 successful candidates. It was resolved to issue diplomas of the Licence in Dental Surgery to 36 successful candidates.

Certain alterations in the regulations for admission to the museum, recommended by the Museum Committee, were approved and adopted. The most important change is that women holding other medical or surgical qualifications than those of the College, and women medical students desirous of admission to the museum on other days than Friday or Saturday, must make application in writing to the secretary or conservator. The application must be accompanied by a letter from the dean of the applicant's medical school in the case of a medical student, recommending that a ticket of admission be granted. Tickets of admission, which are not transferable and must be produced on application before admission, are granted for six months; at the expiration of this time application must be made for their renewal.

Mr. J. F. Colyer was appointed honorary curator of the odontological collection.

On the recommendation of the Committee of Management it was resolved to add the London School of Medicine for Women and the Edinburgh School of Medicine for Women to the list of recognised medical schools, and to add the Royal Free Hospital to the list of recognised hospitals; it was also resolved to recognise the public health laboratories of the School of Medicine of the Royal Colleges of Physicians and Surgeons of Edinburgh for the course of instruction for the diploma in public health. These recommendations require also the approval of the Royal College of Physicians of London

It was resolved to address a communication to the Privy Council urging the need for early legislation to give effect to the recommendations of the Departmental Committee appointed to consider the working of the Midwives Act of 1002.

Mr. H. F. Waterhouse was elected a member of the Court | T. H. Havelock and J. A. Smythe. The Council of Durham of Examiners in the vacancy occasioned by the retirement of | Colleges: H. E. Ferens, W. R. H. Gray, and Rev. J. P. Day.

Mr. Bernard Pitts. Dr. G. F. Blacker was elected an examiner in midwifery under the Conjoint Examining Board in the vacancy occasioned by the death of Dr. W. R. Pollock. Mr. R. J. Godlee was appointed a representative of the College on the Senate of the University of London in the place of the late Mr. H. H. Clutton. Mr. A. Pearce Gould was elected a member of the Executive Committee of the Imperial Cancer Research Fund in the vacancy occasioned by the death of Mr. Clutton.

The best thanks of the Council were given to Mr. Bernard Pitts for presenting to the College an instrument cabinet made and used by the late Sir William Fergusson, Bart.

A letter was read from the Medico-Psychological Association of Great Britain expressing its sense of "the urgent necessity of post-graduate teaching in psychiatry in medical schools and for the granting of a special diploma to candidates after examination," and asking the Universities and other examining bodies to take these matters into consideration. The letter was referred to the Committee of Management for consideration and report.

A letter was read from Sir Henry Morris, Bart., reporting the proceedings of the General Medical Council at its late session. The best thanks of the Council were given to Sir Henry Morris for his services as the representative of the College on the General Medical Council.

THE JOHN HERBERT WELLS FUND.

THE following is the sixth list of subscriptions to the John Herbert Wells Fund. Further contributions will be gratefully received by the Earl of Dalhousie and Mr. Julian G. Lousada, honorary secretaries and treasurers of the fund, at 16, Old Broad-street, E.C., or by ourselves at this

			d . 1		£	8.	d.
Sir Edgar Speyer, Bart.	25	0	0 ;	Sir Herbert B. Cohen,			
Sir Jesse Boot	10	10	0	Bart	2	2	0
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Dr. R. Havnes Lovell	5 3	3	0				
Dr. H. G. Walker	3	3	0	Cross)	1	0	0
Miss K. Mary Barneby	3	0	0		_	Ť	•

University of Durham.—A Convocation was held in the Castle Hall, Durham, on Dec. 7th. The Chancellor (Dean Kitchin) presided, and there was a large attendance of members of Convocation. Numerous ordinary degrees in arts, science, and letters were conferred, while an honorary D.C.L. was given to Mr. James Bell Simpson in recognition of his efforts on behalf of scientific education in the north during the past 40 years. The Convocation was largely interesting in that it was the first held under the statutes of the new Durham University Act of 1908. The Chancellor asked that he might be allowed to say a few words on this special occasion. He could look back on the history of the University since 1834, the date of his earliest recollection of the city and University of Durham. He briefly sketched the history of the outlying colleges, of science and medicine, which came to be a part of the University in the early "seventies." He spoke further of the desirability of keeping up the standards of entrance and other examinations, and foretold a bright future for this centre of education in the north. Principal Jevons (Hatfield Hall) also made some appropriate remarks, and mentioned the coincidence that the first birthday of their new University was the eighty-second birthday of the Chancellor. Following this was the election of members of the new Senate, the result being :- For the Durham Division : Dr. Gee (Master of University College), Principal Moulsdale, H. E. Ferens, and W. R. H. Gray. College of Medicine (Newcastle): H. B. Angus and R. A. Bolam. Armstrong College (Newcastle): T. H. Havelock and J. A. Smythe. The Council of Durham

THE LANCET.

LONDON: SATURDAY, DECEMBER 18, 1909.

The Medical Curriculum of Edinburgh University.

On another page we print a summary of the report on the medical curriculum at the University of Edinburgh, the work of a committee appointed by the Edinburgh Pathological Club to inquire into the question of the present curriculum and the general efficiency of the school. The summary may well be read in connexion with the series of articles which we are now publishing on medical education, to which it forms an interesting supplement. The committee spent many months over the inquiry, and several evenings were devoted to the discussion and final adjustment of the committee's report by the club itself. The meport has thus a somewhat unique value as emanating from a body which represents in its active membership most of the younger workers in the Edinburgh school, and with which the more senior workers retain their connexion even though they do not attend the ordinary meetings. The question of medical education has of late been much discussed largely owing to the establishment of new universities in important English centres with a freedom of action unknown to Edinburgh and the other Scottish universities. These young rivals, not new as schools but new as degree-granting centres, have had practically a free hand to organise their medical teaching on the most modern lines, while their endowments have enabled them to make the standard of medical education as high as was deemed to be desirable. In the case of Edinburgh and the other Scottish schools the methods of imparting instruction are based on foundations going deep into the past, however much the instruction imparted may represent the best and the newest knowledge. Edinburgh has, moreover, in its extra-mural school an institution which is unique, for nowhere else, even in Scotland, has extra-mural teaching the status, prominence, and power which it has long held in the capital. The extramural school has often been the first party to adopt new plans and new methods; while the University necessarily represents the conservative party, although in either camp men of extreme views may be found.

Not only do time-honoured methods of instruction tend to persist, but some of the more scientific subjects of the curriculum, in which great advances have been made, have a place given to them by their professors which is out of proportion to the time needed for the final subjects, and this must be recognised as an inevitable result of a traditional method of administration to which the modern appellation of "watertight compartments" is applicable. So much has to be said in explanation of the position in which Edinburgh at present stands and of the criticism which the report with which we are dealing passes upon the school, as represented by the University. The one question which both

parties have at heart is, How are students to be trained so as to fit them for the practice of healing in the community? For men who aspire to a university degree in medicine there can be no question that they should have an appreciative acquaintance with the earlier scientific subjects of the curriculum. Seeing that it is impossible to acquire a full knowledge of any of these subjects in the time available, it is in the highest degree important that attention should be concentrated on the aspects of the various subjects which are necessary for the intelligent and accurate understanding of clinical phenomena, while the practical work should be of a kind that will be an aid to the investigation of the conditions with which clinical medicine deals. We have on many occasions expressed our agreement with the principles. suggested in the report of the coordination of the earlier medical studies and their teaching with a direct view to their future application. This is especially the case with chemistry, physics, and physiology. The teaching of anatomy should be so directed as to familiarise the student with the relations of the internal organs in such a way that he may appreciate the significance of physical signs and symptoms when they are brought to his notice by his clinical teachers. This correlation of subjects can only be attained by a free and frank cooperation between teachers who keep before their minds that the main aim in their work is the fitting of the student for his life's work as a well-educated practitioner.

With regard to the final subjects of the curriculum the report takes the view strongly that there can be no efficient teaching of clinical medicine or surgery save to comparatively small classes, indicating that the opposite condition rules in Edinburgh. This is evidently the explanation of the suggestion that the four ordinary physicians to the infirmary should have the status of University lecturers or professors, with a common fee fund, and with the students equally distributed between them and the three University clinical professors. A working scheme on these lines seems to us easy of adjustment if the University will adopt a forward policy, and we trust she will do so. It is not to the true interest of medical teaching anywhere that a great teaching school like Edinburgh with its high traditions should drop out of the front rank from want of elasticity or from failure to adapt itself to new conditions and new requirements. We do not think that the most critical would formulate such an accusation exactly, but medical education is passing through an anxious stage, rivalries are many, and even the most honoured institutions are finding that they cannot progress on prestige.

The Structure of Isolation Hospitals and Sanatoriums.

ALTHOUGH experience of the value of both fever hospitals and sanatoriums for pulmonary tuberculosis has brought them down to a materially lower level as preventive and curative agencies than they occupied in the eyes of those who first advocated their establishment, the fact remains that both institutions are of very great utility and are certain to be provided, wherever the funds are to come from, in an increasing degree in the future. Neither alone will "stamp

out," as it is called, any of the diseases for which they are intended, but each will continue to serve a highly useful purpose and, employed in conjunction with many other measures and agencies, should have the effect in the case of isolation hospitals of limiting the spread of infectious diseases and enabling the members of invaded houses to return to work of to school, and, in the case of sanatoriums, of helping many with a tuberculous lung in its early stages on to the high road which leads to recovery, as well as teaching the patients how to prolong their lives hereafter and to be of minimum danger to their fellows. But in addition to these very solid arguments is the fact that the public, having once tasted the convenience and comfort of these institutions, will continue to demand their provision, and he would be a brave man who, because neither institution has quite come up to expectation, urged that existing structures should be done away with and no more erected. But it cannot, however, be denied that much more money has in the past been expended upon some of these hospitals and sanatoriums than need have been the case, and, this being so, such excess expenditure must be regarded in one way as wasteful in that it might have been devoted to some other branches of preventive medicine which might have been of greater value.

This excessive cost of fever hospitals has been brought about partly by the architects and partly by medical men, and it has been due in no small degree to the circumstance that the use of what are known as permanent-i.e., brick or stone-edifices has been regarded in the past as essential. But the improvements made in what are called "temporary" structures during recent years, and the durability and comfort of such buildings, are raising questions in the minds of many thoughtful administrators as to whether these temporary edifices, if thoroughly well constructed, may not, at least in many instances, serve quite as useful a purpose as the more costly permanent edifices. With reference to the provision for the infectious fevers Dr. J. C. McVail contributes to a recent issue of The Medical Officer 1 an instructive paper upon the cost and value of wood and iron isolation hospitals. Dr. MCVAIL circularised the county medical officers of Scotland on the subject, asking their experience and conclusions as regards the durability, cost, efficiency, and comfort of these buildings, and as to their suitability for phthisis and small-pox. It was found that there was considerable discrepancy of opinion as to the value of these "temporary" buildings, although practically all the replies were in favour of their suitability for the purpose of patients suffering from pulmonary tuberculosis, and it is of importance to have elicited unanimity even on this point. Some medical officers of health regard the trouble as to the repair of these temporary edifices as a distinct drawback to them, while others have found it difficult to maintain an equable temperature in them, but as to this latter point it must be remembered that the hospitals referred to were situated in rather colder climates than are generally experienced in England. But, on the whole, the county medical officers of Scotland have more to say in favour of these buildings than was, perhaps, to have been expected. Dr. McVAIL himself draws attention to a very important

point in the construction of these temporary buildings, and that is the need for the use of thoroughly seasoned wood. There is no doubt that many of the obvious drawbacks to these buildings are due in large part to defective construction, and if this be guarded against they are likely to serve very useful purposes for the acute infectious diseases. Unfortunately, some rather serious catastrophes have befallen some of these badly constructed "temporary" buildings, and there are several instances on record in which structures of this description have been completely wrecked during a high storm of wind, the patients having been carried out in blankets and placed under a hedge or otherwise disposed of. But the fact remains that there are many of these temporary buildings in different parts of England which are serving with satisfaction considerable populations, who but for these buildings would be without any isolation accommodation whatever. It has also to be remembered that not improbably in the near future the open-air method of treatment will be adopted in growing measure in connexion with isolation hospitals, and already at Nottingham Dr. PHILIP BOODBYER is treating cases of enteric fever and certain other diseases in this fashion. It is clear that if this practice becomes general the need for extensive isolation blocks of stone or brick ceases to exist.

As to sanatoriums for consumption, an inspection of the illustrations contained in Dr. H. T. BULSTRODE'S report to the Local Government Board upon these institutions will suffice to show that already a considerable proportion of the public institutions in this country are composed of materials to which the term "temporary" would be used, and there appears to be no evidence whatever to lead to the conclusion that the patients treated in the temporary structures fare less favourably than those housed in expensive palaces upon which several hundred pounds per bed have been expended; in fact, it is believed by many who have had experience of sanatoriums that those patients who are almost entirely in the open air fare better than those in the wards, and Dr. F. W. BURTON-FANNING at his sanatorium at Kelling has, we believe, found that patients whose temperature while kept in the wards was persistently elevated have had a normal temperature after a short rest in an open shelter. In all these circumstances it seems regrettable that the high cost of many modern sanatoriums is allowed to stand in the way of the provision of cheaper structures by leading the public to believe that the tuberculous sick can only be provided for in buildings which must cost at least £400 to £500 per bed. We are afraid that this belief has something to do with the small number of institutions erected recently.

Cholera in Europe in 1909.

It is a somewhat remarkable circumstance that the public mind in this country seems so little disturbed nowadays by the appearance of cholera in Europe, and that even the landing of an occasional shipborne case at one of our ports gives rise to no alarm. Our readers are doubtless aware that it was not ever thus, and that in days not so long distant the British ratepayer had as much reason for anxiety as many of his continental contemporaries. Indeed, our forefathers would have read with fear and anxiety even such a

communication as we publish this week from the British Delegate on the Constantinople Board of Health, giving an account of the spread of cholera in Europe in 1909. It appears from this report that cholera has been epidemic in European Russia during each of the last three years, and that the outbreak in 1909 was of considerable dimensions. From Russia cholera was conveyed by rail across the German frontier into East Prussia, as also down the River Memel into the same province. Owing to the excellent measures in force in Germany the disease in no case spread after i had been detected. From St. Petersburg and from certain Baltic ports cholera was carried on board ships to various European countries; but, as in Germany, the measures applied at Swedish, Norwegian, Danish, and English ports prevented any spread from the imported cases. In Holland, however, a sharp outbreak of cholera occurred at Rotterdam in the autumn, the infection having been carried there from Russia on shipboard; scattered cases owing their origin to Rotterdam were also observed along some of the Dutch waterways; and just across the Belgium frontier two groups of cases were also notified. This is practically all the cholera that occurred in Europe during 1909. With the exception of Russia, which is notoriously lagging behind in sanitary matters, particularly in neglecting protection of its water-supplies, none of the other European nations found much difficulty in dealing with imported cholera. It is well to bear in mind that the methods now employed by the most enlightened nations are those for which England has striven for many years and which she has endeavoured to induce successive international congresses to accept. For a long time the other Powers rejected these methods as being inadequate, and it was contended that only a seagirt land like Britain could run the risk of employing them. With the advance of knowledge and accumulation of experience continental opinion has come round to England's way of dealing with cholera.

This method imposes no restrictions upon intercourse between one community and another-town and town, nation and nation. England is content with providing for the care of persons actually sick and with obtaining the destruction of whatever may be harmful in the discharges from the cholera cases; and for the rest each community (under European conditions) can, if it pleases, render cholera harmless for itself by the adoption of practices which are profitable against other diseases as well as cholera. In land and sea traffic England has advocated the dispensing with those detentions known as quarantines, for they have been found in practice "to result rather in hazardous concealments and evasions than in any effectual exclusion of cholera." Thus it will be seen that England has depended in the first instance on general sanitary improvements as the basis of cholera prevention, and specially the safeguarding of public water-supplies. Further, to our port sanitary authorities has been entrusted the important duty of arresting actual or suspected cases of cholera on their arrival from infected countries. How well the officers of these port authorities have done their duty the records of this country in late years will testify. Placing implicit confidence in the authorities, the ratepayer, though he grumbles sometimes at the cost, sleeps in his bed in peace, notwithstanding that

cholera may be spreading on the continent. This system has not been evolved without a great struggle. A little over 50 years ago CHARLES KINGSLEY raised his powerful voice in protest against the apathy of the British Parliament respecting sanitary reform when cholera was knocking at the gate. We may be pardoned if we give here a quotation from an article published in 1858 in Frazer's Magazine by him: "The cholera, as was to be expected, has reappeared in England again; and England, as was to be expected, has taken no sufficient steps towards meeting it; so that if, as seems too probable, the disease should spread next summer, we may count with tolerable certainty upon a loss of some 10,000 lives. That 10,000 or 1000 innocent people should die, of whom most, if not all, might be saved alive, would seem at first sight a matter serious enough for the attention of 'philanthropists.' Those who abhor the practice of hanging one man would, one fancies, abhor equally that of poisoning many; and would protest as earnestly against the painful capital punishment of diarrhœa as against the painless one of hempen rope. Those who demand mercy for the Sepoy and immunity for the Coolie women of Delhi, unsexed by their brutal and shameless cruelty, would, one fancies, demand mercy also for the British workman and immunity for his wife and family. It is therefore somewhat startling to find that the British nation reserves to itself, though it forbids to its armies, the right of putting to death men, women, and children." That cholera in the past has killed many victims in England cannot be denied. As examples we may mention that in 1848 over 53,000 persons died from the disease in this country; and as late as 1866 14,378 deaths were referred to cholera in England, of which 5596 occurred in London. In the same year in Scotland 1170 cholera deaths were registered, and in Ireland 2501, of which 1459 occurred in Dublin. It has been, unfortunately, the custom for English Governments, in the past at least, to regard the advice of their medical experts with some distrust. Sanitary reformers have been regarded as dreamers, theorists, enthusiasts, unpractical men, faddists, to follow whose advice would cost the nation money. This view is not unknown in the present day, but the cost of sanitary works and the cost of sanitary administration in this country have more than justified themselves, not only in respect of cholera, but as regards other preventable diseases. The pioneers in this good work did not live to see the fruit of their labours, but they died in faith, as all good and true men die, "not having received the promises," but their works live after them.

Having attained this power over cholera, England cannot afford to relax her efforts. Pandemics of cholera arising in India sweep from time to time across Asia from east to west, and reaching the borders of Europe follow the usual route and penetrate into the interior of Russia by way of Astrachan and the mouth of the Volga. From Russia, whose neglected sanitary condition must be regarded as a menace to the health of Europe, the infection, as we have seen, is liable to be carried by rail, by river, or by sea to other western countries. It is, therefore, necessary to maintain a high standard of sanitation in England through constant and systematic inspection of our riparian and inland districts; we must maintain our line of sentries at our ports

to arrest the infected traveller as soon as he arrives and isolate him before he can do mischief to others. Our success depends greatly on the ability and efficiency of our medical officers of health, especially at our ports, whose work we think has hardly received that acknowledgment which it undoubtedly deserves. We have hardly left ourselves space to point out that painful experiments on human life upon a large scale have been needed to convince some Governments as to the soundness of the advice submitted by their medical advisers. The Broad-street pump disaster had its uses, as also had Hamburg's bitter experience in 1892. Such lessons have been repeated time after time in Russia, and more especially in St. Petersburg, but so far without definite result. Some allowance has, however, to be made owing to the present disturbed internal condition of that country. We trust that when these political clouds have passed away sanitary reform will be given the first importance, so that the dangers which from year to year threaten Europe from Russia may be speedily removed.

Annotations.

"Ne quid nimis."

THE BEIT MEMORIAL FELLOWSHIPS FOR MEDICAL RESEARCH.

WE publish in another column the details of the magnificent donation to science made by Mr. Otto Beit in memory of his brother, the late Alfred Beit. This donation is an event the importance of which in regard to those who are doing medical research work in the metropolis can hardly be over-estimated. We heartly thank Mr. Beit for his openhandedness, while the names of the trustees and of the advisory board form a full guarantee that the Fund will be wisely administered. The influence of Mr. Beit's act on medical education in London will be very great.

KING EDWARD'S HOSPITAL FUND FOR LONDON.

THE Prince of Wales presided over a meeting of the General Council of King Edward's Hospital Fund for London which was held at Marlborough House on Dec. 13th for the purpose of awarding grants. The amount received by the Fund to Dec. 9th, after payment of expenses, is £133,977 5s. 4d., the League of Mercy again renewing its contribution of £19,000. The amount for distribution this year is £147,000 (with £3000 for convalescent homes), while the number of hospitals applying for grants is 103 as against 105 last year. The Prince of Wales moved the adoption of the various reports, which were carried unanimously. In reviewing the work of the year he referred to the loss which the Fund had sustained by the death of Mr. H. H. Clutton and of Mr. Marcus Gunn, who, as members of the Board of Visitors, had rendered invaluable service for many years. The largest donation received during the year was one of £4775, representing one half of the present available surplus of the Franco. British Exhibition. The amount available for distribution, namely, £150,000, represented the aim of the Fund and was therefore a landmark in its history. The distribution of such a large sum could not, however, be maintained without an effort. The income from investments had not yet reached £70,000, and it was necessary to rely upon annual subscriptions, donations, including the contributions from the League of Mercy, and legacies for the balance. The annual subscriptions had shown a diminution, but his

Royal Highness hoped that with the revival of trade would be a corresponding increase from this source. Referring to the work of the Distribution Committee, the Prince of Wales called attention to the amalgamation of the Orthopædic Hospitals and of the Hampstead and North-West London Hospitals, but regretted that the hope expressed last year of similar action on the part of the Throat, Nose, and Ear Hospitals had not yet been fulfilled. Considerable attention had been given to the consideration of proposals for the extension or improvement of hospital accommodation, and a subcommittee had been appointed to collect evidence with regard to the expenses of charity entertainments. That committee had arrived at the conclusion that there was no evidence of widespread extravagance or abuse, though there were certain dangers to be avoided. The proceedings terminated with a vote of thanks to His Royal Highness.

OLIVER GOLDSMITH.

On Nov. 29th Sir James Crichton-Browne delivered by invitation an address before the Society of Authors upon Oliver Goldsmith. He told his audience that his presence there was due to the fact that the secretary of the society had informed him that he and Dr. Goldsmith were born on the same day-namely, Nov. 29th-and hence the society considered it fitting that Sir James Crichton-Browne should be asked to speak upon Goldsmith. When, however, our gifted medical orator applied to the Dictionary of National Biography he found that Goldsmith had been born on Nov. 10th. The mistake obviously arose from the date being given on the memorial tablet in Westminster Abbey as Nov. 29th, and for this error no less a person than Johnson is responsible. 10th, however, was the date, and we should like to think that the actual time was just when the 10th was passing into the 11th, for that is St. Martin's Day, and if ever there was a follower of the saint who while yet a pagan divided his one cloak with the beggar it was Goldsmith. Sir James Crichton-Browne gave his hearers an account of Goldsmith's life, that shiftless, happy-go-lucky life, in which the darkness of debt, duns, bailiffs, and starvation was lightened by that "happy knack of hoping" which he claimed for himself and which he assuredly possessed. Though living in the eighteenth century Goldsmith was a throw-back to the wandering scholar of the Middle Ages. He studied medicine more or less at Edinburgh, when his uncle, Mr. Contarine, suggested that he should finish his studies at Leyden. He agreed; but being arrested for a debt not his own, but incurred by his having been surety for a friend, he embarked for Bordeaux. The ship had to put in to Newcastle, and there Goldsmith was arrested as being concerned in a plot to enlist Scotsmen for the French army. He was imprisoned, and on his release found that the ship had sailed. She was wrecked at the mouth of the Garonne and every soul on board was drowned. Goldsmith, however, had found a ship starting for Rotterdam, and sailing in her he reached that port after a nine days' voyage, whence he travelled to Levden. There he studied medicine and anatomy under Albinus, gambled away his substance, and was reduced to poverty. Being provided with funds by the generosity of Mr. Ellis, clerk of the Irish House of Commons, he set out for a continental tour. Characteristically, however, he saw some magnificent tulips, and remembering how fond Mr. Contarine was of flowers he spent all his money in bulbs and sent them to his uncle. Again penniless, he started to walk, and his account of his travels reminds the reader of nothing so much as the wanderings of those mediæval scholars whose songs are enshrined in the Carmina Burana. He had one new shirt and a German flute. He could speak French, a little Italian.

and a certain amount of Latin. He walked all day, and as evening drew on he played Irish airs on his flute which won him a night's lodging from the peasantry. He occasionally put up at a religious house, where it was still the custom that on certain days any wandering scholar who could maintain a thesis with ability would be rewarded with a little money, a dinner, and a bed. "Thus," he says, "I fought my way from convent to convent, walked from city to city, examined mankind more nearly, and, if I may so express it, saw both sides of the picture." He eventually arrived at Padua, in which University he may have taken his degree, although, on the other hand, the credit of so celebrated a graduate may be claimed by Louvain. He returned to England in 1756, as usual penniless. For a further account of his struggles, his debts, his successes, and his charities, all ably set forth in Sir James Crichton-Browne's address, we have not the space. That delightful comedy, She Stoops to Conquer, was first acted on March 15th, 1773. Walpole allows that it "succeeded prodigiously," and, he adds, "makes you laugh very much"; yet "it is a very wretched comedy." He died in 1774 from what Walpole calls a "purple fever." Sir James Crichton-Browne considers that probably the cause of death was chronic nephritis and uramia, possibly assisted by James' powders, which despite the entreaties of his medical man Goldsmith insisted on taking. So ended at the early age of 46 years one of the most attractive characters in literature. Johnson loved, admired, and helped him, and as to his writings, they are the treasures of all who read them. Well did Sir James Crichton-Browne say of the poems that they "seem to have the sweet scent of Surrey lavender, delicate and refreshing amid the pungent surprises and meretricious suggestions of modern perfumery of the coal tar series.' Walpole's dicta, "Goldsmith was an idiot, with once or twice a fit of parts," and "the poor soul had sometimes parts, but never common sense," are, we fear, true to a certain extent, but for happiness and the power of making other people happy compare his life to that of Swift, whose life was a chronic fit of parts. In more religions than one blessings are promised to the foolish, and if Goldsmith was foolish in a worldly sense he certainly gained the blessings.

THE MEDICAL DIRECTORY, 1910.

Messrs. J. and A. Churchill have issued their sixty-sixth annual Medical Directory 1 for London, the United Kingdom, and the Services, and we find it fuller of information than ever. On an early page is a tabulated numerical summary of the medical profession in each of the first 10 years of the present century. Whereas there were 36,354 qualified medical practitioners in 1901, there has been an annual increase ever since, the smallest increase of 289 having occurred in 1908-1909. The present issue shows an increase of 566 names over last year, and there are now 40,558 names of men and women holding British qualifications on the directory. Of these, 6427 reside in the London district, 17,568 in the English provinces, 1403 in Wales, 3947 in Scotland, 2723 in Ireland, 5188 abroad, whilst 3302 are in the services. An addition to the work is . a section devoted to British health resorts compiled by Mr. Norman Hay Forbes, F.R.C.S. Edin., in which brief descriptions are given of the topography, soil, and climate of 82 places in the British Isles, with a note of the diseases which may be treated advantageously at each. This section should be of use to many practitioners, for so far as we have tested the information it contains it is compiled with accuracy. We think it likely that the publishers will have difficulty in keeping it within its present limits. The list of

hospitals in the London district has undergone some revision and the summary of the principal laws affecting the medical profession, for which Mr. W. O. Hodges is now responsible, remains a valuable part of the work. The scope of the biographical details is unaltered.

THE DESTRUCTION OF RATS ON SHIPBOARD.

THE depredations of rats are notoriously a source of great loss to farmers, grain-merchants, and most of the traders concerned in the production and distribution of food-supplies, but no systematic destruction of rats on a large scale was attempted until microscopists discovered that they were liable to be infected with the bacillus of plague. Bacteriological research here came to the assistance of practical medicine in explaining both the causation of sporadic cases of plague in the human subject and the recurrence of epidemics which had apparently come to an end. Rats invariably abound in waterside warehouses and storage places, and as they come and go quite freely between wharves and the vessels lying alongside it immediately became evident that rats on board a vessel might convey plague from port to port, even across a great expanse of sea, without any cases among the crew. Hence the anxiety of sanitarians and epidemiologists for the extermination of rats on shipboard. It will be remembered that the Maritime Medicine section of the recent International Medical Congress discussed the means available. (THE LANCET, Sept. 18th, p. 875.) Many methods have been suggested for this purpose and a useful summary of them will be found in an article by Dr. Carl Prausnitz published in the July-October issue of the Journal of the Incorporated Society for the Destruction of Vermin. He first mentions the carrying of dogs, cats, and ferrets, although it is obvious that they would be of little service on board large vessels with holds full of cargo. Much more may be accomplished by the use of traps, several varieties of which are described and figured in the article; a well-known shipping company, Messrs. Elder Dempster and Co., pay a reward of 2d. for each rat caught on board their vessels, with the result that over 10,000 were destroyed during the year 1908; on an average between 20 and 30 rats were captured on each ship, with a maximum yield of 62 on one vessel. Poisons are also used for killing rats. One such poison is prepared from the pharmacopœial squill, whilst another consists of a powdery bait mixed with plaster-of-Paris, which proves fatal by absorbing moisture in the stomach of the animal and then hardening. The ordinary poisons used for rats-namely, phosphorus, arsenic, and strychnine -are hardly superior in their action to traps, while being at the same time liable to prove fatal to human beings, either by careless handling or through criminal intent. Phosphorous preparations are readily eaten by rats, especially if they are made up with plenty of fat, which, besides rendering them more palatable, also increases their toxicity. Such preparations are only reliable if smelling strongly of phosphorus, since under the oxidising influence of air they are gradually transformed into non-poisonous compounds, and therefore require to be renewed at short intervals. The smell given off by phosphorus by its warning effect also lessens the risk of danger to human life. It has been suggested that the luminosity of phosphorus in the dark attracts the rats. Poisonous gases are more efficacious for the destruction of rats on shipboard. Formerly it was the custom to take about one pound of sulphur and two pounds of charcoal per 1000 cubic feet of hold space: these were placed in braziers in the empty holds and allowed to burn with a slow flame. The hatches being battened down and the ventilators closed the flame extinguished itself as soon as sufficient charcoal

¹ The Medical Directory, 1910. London: J. and A. Churchill Pp. xxxvi. + 2071. Price 14s. net.

had been burnt to produce from 2 to 3 per cent. of carbonic acid in the air. After 10 hours the hatches were opened. This method is still used in some ports as a preventive measure before a vessel is loaded. Instead of the combustion of sulphur R. Pictet suggested the use of a mixture of compressed and liquefled sulphur dioxide and carbonic acid, contained in cylinders. This mixture, which he called "pictolin," is expensive and its use has not been generally adopted. Carbonic acid alone is not of much value, as rats can live in an atmosphere containing as much as 30 per cent., whilst lights cease to burn in 12.5 per cent. of carbonic acid. Carbon monoxide, on the other hand, is extremely fatal to rodents and is easily obtained at a low cost by burning coke in a limited supply of air. Dr. Prausnitz gives a full description of the apparatus designed by Dr. Nocht and Dr. Giemsa for this purpose and now in routine use in the port of Hamburg for all ships carrying plague-infected rats. Owing to the high penetrative power of the gas this method may be used in a fully laden ship, but there is a danger of persons losing their lives through accidentally inhaling the gas, and there is the further drawback that it does not destroy either insects or infection. Some of these disadvantages are obviated by the Clayton method, in which the gas employed is sulphur dioxide obtained by the combustion of roll sulphur. This method was invented by Mr. T. A. Clayton in conjunction with Dr. S. R. Olliphant, the President of the State Board of Health, Louisiana. It has been extensively employed both for purposes of fire extinction and for the destruction of all kinds of vermin. The complicated apparatus required for working the process is fully described by Dr. Prausnitz, as well as the "Marot" method and Dr. Wade's "auto-injector method," in both of which liquefied sulphur dioxide stored in drums is used. It has been proposed to destroy rats by laying down preparations containing a bacterial virus, which produces fatal septicæmia in a few days, and which might be propagated by healthy rats eating the dead ones. The objection to these preparations, at least for use on shipboard, is that the organisms in question belong to the paratyphoid or enteritis group, which give rise to the well-known occasional outbreaks of food poisoning or so-called "ptomaine" poisoning.

THE NATIONAL LEAGUE FOR PHYSICAL EDUCATION AND IMPROVEMENT.

THIS league, which held its fourth annual meeting at the Royal United Service Institute under the presidency of the Bishop of Ripon on Dec. 9th, exists to stimulate public interest in the physical improvement of the people, to coördinate and extend the work of agencies already established, and to start new organisations for the same end; to make known the legal sanitary powers already possessed by public authorities and to promote fresh legislation where necessary. The membership now is considerable and last year there was a substantial increase in subscriptions and donations, but the extension of the work obviously depends largely on continually growing financial support. working alliance between the league and the British Institute of Social Service has proved advantageous. The report alludes with regret to the resignation of Mr. F. J. Matheson. the joint secretary of the two organisations, and of Dr. May Thorne from the executive council, and records the election to that body of Mr. James Cantlie and Mr. F. E. Fremantle. The new work which is contemplated during the coming year includes the formation of a London Directory of Health Promoting Agencies, whether supported by the State or by voluntary aid, including particulars of gymnastic and drill classes and country holiday camps. An investiga-

in institutions, such as orphanages and special homes for defective children. Two joint committees of the league considered during the year the questions of physical education and of the milk-supply. The former unanimously adopted a series of recommendations that the physical education of school children should be compulsory in all schools subject to proper medical control, and that it should form part of the regular school curriculum and not be carried out in the hours of play, that thoroughly qualified gymnastic specialists should be attached to all secondary and intermediate schools, and that the Swedish system should form the basis of their instruction. The chief of the remaining sections of the report dealt with the branch reports of the league and with the sale of its publications. The amount of sales was a most satisfactory feature of the year's work; for instance, the sale of the leaflet on "How to Bring up a Baby "had increased from 8000 in the previous year to 38,000 in the year under review. At the meeting to which this report was presented the following resolutions were submitted and adopted. On the motion of Sir Hugh Beevor, seconded by Sir Lauder Brunton :-

This meeting deeply regrets that the legislation so imperatively required for the purpose of ensuring a pure milk-supply throughout the country has been deferred, and urges all Members of Parliament, irrespective of party, to unite in passing the requisite Bill into law as soon as possible in the course of the ensuing year.

On the motion of Sir William S. Church, seconded by Lord Meath: --

This meeting heartily welcomes the steps which have been taken to secure the national recognition of the importance of physical training and exercises under the most approved systems in schools of all grades, but is convinced that in order to provide a sufficient number of competent teachers in this department, it is essential that institutes for the training and certification of such teachers be established at the public expanse. public expense

And on the motion of Sir Richard Caton, seconded by Mr. Douglas Eyre :-

Whatever reforms eventually result from the reports of the Royal Commission on the Poor-law it is of urgent importance for the community to secure without delay adequate provision:

(a) For the treatment of the mentally defective separately and apart from all other persons requiring public assistance.

(b) For the boarding-out and training for rural industries, not only at home, but also in the colonies, of State children, and their disassociation as far as possible from institutional treatment and from the atmosphere of paucerism. atmosphere of pauperism.

Those who wish to express their sympathy with the league in a practical manner should communicate with the secretary, Denison House, Vauxhall Bridge-road, S.W.

BROCA'S CONVOLUTION AND MOTOR APHASIA.

AT a meeting of the Société Clinique de Médecine Mentale of Paris held on July 19th M. Marcel Briand and M. Brissot exhibited the brain of a case of motor aphasia of considerable interest, as the patient had been under observation for a number of years, and her clinical history had been published by Dejerine in 1898. A report of the communication will be found in the Revue de Psychiatrie for August. In 1896, at the age of 27 years, an apparently healthy young woman suddenly was seized with a stroke of paralysis and fell to the ground, remaining unconscious for ten hours. On recovering her senses she found herself to be hemiplegic on the right side and to have lost all power of speech. Before the ictus she had been able to speak four languages, French, German, Italian, and Spanish, but from that moment and afterwards she was unable to pronounce anything more than the two simple words, "oh non." A slight degree of word blindness, which was remarked, disappeared after a few months. The patient came under the observation of Professor Dejerine at the Salpêtrière, who considered the case very striking, the intelligence being of a high order and other cerebral functions being to all appearance intact. Her condition remained practically unchanged for ten years. tion is also being made into the medical inspection of children | Re-examination by M. Briand in May, 1908, showed the

existence of a spastic right hemiplegia, with exaggerated reflexes on that side. Spontaneous speech was nil, except for "oh non," used correctly and in its proper sense, however. The patient was unable to repeat words on request. With the letters of the alphabet before her she was able to spell out any word in any of her four languages, either spontaneously or to order. There was not the slightest trace of word deafness in any of these languages. Writing was perfectly performed with the left hand, spontaneously and to dictation, and copying was accurate. There was neither mind blindness nor mind deafness; no astereognosis or apraxia. There was no indication whatever of intellectual defect; the patient was well aware of her surroundings, of events in her life; memory, attention, and judgment were unimpaired. The case appeared to be one of pure motor aphasia, and in view of recent controversies unusually valuable. On May 15th, 1909, death occurred from renal causes and a necropsy was secured. The whole of the posterior end of the third left frontal convolution was completely destroyed by an old area of softening. In addition, on the right side another area of softening involved the inferior parietal convolution and the anterior and superior part of the angular gyrus. This cavity was roughly 2 centimetres in diameter and 2½ centimetres in depth, yet it had given rise to no symptoms of sensory aphasia. In view of the contention of some members of the Parisian school that Broca's convolution has nothing to do with the production of motor aphasia, a case of the above description ought to be noted by all who are interested in the subject.

THE KEEPING OF PIGS.

TASTE in the matter of pig-keeping varies a good deal in different parts of the world and, indeed, of the British Isles, and those who have wandered about the rural districts of Ireland must have felt that difficulties might arise in any very vigorous attempt to exact a very high standard in the matter. But even in Ireland common consent has accepted a different standard for urban as against purely rural districts. In England and Wales Section 47 of the Public Health Act, 1875, provides for a penalty against any person who in an urban district keeps any swine or pigsty in any dwelling-house, or so as to be a nuisance to any person, while Section 91 provides that any animal so kept as to be a nuisance or injurious to health is an offence. Although in England swine are very rarely, if ever, found actually kept in dwelling-houses, they are frequently, especially in some districts where the pork industry flourishes, kept under eminently undesirable conditions, and in this connexion a correspondent refers to an instance in which premises under a carpenter's workshop have been let and the tenant keeps pigs therein. It is not quite clear from our correspondent's communication whether the pigs are kept in a part of the premises in actual occupation of the new tenant, or whether the tenant simply uses all the premises for the purpose of pig-keeping. In any case the stench arising from the pigkeeping is so great that the carpenter cannot pursue his calling, and our correspondent asks whether the odour is injurious to health. It seems to us that the case is one, whether in an urban or rural district, in which the local medical officer of health and sanitary inspector ought to be able to afford the carpenter relief, and if by any chance the circumstances were such that the Public Health Act would not touch this case, possibly the carpenter might obtain redress at common law. In many places by-laws have been sanctioned relative to the minimum distance from dwellings at which pigs may be kept, and we believe that a distance of 100 feet has been allowed in some instances. The pig is the victim of what Dr. Ballard, in his classic writings on

offensive trades and the like, regards as a mistaken popular prejudice, and this prejudice militates against any trouble being taken to keep pigs in a cleanly state. In Ballard's view the pig is naturally a clean, not a dirty, animal, and his wallowing in the mire has for its object cutaneous cleansing, the mud standing to the pig in relation to soap to the human being, this mud when dry caking and falling off and carrying with it the hairs and cutaneous débris which irritate him. Similarly Ballard is found in defence of the good habits of the pig. The animal, according to him, does not habitually prefer disgusting food. In the wild state the pig does not eat garbage, but acorns, roots, and fallen fruits. It is said, too, that pigs which are provided with outdoor runs will never foul their beds, and that on very large pig runs, where pigs are provided with shelters for the night, a pig fouling the common bed is very severely handled by his fellows. There can certainly be no question that pigs may easily be kept in a cleanly state in properly constructed sties, and the more modern by-laws in reference to pig-keeping have relation more to the method of keeping the pigs than to the position of the sties. Experience shows that pigs kept in a thoroughly cleanly state thrive better than when in filth, and the nuisance relating to pig-keeping may by the exercise of moderate care be reduced to very small dimensions.

CHRONIC INFECTIVE ENDOCARDITIS.

BLOOD cultures made during life frequently serve to establish the nature of a febrile infection, and this is especially true in regard to infective endocarditis, both acute and chronic. That a peculiar form of infective endocarditis characterised by chronicity exists has been established by Professor W. Osler, and his account of ten cases published in the last issue of the Quarterly Journal of Medicine is an interesting contribution to the literature of the subject-Dr. Frank Billings of Chicago also gives details of 14 cases of chronic infective endocarditis, which he has himself observed, in an interesting paper in the Archives of Internal Medicine of Nov. 15th. He finds, as in the cases seen by Professor Osler, that the disease may be manifested for long periods by a slight feverish condition only. He is, however, of opinion that other symptoms are usually present but that they escape observation. Chills of varving severity, coming on at irregular intervals, and followed by fever and sweating, sometimes occur, and the cases may be mistaken for incipient tuberculosis, for colds, or for malaria. In his own series many of the cases showed a protracted course: in one patient the symptoms commenced two years before the condition was diagnosed, in another 14 months. A noteworthy feature of the condition is that in many instances the patients are ambulatory and do not become bedridden until some months have elapsed. Bacteriological investigation of the 14 cases showed the pneumococcus in 11 cases and a streptococcus in three. Dr. E. C. Rosenow, investigating these organisms, found that those obtained in the 11 patients with pneumococcemia had many of the morphological characters of streptococci, but cultural and animal experiments demonstrated that they were pneumococci. They all produced fine colonies on bloodagar plates. Hæmolysis did not occur. When grown in isolated colonies on the surface of blood-agar slants they all had a greater or lesser tendency to adhere tightly to the surface, and the more chronic the case and the later in the course of the disease the organism was isolated, the more marked was this tendency to adhere. The organism is Gram-positive; as a rule it is not surrounded by a capsule, and when grown in broth or litmus milk it forms diplococci with many very long conglomerate

chains. Cultures from all the patients showed a low degree of virulence towards animals, but endocarditis and pericarditis were obtained whether the organisms were administered subcutaneously or by intraperitoneal or intravenous injection. The three cases in which a streptococcus was reported were not examined as fully as the others, and Dr. Rosenow believes that had this been done they also would have been proved to be pneumococci. Dr. Billings suggests that in all cases where streptococcal forms are isolated from the blood these further investigations should be made, since they may possibly establish that the pneumococcus is the most frequent infective agent in endocarditis. With regard to the source of infection in his cases, Dr. Billings found that in one the condition followed pneumonia, in two tonsillitis had preceded it, and in two others alveolar abscess had occurred. In one case influenza was a possible factor in the genesis of the infection. An old heart lesion was present in seven of the cases, six of whom had suffered from rheumatic fever; the remaining one had had chorea. The valves involved in the 14 cases were as follows: aortic valve alone in 1; mitral alone in 6; pulmonary semilunars alone in 1; both aortic and mitral in 5; and mitral and tricuspid together in 1. With regard to treatment by vaccines, Dr. Billings found that inoculations of patients with large doses of their own dead pneumococci was always harmful and that small doses were devoid of benefit and even probably harmful.

THE PROPOSAL TO APPOINT A NEW MEDICAL OFFICER TO THE LONDON COUNTY COUNCIL.

As we announced last week, a subcommittee of the education committee of the London County Council has reported in favour of recommending the Council to appoint an additional assistant medical officer in the public health department, on account of the great amount of extra work entailed on that department by the systematic medical examination and treatment of school children. The subcommittee's report stated that when Dr. James Kerr was appointed as school medical officer by the London School Board his duties were to supervise the medical work generally, conduct correspondence, examine male candidates for employment, visit schools where outbreaks of infectious disease occurred, conduct inquiries, and give advice. It was possible to carry out these duties in 1902, but there had been a rapid expansion since, and it was now quite impossible for Dr. Kerr to exercise effective supervision without further assistance. The staff requiring superintendence numbered in 1902 - medical, 3; nursing, 1; clerical, 4; in 1909 the corresponding figures were 68, 54, and 28. Even these figures did not adequately represent the actual increase in the scope of the work. Various schemes had been developed since 1902 and were now in full working order, and in all departments the amount of detail was far greater. The Council now undertook the cleansing (heads, bodies, and clothes) of the children and examined their vision; it had established a laboratory for the bacteriological control of diphtheria; it exercised control of ringworm diagnosis; undertook inquiries into measles and scarlet fever, conditions of special senses, blindness, deafness, and aphasia; the medical examination of all scholarship candidates and the inspection of students in training colleges, pupil teachers, and the scholars of secondary and trade schools. The medical officer had to supervise all this work and many other matters too numerous to mention, and it was now almost impossible for him to master many recent developments, his whole time being occupied by the work already undertaken. The work of the care committees, the feeding of school children, questions of physical exercises, and the teaching of hygiene all required more thorough organisation, but the medical officer could not undertake it without

further assistance. The subcommittee thought the superintendence of the outside medical staff was almost one officer's work, and that the medical men and nurses should be seen at work not only in the statutory medical inspection but also in their duties in connexion with cleansing, special schools, and many other things. The relation in which the medical side of the Council's work had been brought recently with the sanitary work of the borough councils had necessitated a great amount of personal visiting and conferences with the medical officers of health of the various boroughs. The only full-time assistant medical officer was appointed in 1903, prior to the passing of the Education (Administrative Provisions) and Children Acts. The consideration of the report was postponed by the education committee, and even if it should reach the Council during the present session the past policy of that body does not give us much hope that the appointment will be made. There is no doubt that a strong case has been made out for it, but the creation of a new salary beginning at £500 a year and rising to £700 will probably give prolonged pause before

THE DEATH OF DR. LUDWIG MOND, F.R.S.

THE death of Dr. Ludwig Mond, F.R.S., on Dec. 11th last, removes a giant amongst the industrial chemists of the country. His chemical researches have met with enormous practical applications, none of which, however, can be compared for commercial importance with his discovery, which was the outcome of both his chemical and engineering knowledge, of the use of ammonia and carbonic acid gas in the conversion of common salt into carbonate of soda. He also observed the formation of those curious metallo-gases known as carbonyls, of which iron and nickel carbonyl are the most familiar examples. They are gaseous compounds of the metals with carbonic oxide, and the principle is now carried into effect in recovering nickel from its ore and for the purposes of purification. Dr. Ludwig Mond worked hard to encourage research, especially amongst young chemists with limited means at their disposal. He founded the Davy-Faraday Laboratory of the Royal Institution and having fitted it with all the appliances necessary for modern chemical research gave it an ample endowment. The investment has proved a fruitful one for chemical science, for some excellent and valuable original work has been done in the Davy-Faraday Laboratory. Dr. Ludwig Mond's name will go down to posterity as that of a man who did much to show the power and importance of research and who gave abundantly by various ways and means the opportunity to others of seeking out new facts. Can a man of science seek a better verdict!

RESEARCH DEFENCE SOCIETY.

THE meeting held at the Royal Pavilion, Brighton, on Dec. 13th, under the auspices of the Research Defence Society, was well attended, and the formation of the Brighton and Sussex branch was confirmed. The Earl of Cromer, as President of the society, presided, and he was supported by a thoroughly representative gathering of the medical profession in Brighton and Hove and other parts of Sussex. Lord Cromer, in opening the proceedings, alluded to the great loss the nation in general, and more especially those interested in medical research, had sustained by the death of Lord Selby, chairman of the Commission appointed a few years ago to inquire into the question of vivisection. Mr. Abel Ram, who was also a member of the Commission, had succeeded Lord Selby as chairman, and Lord Cromer remarked that he had been in communication with that gentleman, who had promised to do his utmost to secure the issue of the report early in the new year. Lord Cromer went on to say that humanity was on the side of those who devoted their time, their money, their unselfish labours, and sometimes their health to preserving and prolonging human life. Everybody who chose to go into the subject could satisfy himself beyond any manner of doubt as to the splendid results which had been achieved by bacteriological research. The most eminent men in the medical profession were practically agreed on the point, and, moreover, they were agreed on the fact that this knowledge would never have been reached had it not been for experiments on animals. He showed that in the proceedings of scientific research pain was very rarely inflicted, and that when it was inflicted it was amply justified by the results which had been obtained in preserving human life and in diminishing human suffering. Sir Arthur Conan Doyle, as president of the newly-formed branch, pointed out that of 88,000 experiments on animals conducted last year 85,000 were merely inoculations or injections, and he held that their opponents, who encouraged the abattoir and discouraged the laboratory, were in a most absurd and illogical position.

THE LATE SIR ALFRED JONES, K.C.M.G.

By the death of Sir Alfred Jones not English medicine only has lost a notable benefactor, for the world has been the gainer from the results achieved already by the Liverpool School of Tropical Medicine, of which he was chairman and virtually the founder, so large a share did he take in its endowment. He was one of the most striking personalities in British commerce, and had the qualities of enterprise and imagination which well entitled him to the name of merchant prince. In no manner was this better shown than in his practical interest in the advance of tropical medicine and in the equipment of expeditions to investigate its problems in partibus. Whereas the early merchant adventurers of England went forth prepared to win their fortunes by fire and sword, Sir Alfred Jones prepared the way for his modern argosies by subsidising men of science to investigate the causes of the diseases that play havoc with human life in tropical countries and the means by which they may be prevented, having the foresight to realise that by such means alone will the ruling nations be able to draw their full commercial tribute from the most fertile regions of the earth, whilst at the same time life will be made more secure for the subject races. In another application of science to trade Sir Alfred Jones showed his sagacity. By constructing special holds in his ships and making arrangements for the careful regulation of their temperature (which was charted four-hourly during the voyage) he proved that it was possible to transport bananas in excellent condition and in enormous quantities from the Canaries and the West Indies to this country, whereby not only his firm were the gainers but also the many poor people to whom a wholesome and palatable fruit was made available at a low price. We have said enough to show that commerce and medicine unite in real regret for the unexpected death of Sir Alfred Jones, a regret felt nowhere more sincerely than in his own city of Liverpool.

A FURTHER NOTE ON ENTERICIN.

WE have received a further communication from Mr. John Maberly of Woodstock, Cape Colony, on the subject of entericin, about which an annotation was published in THE LANCET of Nov. 6th. He states that the plant Monsonia biflora, from which he has obtained this substance, belongs to the natural order Geraniaceæ, and that it grows scattered over the high veldts of South Africa. An allied species, the Monsonia ovata, grows along the coast belt,

especially of the eastern side. He was unable to separate any alkaloid or glucoside, and in his endeavours to separate the active principles of the plant he obtained two sets of bodies-first, bodies of "indefinite chemical composition," to which he applied the name of "entericin," and a second group with astringent properties, to which he attributes the constipating effect produced by the tincture in some cases. In summing up his conclusions he states that the tincture has a distinct curative action on the ulcerative processes in the intestine at any stage of enteric fever and that when given after about the seventeenth or eighteenth day it has the power of cutting short the fever as well. He believes that the mixture of substances to which he has applied the name of entericin, produces similar actions to those of the tincture, but probably with a smaller constipating effect. He does not think that either the tincture or entericin produces any effect in cutting short the course of the fever when administered between the seventh and seventeenth days of the disease, although he is of opinion that if they be given before the development of Widal's reaction they may do so. Between the seventh and seventeenth days they may in some cases produce abdominal pain, and blood in the motions, and Mr. Maberly therefore does not recommend the continuous administration of the drug within that period. He admits that the evidence he has is not sufficient to permit of any definite conclusions as to whether the tincture or any of its separate constituents is the more efficacious. It would seem possible that in Monsonia biflora we possess an agent which is worthy of more extended investigation and trial, both from the pharmaceutical and therapeutic aspects.

A SURVEY OF THE PRESENT POSITION OF CANCER RESEARCH.

AT a well-attended conversazione held at the Polyclinic on the evening of Dec. 10th the chief feature was a brief but extremely interesting demonstration by Dr. E. F. Bashford on some aspects of the investigations of the Imperial Cancer Research, illustrated by lantern slides chiefly representing mice affected with experimental cancer of various organs. Having illustrated the similarities of the disease in uncivilised races of mankind and in animals, Dr. Bashford exhibited slides showing the completeness with which the lesions of cancer could be reproduced experimentally. While the conveyance of cancer from one animal to another by implanting a few living cancer cells might appear at first to demonstrate the reason for the great frequency of the disease, he held that facts proved that cancer was very rarely if ever so transmitted naturally. Subjects of cancer, whether naturally arising or artificially induced, were not sources of danger to other animals. The phenomena of resistance to the inoculation of cancer were explained. A sarcoma of a cat or mouse inoculated into rats would not grow in them, nor did such "vaccinations" protect the rats against subsequent inoculation of a rat sarcoma. Protection, on the other hand, could be induced by the "vaccination" of tumours as well as of the normal tissues of the same species, and even by the "vaccination" of an individual's own tissues. Animals could cure themselves of their tumours. Under given circumstances even 100 per cent. of the inoculated animals did so, and then they were protected against later inoculation of the same tumour. Experiment had demonstrated that a natural cure for cancer did exist, and had already placed in the hands of investigators weapons for ferreting out the nature of its mechanism. Although Dr. Bashford said he would only guarantee at present to protect any animal against inoculation, the evidence that the continued growth of inoculated tumours had been modified, and even brought

to a standstill, was already strong. Nevertheless, this result was still too inconstantly and uncertainly attained for him to arouse hopes of replacing empirical remedies in the immediate future. Meantime there was no alternative to surgical treatment. All empirical modes of treatment had one weakness in common, they only attacked the primary growth; even surgery was largely helpless to deal with metastases. The natural cure for cancer, when found, would be subject to no such limitation. Its triumphs would, in all probability, be in the direction of preventing dissemination and metastases formation. The lecture was listened to attentively and received with much applause.

THE Nobel prize in medicine has been awarded to Professor Theodor Kocher, who has gained a world-wide reputation in connexion with the surgery of the thyroid gland. Professor Wilhelm Ostwald of Leipsic has gained the prize in chemistry, and the prize for physics has been divided between Mr. Marconi and Professor Karl Braun of Strassburg.

A TELEGRAM from the Governor of Mauritius to the Secretary of State for the Colonies states that 26 cases of plague, with 14 deaths, were reported during the week ending Dec. 9th.

THE seventy-first annual report of the Registrar-General of Births, Deaths, and Marriages in England and Wales has been issued this week.

THE first volume of the Army Medical Report for 1908 was published on Dec. 14th.

THE CARE OF POOR-LAW CHILDREN IN BRIGHTON. -For the first time the South-Eastern and Metropolitan Poor-law Conference held its sitting in Brighton last week. The delegates received a mayoral and hospitable welcome, and the Majority and Minority Reports of the Poor-law Commission were vigorously criticised. Discussion on the care of the children occupied the whole of one day's sitting, and the work being carried on at Warren Farm Schools, Brighton, where some 250 boys and girls are being maintained by the guardians, was warmly commended. In reply to a delegate, it was stated that 95 per cent. of the children trained at Warren Farm succeeded in life. Several delegates visited the school and also the Brighton workhouse.

Exhibition of Psychiatry.—The RUSSIAN approaching third Russian Congress of Psychiatry and Neurology in St. Petersburg will be made the occasion of an interesting exhibition. It will be divided into scientific and practical sections. The former will contain subsections dealing with anatomy and physiology, neuro-pathology, psychiatry, experimental psychology, and instruments and bibliography. Besides specimens representing normal and abnormal conditions of the central nervous system there will be shown types and skulls of various races of Russia, apparatus and instruments for the investigation of mental and nervous diseases, tables and charts of results, photographs of patients, The latter section will have subsections and so on. dealing with the nursing of the mentally afflicted, criminology, and medico-pedagogy. Comparative tables the numbers of mentally afflicted in each given district and the total number of them cared for in the hospitals of the community will be collected, as well as tables showing the increase in the annual number of cases of various forms of mental disorder, a graphic representation of the influence of the Russo-Japanese war and the revolutionary movement on the abrupt rise in recent years in the number of the mentally afflicted and many others. The exhibition is being organised by the committee of the congress, with the director of the Psycho-neurological Institute, N. M. Bechtereff, at its head. All information respecting the exhibition can be had of Dr. N. Ya. Smieloff, chief doctor of the St. Panteleimon Hospital at Udielnoi, St. Petersburg.

THE BEIT MEMORIAL FELLOWSHIPS FOR MEDICAL RESEARCH.

WE have to report a most valuable instance of welldirected munificence. The following letter was read to the Senate of the University of London at its meeting on Wednesday, Dec. 15th :-

49, Belgrave-square, S.W. London, 10th Dec., 1909.

MY LORDS AND GENTLEMEN, - It will be within your recollection that my brother, the late Mr. Alfred Beit, in his lifetime and by his will, provided a sum of together £50,000 for the purpose of creating and assisting the Fund of the then proposed "Institute of Medical Sciences."

The formation of this institute owing to a series of circumstances having become impossible, the treasurers of the Fund were directed by an order of the High Court to return all moneys received for this purpose to the donors, and in consequence such part of the above sum as had already been paid was returned to my late brother's executors and by

them paid over to me as his residuary legatee.

It has always been my earnest wish that these moneys in some way should again be devoted to a public purpose as nearly as possible identical with that which had been originally contemplated by my brother. After considerable deliberation with those who had advised him, a plan has been devised the details of which are embodied in the accompanying Deed of Foundation. To give this Fund such extent as to make it, as I sincerely hope, thoroughly useful, I have decided to increase the above mentioned sum to £215,000 so as to yield by investment in Trustees' stocks an annual income of about £7500. I desire to name this Fund "The Beit Memorial Fellowships for Medical Research.

From this title, and on a perusal of the Deed, you will see that the Fund is to be devoted entirely to the furthering of medical research work in all its branches. A sum of £250 a year for three years is to be granted with this object to any man or woman of European descent, graduate of any approved University within the British Empire, who is elected to a Fellowship.

The Fund is to be administered by a Board of Trustees, who in their turn will be assisted by an Advisory Board of medical men. The names of those who have most kindly consented to act appear in the Deed, and I take this opportunity of expressing to both the Trustees and the members of the Advisory Board my sincere gratitude to them for undertaking the duties imposed upon them.

It is my most anxious wish to make this Fund a lasting memorial to my late brother, and I address myself, therefore, to your body, knowing as you do the deep interest Mr. Alfred Beit at all times took in the advancement of medicine and medical research. In view of the fact that such research is to be conducted almost entirely in institutions allied to the University, I venture to ask you to allow me to have the benefit of the advice of your Principal for the time being as one of the Trustees.

I feel convinced that the Trustees as well as the Advisory Board will at all times give every consideration to any recommendation your body may be good enough to pub before them.—I have the honour to be.

> My Lords and Gentlemen, Your most obedient Servant,

Отто Веіт. To the Senate of the University of London.

Mr. Beit's letter is so clear that no words are needed from: us to explain either the scope or the significance of his magnificent generosity. Those who remember the whole story of the proposed "Institute of Medical Sciences" will heartily rejoice that the University of London and University Colleges and Institutes in London, the medical schools and hospitals of London, and the important Imperial and national services which have their home in London have been made the recipient of such a princely endowment. It is hardly necessary to add that when this letter was read to the Senate on Dec. 15th the offer was accepted in terms of the deepest gratitude.

The names of the first trustees are as follows:-The Right Honourable Viscount MILNER, G.C.B., G.C.M.G.; the Right Honourable Lord CURZON OF KEDLESTON, G.C.S.I., G.C.I.E.; the Right Honourable R. B. HALDANE, K.C., M.P.; the

Principal of the University of London (ex-officio) H. A. MIERS, D.Sc., F.R S.; OTTO BEIT; JAMES KINGSTON FOWLER, M.A., M.D., D.Sc. (Hon.); BOURCHIER F. HAWKSLEY.

The Advisory Board is as follows:—Sir T. CLIFFORD ALLBUTT, K.C.B., M.D., F.R.S., Regius Professor of Physic, University of Cambridge; J. Rose Bradford, M.D., D.Sc., F.R.S., Professor of Medicine, University College Hospital Medical School, Secretary of the Royal Society; JAMES KINGSTON FOWLER, M.A., M.D., D.Sc. (Hon.), Senior Physician to the Middlesex Hospital, late Dean of the Faculty of Medicine, University of London; C. J. MARTIN, M.B., F.R.S., Director of the Lister Institute of Preventive Medicine; WILLIAM OSLER, M.D., F.R.S., Regius Professor of Medicine, University of Oxford; E. H. STARLING, M.D., F.R.S., Professor of Physiology, University College, London, University of London.

The temporary office of the scheme is Seymour House, 17, Waterloo-place, Pall Mall, S.W., but all correspondence of candidates for Fellowships and of Fellows should be addressed to the Honorary Secretary, Beit Memorial Fellowships for Medical Research, 35, Clarges-street, Piccadilly, W.

INFORMATION ABOUT THE FELLOWSHIPS.

The Fellowships are open to any person of European descent by both parents, without restriction as to nationality, who at the date of election has taken a degree in any Faculty in any University in the British Empire approved by the trustees, or who, if a female, has passed an examination which would have entitled her, if a male, to take any such degree.

In exceptional cases the trustees may, on the recommendation of the Advisory Board, accept the possession by a Fellow at the date of election of a medical diploma registrable in the United Kingdom as a qualification for a Fellowship in lieu of a degree.

There are no restrictions as to age, and no person is disqualified on account of his or her religious or medical

Ten Fellowships of the annual value of £250 are awarded annually, or such larger or smaller number as the trustees may determine. No canvassing is allowed, and testimonials need not be sent with the applications.

The first election of Fellows will be made on or about March 1st, 1910. The notice of this election will be given on or about Dec. 18th, 1909 (see advertisement columns of THE LANCET, p. 62). Applications must be received on or before Jan. 17th, 1910.

The usual tenure of a Fellowship is for three years, subject to determination by the trustees at the end of the first or second year, if in their judgment the work of the Fellow during the year does not justify the r-tention of the Fellowship. In exceptional cases the Advisory Board may recommend the extension of the Fellowship for a further period of one year—i.e., four years in all—but no longer. A report must accompany any such recommendation giving the special reasons for the extension. The trustees may in their discretion, for what they may consider grave cause, suspend for such time as they may think fit or remove any Fellow from his Fellowship, and from that date his emoluments cease.

The following are the recognised places of research, and Fellows may carry on research only at the place authorised by the trustees.

- A. University and University Colleges and Institutes.
- 1. The Physiological Laboratory of the University of London, South Kensington.
- 2. The Institute of Physiology, University College, London, University of London.
- 3. The Laboratories of the Departments of Chemisty, Biology, Physics, Anatomy, Pharmacology and Hygiene, University College, London, University of London.
- 4. The Laboratories of the Departments of Chemistry, Biology, Physics, Anatomy, Physiology, Pharmacology, and Hygiene, King's College, London, University of London.
 - 5. The Brown Institution, University of London.

B. Imperial and National Services.

- 1. The Laboratories of the Royal Naval Medical Service, Haslar Hospital.
- 2. The Laboratories of the Royal Army Medical College, Millbank, S.W.

- 3. The Lister Institute of Preventive Medicine.
- 4. The Laboratories of the Imperial Cancer Research Fund.
- 5. The Cancer Research Laboratories of the Middlesex Hospital.
- 6. The Laboratories of the Royal Commission on Tuber-culosis.
- 7. The Laboratory of the London County Asylum, Claybury, Woodford Bridge, Essex.
- 8. The London School of Tropical Medicine, Victoria and Albert Docks, S.E.
- 9. The Liverpool School of Tropical Medicine.
- 10. The Laboratories of the Royal Institute of Public Health, 37, Russell-square, W.C.
- 11. The Laboratory of King Edward VII.'s Sanatorium, Midhurst, Sussex.
- C. Medical Schools and Colleges and the Hospitals connected with them in all the Departments of their Work.

Such hospitals and medical schools as are schools of the University of London.

D. Such other Hospitals, Colleges, Medical Schools, including Schools of Tropical Medicine, Laboratories, or other places as may be approved by the Trustees after receiving a report from the Advisory Board.

Fellows are required to devote the whole of their time to their authorised research, and publication of such research must bear upon the title page the words "Beit Memorial Research Fellow."

EPSOM COLLEGE: THE ANNUAL DINNER OF THE EPSOMIAN CLUB.—The annual dinner of the Epsomian Club was held on Thursday, Dec. 9th, at the Trocadéro Restaurant, Mr. Percival Turner being in the chair. There was a good assembly, among those present being Dr. R. H. Whitcombe, the Suffragan Bishop of Colchester, Sir Henry Morris, the treasurer of the College; Mr. J. B. Lamb, the secretary of the College; Mr. Frank Ree, general manager of the London and North-Western Railway; Dr. F. de Havilland Hall, Dr. W. Essex Wynter, Dr. H. Campbell Thomson, Dr. S. Squire Sprigge, Editor of THE LANCET; and Mr. Edred M. Corner, secretary of the Epsomian Club. Mr. Percival Turner gave the toast of "Floreat Epsomia" and commenced an excellent speech by apologising for taking the chair in the unavoidable absence through illness of Surgeon-General A. M. Branfoot, I.M.S. He testified to the continually progressing success of the school, while he described at some length the splendid block of buildings recently erected by the munificence of the late Mrs. Markham Skerritt. the equipment for scientific education included in which he claimed to be equal to, if not superior to that possessed by any public school in the kingdom. The headmaster, the Rev. T. N. H. Smith-Pearse, in reply, gave some interesting details in proof of the present high state of efficiency which the school has reached. Sir Henry Morris proposed "The Health of the Visitors," coupling the toast with the names of the Bishop of Colchester and Dr. Sprigge. He spoke in generous appreciative terms of the interest which had always been taken by THE LANCET in the prosperity of Epsom College, and mentioned the very practical benevolence shown to the College by the Wakley family. The Bishop of Colchester made a witty reply, in which he alluded to the time when he himself had been a small boy at Epsom College and had taken ladies' parts in the Epsom play. Dr. Sprigge congratulated the College on having definitely taken its place among the public schools of England, and pointed out that the facilities for scientific education alluded to by Mr. Percival Turner would be much appreciated by those intending to join the medical profession. Mr. Frank Ree also responded to the toast and gave some humorous reminiscences of the days when he was a schoolboy. Mr. C. L. Smiles proposed the health of "The Chairman," who responded briefly. The speeches were interspersed with music, songs being given by Mr. W. A. Mackay, Mr. J. N. Eggar, and Mr. J. S. Cotman, while Mr. C. E. Stredwick, a visitor, repaid his hosts with some excellent flute solos. The last song on the programme was an original and topical ballad, entitled "The Roast Beef of Old Epsom." This was rendered with much spirit by the Rev. C. E. Elcum, the vicar of St. Agnes, Liverpool, its author, the chorus being joined in by the assembled company.

THE

STANDARDISATION OF DISINFECTANTS: CRITICISMS OF OUR COMMISSIONERS' REPORT.

WE publish in another place various letters which we have received upon the recent report of our Commissioners, and below is the comment of our Commissioners upon the criticisms in these letters, with references also to correspondence on the subject published in other journals.

THE CHEMICAL SECTION OF THE REPORT.

Let us commence by saying that it is incorrect that the report of THE LANCET Commission had its starting point in a paper read by Mr. M. Wynter Blyth at the Applied Chemical Congress held in London in May, and in a paper published by Constant Ponder and G. Sims Woodhead in the Journal of Pathology, vol. xiii., p. 152, July. That is not the case, for the work of our Commissioners was discussed early in February, and commenced in March.

It is properly pointed out by one critic that the baryta method may be liable to error arising from the incomplete extraction of the phenols, and has quoted experiments which appear to lend colour to that view. We did not, however, found our faith in the process on a single control, as he states—that is, in a mixture containing not phenoloids but carbolic acid—for we said (p. 1457): "It should be added also that in the case of one of the commercial preparations examined the kind and amount of the components used in its manufacture were known." As to the varying degrees of solubility of known." As to the varying degrees of solubility of different phenoloids it may be pointed out that baryta water was not used as the critic assumes. but 15 grammes of the hydrate in 100 cubic centimetres of boiling water, which is a quantity far in excess of that contained in an equal volume of baryta water. Further, it should be pointed out that in using baryta the decomposition of the soaps, &c., results in some caustic soda being formed in which, as he suggests, the phenoloids are probably more easily soluble. The method as regards both soap or resin emulsions and glue or gum emulsions is thus comparable. By first carefully emulsifying the disinfectant with water, by boiling it with a large excess of baryta under a reflux condenser, by washing the residue with warm baryta two or three times, taking care to rub down the mass with a stout glass rod, the extraction of practically all the phenoloid is ensured. Since receiving this criticism we made up the following mixture containing phenoloids and not carbolic acid:-

Phenoloids	 			31·24 p	er cent
Soaps and resin	 		• • • •	31.18	••
Water	 	•••		20.78	,,
Neutral oil	 • • • •	•••	•••	16:80	••
				100.00	

The resin proved to form with baryta a mass somewhat difficult to deal with, in spite of which the results of three determinations of the phenoloics were as follows: phenoloid, 30.62 per cent., 30.98 per cent., 30.30 per cent. The estimation of the other constituents gave soap (fatty acids, resin, and soda), 31 58 per cent.; water, 21.00 per cent.; neutral hydrocarbons (by difference), 16.79 per cent. We submit again that these results give a fair statement of the composition of the synthetic fluid, but certain precautions must be observed. In the absence of resin or in the presence of soap there is no difficulty about complete extraction. As regards the weighing of the phenoloids, the results were good when the evaporation of the last portion of the ether was allowed to take place over anhydrous calcium chloride. In this connexion it may be pointed out that Jeyes' Fluid (No. 2) gives by this method 5.13 per cent. of phenols, and this fluid is "guaranteed exempt from the provisions of the Poisons Act," which means that it is intended to meet the clause in that Act which allows carbolic preparations containing not more than 3 per cent. of carbolic acid to be sold without a label stating that the contents are poisonous. The analytical method, therefore, in this case extracted rather more phenols than might have been expected. The comparatively large proportion of hydrocarbons in this preparation do not appear, as is suggested, to enhance its

germicidal power, since the carbolic coefficient was only 0.75, the $\frac{P-B}{3}$ value being 1.0.

We have not attempted to offer any explanation of the differences given by the bromine value in terms of carbolic acid and the actual weight of phenoloid found, but it is certainly remarkable that a series of figures, call them arbitrary if we will, worked out in the way described should set out an order of germicidal efficiency determined by independent bacteriological experiment.

The ingenious criticisms (contained in the Medical Officer of Nov. 27th and Dec. 4th, 1909) might have been taken seriously if we could think for a moment that they were based on laboratory trial of the L.A.B. method. Practically all of the writer's points are met by the fact that the L.A.B. chemical method gave correct results with mixtures the composition of which was absolutely known. We have nothing to say about what the writer calls his acetone We have method, and we daresay it gives good results; but in the practice of the public health laboratory it is inconvenient and involves the use of considerable quantities of reagents. The suggestion to use acetone in the analyses of disinfectants originated in THE LANCET Laboratory, though the fact was not acknowledged, and we are glad that it has been found to be serviceable. Further laboratory experience will probably lead to more importance being attached than is the case now to the bromine value, the determination of which in THE LANCET experiments did not admit of the error (due to absorption of iodine by the bromo-phenoloid) which is crudely suggested. The articles in the Medical Officer illustrate once more the desirability of the subject of disinfectants being discussed by independent scientific authorities.

In a letter published in the British and Colonial Druggist of Dec. 10th, 1909, Messrs. Jeyes' Sanitary Compounds Company state that our Commissioners say that "the greater the percentage of phenoloids in a disinfectant the greater must be its germicidal activity." Our Commissioners did not say this. What they said was that "chemistry suggests the germicidal potentials of a disinfectant, and it is for bacteriology to tell us how far these potentials are realised under varying conditions," and that "when we come to compare the chemical behaviour of the various phenolic constituents of disinfectants with the bacteriological findings we shall see that under certain conditions the carbolic coefficients calculated upon the results of bacteriological experiment appears to be indicated by certain chemical factors." In a great many cases, however, the quantity of phenols definite bacteriological quality. Messrs. Jeyes' Fluid, for instance, showed by analysis 17 80 per cent. of phenols, and its carbolic acid coefficient (mean) was 1.7, the $\frac{P-B}{3}$ value being 2.1, while Jeyes' Fluid No. 2 was found to contain 5.13 per cent. of phenols and its carbolic acid coefficient was 0.75, the $\frac{P-B}{3}$ value being 1.0. It is difficult to suggest in the face of these results that there is no relationship whatever between the amount of phenol body present and the germicidal efficiency of the preparation.

THE BACTERIOLOGICAL SECTION OF THE REPORT.

Criticism of the work in the bacteriological section of this report has, we cannot but think, been answered in anticipation in our summary of conclusions, and were it not that we are anxious to give, and in return to obtain, as much information as possible, we should now feel almost satisfied in having been able to bring erstwhile antagonists into line even though they are against some of the minor conclusions of our report.

It may afford some satisfaction to those interested, to know that our work was undertaken partly in order to cut short, if possible, a discussion that was becoming somewhat acrimonious, carried on by certain of those interested in disinfectants of various brands, a discussion that seemed likely to be prolonged indefinitely unless, to the advantage of the public, the matter was taken in hand and settled point by point by impartial observers.

As we wish to eliminate as far as possible any personal element we will answer our critics as a body and not as individuals, and in addition to the letters printed in the

present number of THE LANCET we refer to articles by Mr. M. Wynter Blyth in the Medical Officer of Nov. 27th and Dec. 4th.

We will begin by saying that we think some of our statements have not been read with sufficient care. It is not realised, for example, how few are the unbiased data available on which to base a study of disinfectants acting on naked cultures, and we point out that this may be because the methods employed are somewhat difficult to apply and even when successful give comparatively meagre information. In these circumstances, as we have pointed out, there is some excuse for those interested in special disinfectants who read results comparatively favourable to those disinfectants when applying these methods.

Our report deals with what, after all, must be the first question to be settled—the relative power of disinfectants to kill a naked culture; and we show that fairly consistent results may be obtained by a modification of a method the principle of which, if properly applied, is thoroughly sound, within a strictly limited set of conditions. We published our results at this stage of our investigation because we know that for some time to come those who buy and sell disinfectants will fix the money value by the carbolic acid coefficient, and because we can put into the hands of those who have to give advice on this matter what we believe to be the truest means of obtaining the information on which they are expected to act.

We consider that the advantage of our modified Rideal-Walker test is that not only the same highly skilled worker, but moderately skilled and careful workers may obtain similar results time after time. A very casual study of one or two of the papers read at the recent International Congress of Applied Chemistry will bring out the importance of this. Our modifications are objected to on the score that they complicate the method and some of our critics speak of "elaborate machinery" and "vast numbers of tubes," and ask whether "complications of a simple process are of real advantage." Our reply is that we have not used elaborate machinery and have brought accuracy to places where it was lacking.

The records of the Chemical Congress offer evidence that others who have used the Rideal-Walker method have not always met with complete success. Each of our charts carries its own credentials. That our method is fairly simple and uncomplicated may be gathered from the fact that a medical man who has been in one of the Services for a long time, who has had no special training in bacteriology beyond a three months' course ten years ago, volunteered to help us in the continuation of our work and at his fifth experiment obtained a quite regular chart. have no doubt that other methods in the hands of a skilled worker, constantly in practice, may prove reliable, but at the above-mentioned Congress it was stated that three observers, all of them "skilled," obtained results that can scarcely be called satisfactory. In further confirmation of our contention that different observers, working with the Rideal-Walker method, do not agree in their results, we draw attention to the carefully compiled table given by Major C. E. P. Fowler in the Journal of the Royal Army Medical Corps, 1907, vol. ix., pp. 54-58. Major Fowler's own coefficient figures, taken as a whole, though usually somewhat higher than ours, certainly appear to confirm the accuracy of our comparative results. That such different results can be obtained is, we hold, evidence against the general reliability of any method. The Martin-Chick method is, no doubt, very accurate, and for the conduct of certain kinds of work is essential, but for it to be successfully carried out a very large amount of skilled assistance is required. For the purpose of obtaining such curves as we desired it would not be sufficiently comprehensive. One of our critics writes: "Moreover, the tubes do not show any improvement through using a spoon instead of a loop. To inoculate 12 tests in 2½ minutes with proper mixing must demand great skill whatever apparatus be used." Had we not used the spoons we might no doubt have made a similar statement and we do not quarrel with anyone for being a little incredulous on this point. We do object, however, to the ignoring in the first part of the statement the undeniable advantage of obtaining in one experiment so many additional data on which to calculate results; whilst as to the second part, we can only quote the old Scotch saying that "the proof o' the puddin's in the preein' o't."

It is objected that in using the second factor for our coefficient half an hour is too long a period during which to allow the disinfectant to act. May we point out in answer to this that with a complete carbolic acid curve the carbolic acid coefficient for any disinfectant may be calculated at any point from 2½ minutes to 30 minutes by those who do not approve of the "mean" coefficient we have provided.

approve of the "mean" coefficient we have provided.

In support of our contention that the bacillus coli communis has a "resistance" corresponding closely to that of bacillus typhosus, may we draw attention to Tables II. (one of our three typical Rideal-Walker charts) and X of our report, in which it will be seen that with Cyllin, taking that as an example, we obtained a carbolic acid coefficient of 8.7, by the Rideal-Walker method, for the bacillus typhosus, and of 8.8 by the method as modified. Moreover, if we take the 7½ minute and the 10 minute results obtained by our method and compare them with the figure obtained by the Rideal-Walker method, using the data of our carbolic acid table (Table III.) we obtain the coefficient for Cyllin of 8.75 as the mean between the 7½ and 10 minutes coefficients with B. coli communis.

In thus meeting this criticism we are not wishing to score a point," we are simply desirous of setting forth an alternative view. Again, one of the critics writes: "I have contended all along that these tests to be of any value must be done by a trained chemist and that many of the errors and disputes in the past have arisen through carelessness or want of skill on the part of the investigator." We should go beyond this and say that to obtain successful results by that test not only chemical training and great technical skill but some knowledge of bacteriological methods and problems are necessary. He continues: "It is, however, very astonishing that the Commissioners themselves admit the fact that they could only get three out of eleven consecutive tests; the conclusion is an obvious one, and it makes it possible for me to challenge their statements that no fluid on the market has a higher Rideal-Walker figure than 13. Apart from my own work there must be thousands of tests now recorded throughout the world showing that for some years Cyllin, and now other, manufactures have regularly been on the market with a Rideal-Walker figure much higher than that named." We would point out in all good humour that if the "obvious conclusion" referred to is that we admit a lack of technical skill in not obtaining a definite result there are only two alternatives-either THE LANCET Commissioners must be singularly incompetent not to be able to obtain better results after the considerable amount of practice they have had, or, the test demanding the technical skill, chemical and bacteriological knowledge, and general expert ability of what Mr. Bernard Shaw might call a "super it is not one to be utilised by the medical officer of health or one that can be of any great value to the average laboratory worker who cannot keep up continuous practice, and who has not the opportunity of calling in at a moment's notice the assistance of an expert. We anticipate that with our modification the method will be applied far more generally and by the worker of average skill. Our exact words are: "The bacteriological results are so consistent throughout that we have little hesitation in putting them forward as affording an accurate indication of the germicidal power of disinfectants we have tested. We are fully satisfied on this point although in our investigation we have not found such high coefficient figures as have been given by other observers. Neither with the Rideal-Walker method nor with the modifica-tion we have made use of have we under any conditions obtained (any) carbolic acid coefficient figure higher than 13." This surely can refer only to the disinfectants on which we are reporting and concerning which all data are given. It is because such higher figures have been given by the "many observers" that we feel justified in doubting the accuracy not only of these but of some other figures, and in laying such marked stress on this

Moreover, with regard to the statement that our coefficients as a whole are too low we may point out that one of our critics offers the following: "Broth is a more delicate test for the recovery of the organism than is bile salt medium. I have had no opportunity of using the spoons, but think that in some cases a quantity of disinfectant sufficient to inhibit growth in the MacConkey tube might be introduced." Surely, even casual consideration will show that if such be the case our coefficients are unduly high, since the lethal

dilutions used in our carbolic acid control appear to correspond closely with those generally made use of in Rideal-Walker tests.

Some play is made with the fact that there is a difference between certain coefficient figures published in the Journal of Pathology and those given in THE LANCET report. In both the instances quoted the figures vary in the same direction. In THE LANCET we refer to the fact that in our original calculations the control phenol was worked out as being unduly weak. Later this error was corrected after a series of special tests had been made. The whole of our series of disinfectants then showed a slightly higher coefficient figure.

We ask our critics to read carefully everything from "Table XIV." of THE LANCET Report to the last word of the column in which it appears. We rely on the figures included in that table as containing sufficient answer to any criticism hitherto offered on this point.

In the Journal of Pathology we were simply calling attention to our method and the disinfectants were unnamed. In THE LANCET the corrected coefficient figures are given. our earlier experiments we kept our carbolic acid dilutions and emulsions, as recommended for the Rideal-Walker method, 24 hours after we had prepared them before we tested them. Although we make the statement that we obtained certain results with carbolic acid kept in solution for 24 hours, we had realised that what is spoken of as a "fall" might be nothing more than an experimental error. In any case, the "24 hour phenol" appeared to have no advantages over freshly dissolved phenol and we say "apparently, also, the phenol loses very little of its bacteriological power, but we considered that this was sufficient to compel us to use freshly made solutions for each experiment." In a case of this kind where experimental error may come in, but where there might be something beyond such experimental error, we determined to get rid of those sources of error, at any rate, that were avoidable.

Some of the statements made and suggestions offered appear to us to assume an ex-parte form rather than one of genuine criticism of our work, and we feel that were we to attempt to answer them all we should be led into a loose and wordy controversy on which we have no intention of embarking.

We are accused of making our observations "upon old and superseded preparations." All the results published were obtained with samples bought on the open market just before the tests were made. It is at least regrettable that the stronger samples referred to were not universally distributed. Concerning one of the preparations it is stated that "its germicidal value is, I believe, considerably higher than that expressed in THE LANCET report." Naturally, full credit must be given for this belief, which, however, from the results of our own experiments, we feel justified in tooking upon as being not entirely unbiassed.

The germicidal factor must always remain the basis of these tests, and however great and prolonged the "revolt against the autocracy of the microbe" may be, some kind of a "revolt" will still have to be carried on so long as the microbe remains alive. Sanitas Disinfecting Fluid was originally included in our list because it was advertised and recommended in the directions on the bottle to be used as, among other things, an effective germicide. We made an obvious slip in Table XXIV., where Sanitas Disinfecting Fluid was classed as a coal-tar disinfectant forming a clear solution with water. This slip, which we much regret, we corrected at once, and omitted any reference to the fluid from our table of comparative prices. We agree that it is absolutely impossible to determine the relative values of various disinfectants by any one test, but we claim that anything that will give information on the subject of disinfection is called for in the public interest and in the service of municipal authorities.

We claim no "inside" knowledge of any of the disinfectants we have tested. We have approached the question entirely from the standpoint of outside observers who wish to obtain knowledge ultimately to be applied to practical disinfection. It is a matter of indifference to us which disinfectant gives the test results, but it is equally

a matter of importance that we should, so far as possible. accumulate facts. Where we have not been able to obtain these facts we have reserved our opinion.

We entered upon this investigation with an unbiassed mind, and we think we have succeeded in preserving that attitude. We cannot be blind to the tinge of acrimony that has characterised much of the inter-disinfectant controversy, and we wish to avoid anything of the kind in connexion with our present work. We have considered it necessary to answer our critics because we believe that each one is desirous of helping us to obtain definite facts bearing on a very important question. Having done so we intend to leave the discussion to others until we have more facts to communicate. Certain of the points that we raise in our report are receiving further attention, and as soon as we have any reliable data to communicate they shall be placed in the hands of those interested. In the meantime we shall welcome any assistance that may be placed at our disposal by those who have knowledge that we do not possess, knowledge which they may feel justified in communicating to, or anxious to place before, us.

THE FEEDING OF NECESSITOUS LONDON SCHOOL CHILDREN.

As reported in THE LANCET of Nov. 27th, p. 1640, the Education Committee of the London County Council has asked for a supplemental estimate of £25,000 to meet the cost of feeding necessitous school children during the period ending March 31st, 1910. The Finance Committee, however, reporting to the Council on Dec. 14th, advised that only £15,000 of the estimate should be sanctioned until the Council has fully considered the way in which the Provision of Meals Act is being administered in London. They were advised that from Oct. 1st, 1909, to March 31st, 1910, there would be provided 5,074,300 meals costing 1½d. per meal, or £31,714 plus £5286 for service. The total estimate for the year was £62,265. This, however, did not represent the whole cost of the provision of meals, for it included nothing in respect of establishment charges, whereas the organisation had thrown a very heavy burden upon the education department. The committee thought the Council should be informed of the total cost of administering the Education (Provision of Meals) Act, 1906, and they were obtaining the information. The tendency to provide free meals, especially out of the rates, was undoubtedly to induce an increasing number of parents to obtain free meals for their children, and it was of the utmost importance in the interests of the ratepayers that there should be careful discrimination between cases which were, and those which were not, necessitous. The committee had inquired into the existing arrangements for recovering the cost from parents. scheme approved by the Council was not yet fully in operation, but the school care committees were being formed. was therefore too early to form a definite opinion as to the effectiveness of the procedure decided upon. The total number of free meals supplied in 1908-09. whether out of rates or voluntary funds, was 4,546,771. The original estimate for the current financial year was 6,000,000, and this number was now increased to 7,702,506. No reason was given by the Education Committee for the enormous increase of 3,255,000, or 70 per cent., over last year's figures. appeared to point to the failure of the present procedure to effect the desired object of securing that only really necessitous children should be fed at the expense of the rates. Finance Committee had therefore asked the Education Committee to reconsider their methods and to give the Council full information as to the nature of the tests and safeguards upon which they proposed to rely for restricting the giving of meals to really necessitous children. It was obvious that unless great care and scrutiny were exercised the number of free meals would continue to grow, and it was difficult to see what the limit (other than the statutory one of a halfpenny rate) would be.

The amount included in the annual estimates as likely to be received from parents in repayment of the cost of food

was £1000, but for the six months to Oct. 31st, 1909, the sums actually recovered amounted to only £26. This was entirely unsatisfactory, and called for careful consideration. The Finance Committee criticised the terms of the circular letter sent to parents as soon as their children had been fed by the Council. The letter quoted the emphatic words of the Act that parents "shall" be charged with the cost of food when they can pay, and then, after giving particulars of the cost of meals, added, "These facts are told you in order that you may pay if you can." In the opinion of the committee the letter appeared to convey an impression in conflict with the Act. This procedure was not calculated to result in the recovery of the amount which the Act contemplated should be recovered, and it should be revised. They had pointed out on more than one occasion that the principle upon which the Education Committee should act in respect of the recovery from parents of the cost, not only of feeding but also of medical treatment, was that repayment should be the rule, exception being made only in cases where it was proved that the parents could not contribute. They had asked the Education Committee to strengthen their administration in this matter, and also to modify the circular letter. The sum of £15,000 would suffice until the middle of February, when they would submit a further report.

The report was received without discussion. On Dec. 15th the Education Committee decided to ask the London boards of guardians to make monetary allowances to the Council in respect of meals given to children whose parents are in receipt of out-relief, in order to avoid overlapping. It was pointed out that a similar difficulty will have to be met in respect of medical treatment.

Looking Back.

FROM

THE LANCET, SATURDAY, Dec. 17th, 1831.

THE CHOLERA IN THE NORTH OF ENGLAND.

At the moment of our going to press we have received a letter from a physician at Sunderland, on the subject of the disease prevailing in that town, under the name of "The Cholera,"—the Blue Cholera of India. as we have for some time designated the desolating pestilence which has commenced its scourges in the North of England.

* * * * * * * * * * (Excerpt of the letter mentioned above.)

Accompanied by Mr. Kennedy, the distinguished writer of the excellent book which has so deservedly elicited your praises, I this day went to visit a woman named Henry, who had been attacked with the disease in a severe form about twenty-four hours previously. We tracked our way through a dirty lane near the barracks, ascended a tottering escalier, and found ourselves in a small, though not uncomfortable, apartment. On the bed lay the expiring woman, apparently aged at least 70 years, and presenting a shape and attitude of death, which, although accustomed as I am to its most variegated shapes, I never saw paralleled in terror. But I close the curtain on this patient, and turn to a more instructive object. On the floor, before the fireplace, extended on a palliasse, covered with a solitary blanket, and surrounded by a group of female friends, lay a girl of slender make and juvenile height, but with the face of a superannuated hag. She uttered no moan, gave expression of no pain, but she languidly flung herself from side to side, and from the supine to the prone position. The colour of her countenance was that of lead—a silver blue, ghastly tint; her eyes were sunk deep into the sockets, as though they had been driven in an inch behind their natural position; her mouth was squared; her features flattened; her eyelids black; her fingers shrunk, bent, and inky in their hue. All pulse was gone at the wrist, and a tenacious sweat moistened her bosom. In short, Sir, that face and form I never can forget, were I to live beyond the period of man's natural She had vomited some whitish watery matter at few and distant intervals, and had had a few insignificant dejections of the same kind.

I appeal to Mr. Kell, the surgeon of the 82nd, to Dr. Reid Clanny, to Mr. Kennedy, to Dr. Morreis,

and to numerous others who have seen this case, to say whether I have not understated, rather than exaggerated, its features. And, secondly, I appeal to any practitioner in existence, whose mind is not warped by prejudice, and the expression of whose opinions is not restricted by former declarations, whether he has ever seen a case of our cholera corresponding to that description. Would to God I could bring the sceptics here, and show them the girl Henry! And if they can confound the exhaustion on the essential vomiting and purging of English cholera, with the sudden, deadly, overwhelming, collapse, the living death—to use an apparent paradox—of the unhappy being who will probably have perished before my letter closes—if, I repeat, they can confound these symptoms (and I speak but of symptoms, for it is on them they exclusively dwell), I shall, to use the words of an ingenious writer in your Journal on the other side of this question-" For ever after follow the philosophy of the man who doubted his own existence.'

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 7613 births and 5238 deaths were registered during the week ending Dec. 11th. The annual rate of mortality in these towns, which had steadily increased during the six preceding weeks from 12.0 to 16.5 per 1000, further rose to 16.6 in the week under notice, and exceeded the rate recorded in any week since the middle of April last. During the first ten weeks of the current quarter the annual death-rate in these towns averaged 14.0 per 1000, and in London the mean rate during the same period was equal to 13.8. The lowest annual rates of mortality recorded in the 76 towns last week were 6.4 in King's Norton, 7:1 in Hornsey, and 8:2 in Handsworth and Smethwick, all being suburban districts; the rates in the other towns ranged upwards, however, to 23.0 in Wigan, 24.4 in Ipswich, 24.8 in Barrow-in-Furness, and 25.4 in Coventry. In London the recorded death-rate last week was equal to 16.6 per 1000. The 5238 deaths registered in the 76 towns last week showed a further increase of 42 upon the numbers returned in the six preceding weeks, and included 246 which were referred to the principal epidemic diseases, against 278 and 297 in the two preceding weeks; of these 246 deaths, 67 resulted from whooping-cough, 47 from measles, 47 from diphtheria, 46 from diarrhea, 22 from scarlet fever, and 17 from "fever" (principally enteric), but not one from small-pox. The annual rate of mortality from these epidemic diseases, which had been equal to 0.9 per 1000 in each of the three preceding weeks, declined last week to 0.8. No death from any of these epidemic diseases was registered last week in Leicester, Croydon, East Ham, Oldham, or in 14 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 3 · 0 in Birkenhead, 3 · 2 in Swansea, 4 · 1 in Barrow-in-Furness, and 4 · 2 in Ipswich. The 67 deaths from whooping-cough in the 76 towns showed a further slight increase upon the numbers returned in the two preceding weeks, and caused annual rates equal to 1.3 per 1000 in Sunderland and in Merthyr Tydfil, 1.4 in Ipswich, and 1.7 in Barrow-in-Furness. 47 fatal cases of measles were fewer by 6 than the number in the previous week; the highest annual rates from this disease last week were 1.1 in Swansea, 1.3 in Birkenhead, 1.6 in Northampton, and 2.1 in Ipswich. The deaths referred to diphtheria, which had been 58 and 48 in the two previous weeks, declined to 47 last week, of which 18 occurred in London and its suburban districts, 3 in Bristol and 5 in Manchester and Salford. The 46 deaths attributed to diarrhea showed a considerable further decline from the numbers in recent weeks, but caused proportionally excessive rates in Merthyr Tydfil, Rhondda, and Barrow-in-Furness. The fatal cases of scarlet fever, which had been 41 in each of the target and the scarlet fever, which had been 41 in each of the two preceding weeks, declined to 22 last week, of which 3 occurred in Liverpool and Bootle, 2 in Manchester and Salford, and 2 in Rhondda. The 17 deaths referred to "fever," of which 3 occurred in Manchester, showed a decline of 15 from the number in the previous week. The number of scarlet fever patients under treatment in the Metropolitan Asylums and London Fever

Hospitals, which had declined during the eight preceding weeks from 2810 to 2488, had further fallen to 2475 on Saturday last; 266 new cases of this disease were admitted to these hospitals during last week, against 264 and 281 in the two preceding weeks. The Metropolitan Asylums Hospitals contained 3 cases of small-pox on Saturday last. Of the 1540 deaths registered in London last week, 417 were referred to pneumonia and other diseases of the respiratory system, against numbers increasing from 167 to 432 in the eight preceding weeks; these 417 deaths exceeded by 45 the corrected average number in the corresponding week of the five years 1904-08. The causes of 47, or 0.9 per cent., of the deaths registered last week in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death registered last week were duly certified in Leeds, Bristol, West Ham, Newcastle-on-Tyne, Leicester, Portsmouth, and in 47 smaller towns; the 47 uncertified causes of death in the 76 towns last week included 7 in Liverpool, 3 in Bootle, 3 in London, and 4 in Manchester and Salford.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 790 births and 851 deaths were registered during the week ending Dec. 11th. The annual rate of mortality in these towns, which had been equal to 24 2 and 22 3 per 1000 in the two preceding weeks, rose again to 23 8 in the week under notice. During the first ten weeks of the current quarter the annual death-rate in these Scotch towns averaged 17.2 per 1000, and exceeded by 3.2 the mean rate during the same period in the 76 largest English towns. The annual death-rates last week in these Scotch towns ranged from 12.3 and 15.2 in Greenock and Leith, to 19.8 in Perth and 31.7 in Glasgow. The 851 deaths from all causes in the eight towns last week showed an increase of 54 on the number in the previous week, and included 121 which were referred to the principal epidemic diseases, against 98 and 88 in the two preceding weeks. These 121 deaths were equal to an annual rate of 3.4 per 1000; the mean rate from the same diseases last week in the 76 English towns did not exceed 0.8 per 1000. The 121 deaths from these diseases in the Scotch towns last week included 64 from measles, 16 from whooping-cough, 14 from diphtheria, 11 from diarrhea, 8 from scarlet fever, and 8 from "fever," but not one from small-pox. The fatal cases of measles, which had been 36, 49, and 43 in the three preceding weeks, rose to 64 last week, of which 60 occurred in Glasgow and 4 in Edinburgh. The 16 deaths from whooping-cough were within one of the number in the previous week, and included 7 in Glasgow, 3 in Edinburgh and in Dundee, and 2 in Aberdeen. The deaths referred to diphtheria, which had been 13 and 4 in the two previous weeks, rose to 14 last week, of which 8 were returned in Glasgow and 2 both in Edinburgh and in Paisley. The 11 deaths attributed to diarrhoea corresponded with the number in the previous week, and included 9 in Glasgow. Of the 8 fatal cases of scarlet fever, 4 occurred both in Glasgow and Edinburgh; and 7 of the 8 deaths referred to "fever," were returned in Glasgow, and were all certified as enteric. The deaths referred to diseases of the respiratory system in the eight towns, which had been 298 and 265 in the two preceding weeks, rose again to 275 last week, and exceeded by 160 the number registered in the corresponding week of last year. The causes of 36, or 4.2 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0.9 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,142,308 persons, 532 births and 508 deaths were registered during the week ending Dec. 11th. mean annual rate of mortality in these towns, which had been equal to 21 · 0 and 20 · 1 per 1000 in the two preceding weeks, rose to 23.2 in the week under notice. During the first ten weeks of the current quarter the annual death-rate in these Irish towns averaged 18.2 per 1000, whereas the mean rate during the same period did not exceed 14.0 in the 76 largest English towns, and 17.2 in

last week was equal to 22.0 in Dublin, 29.4 in Belfast, 18.5 in Cork, 19.3 in Londonderry, 17.8 in Limerick, and 11.7 in Waterford; the mean rate last week in the 16 smallest of the Irish town districts was equal to 18.6 per 1000. The 508 deaths from all causes in the 22 town districts last week showed an increase of 67 upon the number returned in the previous week, and included 31 which were referred to the principal epidemic diseases, against 18, 21, and 22 in the three preceding weeks; these 31 deaths were equal to an annual rate of 1.4 per 1000; in the 76 English towns the mean rate from the same diseases last week did not exceed 0.8, but in the eight principal Scotch towns it was as high as 3.4 per 1000. The 31 deaths from these epidemic diseases in the Irish towns last week included 19 from whooping-cough, 8 from diarrhea, 2 from "fever," and one each from measles and scarlet fever. but not one either from diphtheria or small-pox. The 19 fatal cases of whooping-cough showed a further increase of 9 upon the numbers in recent weeks, and included 15 in Belfast and 2 in Dublin. The 8 deaths attributed to diarrhoca corresponded with the number in the previous week; 4 occurred in Dublin and 2 both in Belfast and Cork. Of the 2 deaths referred to enteric fever, 1 each occurred in Dublin and Belfast; and the fatal case both of measles and scarlet fever were returned in Dublin. The deaths in the 22 towns referred to pneumonia and other diseases of the respiratory system, which had been 101 and 157 in the two preceding weeks, further rose last week to 162. The causes of 25, or 4.9 per cent., of the deaths registered last week in the Irish towns were not certified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0.9 per cent., while in the Scotch towns it was equal to 4.2 per cent.

VITAL STATISTICS OF LONDON DURING NOVEMBER, 1909.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 5.8 per 1000 of the population, estimated at 4,833,938 persons in the middle of the year; in the three preceding months the rates were 5.0, 7.1, and 6.5 per 1000 respectively. The lowest rates last month were recorded in Chelsea, the City of Westminster, Stoke Newington, Holborn, and Finsbury; and the highest rates in Fulham, Bermondsey, Battersea, Lewisham. and Woolwich. Six cases of small-pox, of which 5 belonged to Stepney and 1 to the City of London, were notified during last month, and 4 small-pox cases remained under treatment in the Metropolitan Asylums Hospitals at the end of the month. The prevalence of scarlet fever showed a further marked decline last month; among the several metropolitan boroughs this disease was proportionally most prevalent in Fulham, Bermondsey, Battersea, Camberwell, Lewisham, and Woolwich. The Metropolitan Asylums Hospitals contained 2460 scarlet fever patients at the end of last month, against 2329, 2717, and 2708 at the end of the three preceding months; the weekly admissions averaged 289, against 274, 394, and 325 in the three preceding months. Diphtheria also was less prevalent than in either of the two preceding months; this disease was proportionally most prevalent in Paddington, Fulham, Hammersmith, Stepney, and Lewisham. There were 940 diphtheria patients under treatment in the Metropolitan There were 940 Asylums Hospitals at the end of last month, against 795, 901, and 958 at the end of the three preceding months; the weekly admissions averaged 104, against 119 in each of the two preceding months. The prevalence of enteric fever during November showed no numerical variation from that recorded in the preceding month; among the several boroughs this disease was proportionally most prevalent last month in Kensington, St. Pancras, Bethnal Green, Stepney, The number of enteric fever Poplar, and Battersea. patients under treatment in the Metropolitan Asylums Hospitals, which had been 75 and 78 at the end of the two preceding months, had declined again to 70 at the end of last month; the weekly admissions averaged 10, against 13 and 11 in the two preceding months. Erysipelas was the eight principal Scotch towns. The annual death-rate | proportionally most prevalent in Hackney, Finsbury, the

" Including membranous croup.

	uoj			Nor	Notified	CASES OF INFECTIOUS DISEASE.	F INFE	CTIOUS	DISEA	SE.				DEATHS FROM PRINCIPAL INFECTIOUS DISEASES	FROM	PRINC	IPAL I	NFECTI	ovs Di	SEASE					0
CITIES AND BOROUGHS.	Estimated populat in the middle of	Small-pox.	Scarlet fever,	Diphtherla.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas. Cerebro-spinal	meningitis. Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-	Typhus fever.	Enteric fever.	Other continued fevers.	Біяттрая.	Total,	1000 persons Living. Deaths from all	causes. Death-rate per 10	living. Deaths of infar	under one year t
LONDON	4,833,938	9	1216	459	1	25	1	29	352	3 2149	69	1	37	24	51	55	1	10		98	182	0.8	5131 13	13.8	118
West Districts.								-	_	-							-			-					
Paddington	151,965	1	41	55	1	1	1	1	- 11	1	18 67	1	2	1	23	2	1	1	i	2		1.0	132 11	11.3	142
	183,683	1	62	11	1	6	1	1	7	9	_	1	1	8	1	1	1	1	1	1		_	11 991	11.8	88
! ! !	125.704	1	18	16	1	1	1	2	2	- 4	45 4.4	1	1	1	3	67	1	1	1	-	11	1-1	154 16	16.0	184
: :	176 406	1	54	98	1	4	1	-	7	6		1	1	3	4	2	1	1	1	2	4	0.1	-	13.0	149
Obeless	75.249	1	-	00	1	1	1	-		-		1	1	1	1	63	-	1	1	-	2	0.3	_	16.5	681
Vestminster	168,883	1	31	7	1	8	1	1	83	1 4	44 3.4	1	1	1	2	1	1	1	1	-	_	_	-	13.9	122
tricts.	196 097	1	29	00	ı	1	1	-		4	48 5.0	1	I	-	-	17	1	1	1	-		9.0	142 14	14.7	87
	94 185	-	19	4	1	1	1	_	45	83	4	1	1	1	1	1	1	1	1	-		_	_	8.7	9
	927 499		84	24	1	01	-	-	14	113		1	-	0.7	0	2	1	-	-		01			14-2	107
St. Fancras	221,162	1	5 5	1 2		2		-	_					-	, ,	, r				-			182	1.7	
Islington	202,202	1	± c	ţ -	ı	+	1		2 0	2		1	-	-	, -	,	1		1	_		+ 00	•	3.0	25
Stoke Newington	54,423	1	-	-	1	1	1	1	7	-		1	1	1		1 .	1	1 .	1				-	n (200
Наскиеу	237,601	1	28	22	1	8	1	1	45	- 117	4.9 2	1	4	-	-	-	1	-	1	-	_	9.0	222 15	12.2	88
Central Districts.	53,802	1	9	2	1	1	1	-	1	1	9 2.2	1	1	1	1	1	i	1	1	1	_		-	0.0	52
:	95,289	1	9	9	1	1	1	2	10	2	24 3.3	-	-	1	1	1	1	1	1	9	 	_	134 18	18.3	103
City of London	18,193	1	03	1	1	1	1	1	2	_	9.2	1	-	1	1	23	1	i	1	1		2.1	_	18.6	9/1
Shoreditch	114.802	1	17	5	1	1	1		-	ró :	3 3.7	1	83	1	1	-	1	-	1	-	80	9-6	140 16	15-9	167
een	131,316	ı	39	12	1	3	1	1	4	- 68		1	4	1	3	1	1	1	1	-	12	1.5	166 16	16.5	151
Stepney	312,525	2	46	41	1	18	1		- 29	- 165	_	1	13	3	4	6	1	-	1	00	38	9.1	380 16	15.8	128
	171,965	1	39	13	1	2	1	2	6	- 78	8 5.9	1	3	7	7	10	1	-	1	-		9.1	206 16	15.6	138
Southwark South Districts.	211,125	- 1	33	17	1	М	1	-	19	7.	4.4	1	-	ı	3	2	i	83	1	-10		1.0	257 15	15-9	124
/	127,569	1	48	9	1	8	1	2	4	72		1	1	1	1	8	1	-	1	- 4	_	0.7	-	17-6	801
Lambeth	324,188	1	26	88	1	9	1	_	14	146		1	1	1	2	4	1	1	1	_	_	9.0	317 12	12.7	103
Battersea	186,036	1	89	20	1	9	1	1	10	- 105	5 7.4	1	-	1	3	8	1	1	1	_		1.0	196 13	13.7	148
Wandsworth	297,646	1	57	19	1	1	1	_	00	65 -		1	1.	1	1	9	1	1	1			0.4	259 11	11.3	98
Camberwell	283,022	1	86	31	1	2	1	1	8	149		1	1	1	2	3	1	1	1	_		1.0	303 14	14.0	22
Deptford	118,683	1	63	13	1	03	1	-	14	- 58	8 6.4	1	8	1	2	4	1	2	1	~	14	_	-	14.8	129
Greenwich	111,014	1	17	6	1	1	1	-	3	. 3.	_	1	1	1	-	03	1	7	1	-	_	_	_	9.11	133
Lewisham	160,749	1	107	38	1	1	1	-	-	- 154	12.5	1	1	-	2	1	1	1	1	-		0.3	139 11	11.3	83
Woolwich	133,374	1	22	14	1	-	1	_	9	- 80	_	1	1	-	-	3	1	1	1	4	_	_	_	13.6	146
Port of London	1	1	1	1	1	1	-	-	-		1	1	1	1	1	1	1	1	1	-	_	_	_	-	1
		-																							1

City of London, Bethnal Green, Stepney, Poplar, Bermondsey, and Deptford. The 29 cases of puerperal fever notified during the month included 5 in Wandsworth, 4 in Fulham, 3 in Hammersmith and in Stepney, and 2 each in Finsbury, Poplar, Bermondsey, and Woolwich. Of the 3 cases notified as cerebro-spinal meningitis 2 belonged to Islington and 1 to the City of Westminster.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the four weeks ending Nov. 27th the deaths of 5131 London residents were registered, equal to an annual rate of 13.8 per 1000; in the three preceding months the rates were 10.5, 11.5, and 11.3 per 1000. The death-rates last month ranged from 7.9 in Stoke Newington, 8.7 in Hampstead, 11.3 in Paddington, in Wandsworth, and in Lewisham, and 11.5 in Greenwich, to 16.0 in Hammersmith, 16.5 in Chelsea and in Bethnal Green, 17.6 in Bermondsey, 18.3 in Finsbury, and 18.6 in the City of London. The 5131 deaths from all causes included 281 which were referred to the principal infectious diseases; of these, 37 resulted from measles, 24 from scarlet fever, 51 from diphtheria, 73 from whoopingcough, 10 from enteric fever, and 86 from diarrhea, but not any from small-pox, from typhus fever, or from ill-defined pyrexia. The lowest death-rates from these diseases last month were recorded in Kensington, Chelsea, the City of Westminster, Hampstead, Stoke Newington, and Lewisham; and the highest rates in the City of London, Hammersmith, Finsbury. Bethnal Green, Stepney, Poplar, and Deptford. The 37 fatal cases of measles showed a decline of 70 from the corrected average number in the corresponding period of the five preceding years; the greatest proportional mortality from this disease was recorded in Paddington, Hackney, Shoreditch, Stepney, Poplar, and Deptford. The 24 deaths from scarlet fever were equal to one-half the corrected average number; this disease was proportionally most fatal in Kensington, Fulham, St. Paneras, and Stepney. The 51 fatal cases of diphtheria showed a decline of 16 from the average number in the corresponding period of the five preceding years; the highest death-rates from this disease were recorded in Hammersmith, Fulham, Bethnal Green, Lambeth, Battersea, Camberwell and Deptford. deaths from whooping-cough were 26 in excess of the corrected average number; the greatest proportional mortality from this disease was recorded in Chelsea, St. Marylebone, the City of London, Stepney, Poplar, Southwark, and Deptford. The 10 deaths referred to enteric fever were 15 below the corrected average number; of these 10 deaths, 2 belonged to Southwark, 2 to Deptford, and 1 each to Westminster, St. Pancras, Hackney, Stepney, Poplar, and Greenwich. The 86 fatal cases of diarrhea were 41 fewer than the corrected average number; this disease was proportionally most fatal in Paddington, Hammersmith, Finsbury, Shoreditch, Bethnal Green, and Woolwich. In conclusion, it may be stated that the aggregate mortality in London last month from these principal infectious diseases was 33 per cent. below the average.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births, was equal to 118 per 1000. The lowest rates of infant mortality were recorded in Kensington, St. Marylebone, Hampstead, Stoke Newington, Hackney, Holborn, and Lewisham; and the highest rates in Hammersmith, Chelsea, the City of London, Shoreditch, and Bethnal Green.

HEALTH EXHIBITION IN CONNEXION WITH THE CONGRESS OF THE ROYAL SANITARY INSTITUTE.—An exhibition will be held in connexion with the twenty-fifth congress of the Royal Sanitary Institute from Sept. 5th to 14th, 1910, in the Pavilion at Brighton. The exhibition will be divided into four divisions—namely, (1) Science in Relation to Hygiene; (2) Hygiene of Trades and Professions; (3) Construction and Sanitary Apparatus; and (4) Personal and Domestic Hygiene. Full particulars will be supplied on application to the secretary, Parkes Museum, 90, Buckingham Palace-road, London, S.W. The Brighton town council has appointed a subcommittee to make the necessary arrangements for the Congress. It is proposed to call a public meeting of the inhabitants about the end of February.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Surgeon Charles Kendal Bushe has been promoted to the rank of Staff-Surgeon in His Majesty's Fleet (dated Dec. 9th, 1909).

The following appointments are notified:—Fleet-Surgeons: O. W. Andrews to the *Prince George* on commissioning and H. E. Tomlinson to the *Acheron*. Surgeons: H. D. Drennan to the *Hermes*, additional, for the *Odin* and on commissioning; G. D. Bateman to the *Mercury*, additional, for the *Hazard*; G. A. Bradshaw to the *Fermidable*; E. L. Atkinson to the *Pembroke*, additional, for disposal; W. Miller to the *Achilles*; T. Creaser to the *Vectory*, additional for the *Canopus*, on paying off.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Robert D. Hodson is placed on retired pay (dated Dec. 14th, 1909).

The under-mentioned officers, on transfer from the 8th (Lucknow) Division, have been appointed specialists in the subjects named:—Lieutenant C. H. Denyer, 5th (Mhow) Division, dermatology; Captain P. S. O'Reilly, 9th (Secunderabad) Division, ophthalmology. Major G. W. Tate, M.B., from Dundalk, has been appointed Recruiting Medical Officer at Dublin.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel R. J. Baker, Bombay, is permitted to retire from the Service. Lieutenant-Colonel A. T. Brown, Bengal, is permitted to retire from Dec. 14th. Captain Norman and Captain White, members of the Plague Research Commission, have arrived at Madras to inquire into the question why Madras and the East Coast generally remained practically free from plague. It is understood that Captain White will be occupied on this work for three or four months. Captain H. S. Matson, Brigade Laboratory, Jhansi, has been appointed specialist in the prevention of disease from Sept. 20th. Captain Lloyd has been appointed acting professor of biology, Calcutta Medical College. Lieutenant E. B. Munro, 62nd Punjabis, has been directed to proceed to Cawnpore for officiating medical charge of the 41st Dogras.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Supplementary List: William Hilgrove Leslie McCarthy to be Lieutenant (on probation) (dated Nov. 17th, 1909).

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st West Lancashire Field Ambulance: Arthur John Evans (late Surgeon, Royal Naval Volunteer Reserve) to be Captain (dated Dec. 15th, 1909).

For attachment to Units other than Medical Units.—Dudley William Carmalt Jones to be Lieutenant (dated Oct. 26th, 1909). Joseph Hollins Donnell to be Lieutenant (dated Nov. 5th, 1909).

THE ARMY MEDICAL ADVISORY BOARD.

The Army Council has approved of the appointments of the undermentioned gentlemen as members of the Army Medical Advisory Board being renewed for a period of three years: Dr. J. Rose Bradford, Sir C. Cameron, Dr. L. C. Parkes, Dr. M. S. Pembrey, and Sir F. Treves.

DEATHS IN THE SERVICES.

Deputy Inspector-General Horace Edward Firmin Cross, R. N., on Dec. 13th, at Tangley Park, Worplesdon, Surrey, aged 60 years. He joined the Royal Navy as a surgeon in March, 1877, and served in the Orontes during the campaign against the Zulus in South Africa in 1877-79 (Zulu medal). He was the surgeon of the Temeraire at the bombardment of Alexandria, July 11th, 1882 (Egyptian medal, with clasp for Alexandria and the Khedive's bronze star). He served with the Royal Marine Battalion during the operations in the Eastern Soudan in 1884 and was present at the actions of El Teb and Tamaai (mentioned in despatches and promoted). In 1892 he was made a fleet-surgeon, and in 1899 a deputy inspector of hospitals and fleets on retirement.

Correspondence.

"Audi alteram partem."

THE PLEA OF LUNACY IN THE CRIMINAL COURTS OF SCOTLAND.

To the Editor of THE LANCET.

SIR,-May I as one engaged in the administration of criminal law in Scotland be allowed to follow up the excellent paper by Professor J. Glaister which appears in your issue of Nov. 13th? He points out some anomalies which have recently emerged, and as the broader question of lunacy administration is likely soon to be taken up by the legis-

lature discussion may be of value.

The first anomaly is that created by the strict reading of the statutes in Brown's case (the case of poisoned shortbread). As Professor Glaister and you in your comments on his article point out, it is not satisfactory that the jury, after having heard not only the evidence as to insanity but also the evidence put forward to establish guilt, should have been barred from considering this latter evidence and from giving a decision on it, by the judge's direction that they should first of all decide whether the accused was at the time of his trial insane in the sense of being unfit to instruct a defence. One would have expected that the jury would have been told that if, having heard the evidence, they did not feel bound to convict they must acquit; that if, however, they could not acquit, then, and not till then, and before convicting, they should ask themselves whether they were satisfied that the accused was in a fit state to instruct his defence. If the evidence is not conclusive against a prisoner either because it is inherently weak or because the defence, however instructed, has been too much for it, what relevance has the question-in many cases an abstract and debateable one-as to whether or not the accused could instruct a defence? Either he has been actually able to do so or it has not been necessary for him to do so. It follows that, assuming the statutes were correctly interpreted, an amendment of them is needed in the interests of fairness.

The question is raised as to whether a preliminary plea of insanity should be decided by a judge sitting alone or by a jury. Much may be said on either side, but one change seems urgently needed. In many cases the fact of insanity is obvious and admitted from the start. There should be some machinery for at once having a judicial ascertainment of it without waiting until a full-blown trial of the whole case can be held. It is not an ideal system which requires that a person who on the face of things has committed no crime, and who may in his normal condition be entirely lawabiding, should be kept for weeks or possibly months in a prison even under the relaxed conditions applicable to untried prisoners, should be associated with criminals of all sorts, and ultimately placed in a criminal dock. I do not know the therapeutics of insanity, but I should be surprised to hear that such treatment was other than highly prejudicial to even a confirmed lunatic, while I can readily understand that it might in some cases be fatal to all hope of ultimate recovery. The further practice of treating such persons after their irresponsibility has been established as criminal lunatics and associating them with those who are criminals first and lunatics thereafter also calls for

The case referred to by Professor Glaister—the Glenbuck murder—where for undisclosed reasons a capital sentence was set aside, raises broader issues. It is not the first time they have been raised, and unless the law is changed it will not be the last. Incidentally the question as to the Secretary for Scotland's position may be answered. It having been suggested that the King should exercise his prerogative on the ground of the prisoner's insanity, it fell to the Secretary to advise His Majesty. He in turn required expert advice and proceeded to procure it. What, however, happened was that a public trial having been held with every appearance of fairness to the accused, and having resulted in a verdict which commended itself with unusual unanimity to the community, its result was set aside by a tribunal of men whose names were not disclosed, whose inquiry was held in

private, and whose opinions were never made public. I must not be understood as cavilling at the ultimate result. It is the method of reaching it which is open to challenge. It is to the credit of our courts and criminal administration that there was no criticism of their part in the case, and, on the other hand, any suggestion that the Secretary for Scotland or his advisers were influenced by outside or undue considerations must be ruled out as quite untenable. The key to the difficulty doubtless is that whereas the trial was in a law court where the medical evidence had to be looked at in the light of certain legally accepted standards to which it had to conform before it established irresponsibility, in the private inquiry no such necessity existed. Looking to the discrepant ideas of lawyers and alienists it is not surprising that different results were reached. Doctors may be excused from congratulating themselves on having thus, even by a side wind, got the better of the lawyers in the long struggle for the relaxation of the legal doctrine of responsibility. I might be inclined to join in their congratulations, but I am chastened by other reflections. It is imperative that our law courts should have the fullest confidence of the people. They cannot have that if their deliberate judgments are set aside in what the people, kept in ignorance of the reason, must regard as an arbitrary manner.

We pride ourselves in Scotland on the fact that our law courts have always shown a readiness to accept the established results of science as soon as there was assurance that they nere established results. As was so well said by the Lord President in Brown's case, "What may be termed scientific opinion on insanity has greatly altered in recent years, and courts of law, which are bound to follow, so far as they can, the discoveries of science and the results of experience have altered their definitions and rules along with the experts." Over 200 years ago Sir George Mackenzie spoke of insanity in a manner peculiarly enlightened for his time and specially remarkable in one who earned the sobriquet of "Bloody Mackenzie." He, of course, accepted the current view that "absolute furiosity" was necessary for irresponsibility, but he went on to suggest that "by the rule of proportions" the punishment should be lessened for those who, not absolutely mad, are "hypocondrick and melancholly to such a degree that it clouds their reason." Further, he speaks of madness as "too sticking a disease and seldom or never cured," and suggests that the judge should remit something of the ordinary punishment for acts done in lucid intervals, because "where madness has once disordered the judgment it cannot but leave some weakness and make a man an unfit judge of what he ought to do"; and he quotes the proverb "once wud (i.e., mad) aye the worse. Mackenzie's dicta strongly recall the latest result of modern thought—the general conclusions reached by Mercier in his book on "Criminal Responsibility" (p. 203)—and it may be taken that they mitigated to some extent the hardships of the old Scottish Criminal Law. Then it is significant that, so long ago as 1863. the answers of the judges, which seem still to dominate English law, were practically discarded in the Scottish courts. Lord Justice Clerk Inglis then told a jury that if they were once satisfied that a person charged with murder was under the influence of insane delusions at the time, they had no occasion to inquire whether he knew what was right from what was wrong or whether he knew what was murder in the eyes of the law or what was a punishable act. Not till 45 years later do we find Mercier, in commenting on the Otley murder case, congratulating himself that it will not now be necessary to prove in our English courts want of knowledge of right and wrong, but only insanity at the time so as to establish irresponsibility.1

To day it may, I think, be claimed that more regard is paid in Scotland than in England to the plea of "insanity of the will," if I may so call it; while in regard to "insanity of the intellect," attention may be called to the direction which the judge gave to the jury in the case of the epileptic, Brown. They were to judge whether Brown was "in the condition of a truly sane man who can not only tell his counsel how to defend him, but can tell his counsel with the certainty of not being deceived what he was really doing at the time when the act charged is said to have been committed." That direction referred to a plea of insanity in bar of trial, but if the same criterion of sanity is to be applied

¹ Journal of Mental Science, October, 1908.

to determine responsibility, then the most advanced alienist must admit that he has got more from the obdurate and conservative lawyer than he ever hoped to get.

The lawyer's position seems sufficiently clear and reasonable. He asks, first of all, for some greater unanimity than as yet exists among mental specialists, and points to the fact that one of the foremost of them in the book just referred to has to admit that his views, though they have been before the medical profession for many years, have not been formally adopted by any other writer. Even where unanimity does exist, he must remember that specialism has its Nemesis and is apt to exaggerate the importance of its own views, and he has to correct that exaggeration by reference to other considerations. He may still claim that the fear of punishment does stimulate self-control, and appeal to the practice of the doctors themselves who punish, at least by deprivations, inmates of asylums who are undoubtedly insane. Lastly, and with great cogency, he may point out that criminal administration must keep in touch with the opinions prevalent in the community, that it is from these opinions that it derives its sanction, and he may say that until public opinion is more ready to acknowledge advanced views on irresponsibility he must be chary of adopting them.

I should apologise for the length of this communication. I proffer the excuse that the lawyer does not often encroach on your space.

I am, Sir, yours faithfully,

Avr. Dec. 6th, 1909.

P. FRASER MACKENNA.

THE STANDARDISATION OF DIS-INFECTANTS.

To the Editor of THE LANCET.

SIR,—The report of THE LANCET Commissioners in the last three issues of THE LANCET has reopened the question whether at the present time the very generally used method of ascertaining the germicidal value of disinfectants devised by myself and Mr. Ainslie Walker in 1902, is capable of being modified so as to give more useful information.

A suggestion in favour of the chemical assay of disinfectants, made by Mr. M. Wynter Blyth at the International Congress of Applied Chemistry in the spring, and a modification of the bacteriological technique published by Dr. Sims Woodhead and Dr. Ponder in the Journal of Pathology and Bacteriology in the summer were the starting points for this Commission's investigation. They finish by finding that only when the influence of several factors mentioned in the report have been determined will it be possible to modify any standard figure (H, p. 1616). I take it, therefore, that this investigation, like many others, had not led to any very definite conclusion, and that the new tests proposed in the report are not suggested as having any standard value.

The Commissioners claim: (1) that they can by a modified method of the chemical test determine the phenoloids present; (2) that the efficiency of an emulsion, provided that it is fine enough to show a Brownian movement, depends on the amount and the chemical constitution of the phenoloids

as shown by the bromine absorption so that $\frac{P-B}{3}$ = germicidal value; (3) that for this relationship to hold good the Rideal-Walker bacteriological test must be performed in a novel manner. With your permission I should like to deal with these three points shortly in this preliminary note.

The method for the determination of the phenoloids is based upon the assumption that all the barium phenolates are very soluble in baryta water; as a matter of fact they must have varying degrees of solubility in this solvent. The ordinary pure carbolic acid, the only substance tried in the control test, happens to be the phenol which, according to the Commissioners' own admissions, is the one which is seldom if ever present in commercial fluids. I have therefore thought it advisable to test the efficiency of the process by taking as a control an emulsion containing some of the higher phenoloids used. My fluid was made up in the same way as that prepared in THE LANCET Laboratory and had by synthesis the following composition: phenoloids, 28.5; resin and fatty acids, 24.0; water and soda, 27.5; hydrocarbons, 20.0. This emulsion corresponds very closer with the trial fluid examined by them, the only marked difference being that instead of pure carbolic acid it contained those phenoloids usually employed.

When examined by the L.A.B. method by myself and also by two other independent chemists, the results were as follows:—

	ĸ.	H.P.	L.
Phenoloids	21 · 3	 18 · 1	 17 ·0
Resin and fatty acids.	24 · 2	 25.3	 25 · 8
Water and soda	30 · 4	 29 · 9	 29 · 5
Hydrocarbons	24 · 1	 26 · 7	 27 · 7

The extraction with baryta is thus open to the very grave objection that the hydrocarbon and barium salts retain a considerable quantity of the phenoloids. I paid special attention to the washing with the baryta as recommended by the Commissioners, and, as will be seen, was only able to obtained 21.3 out of 28.5 per cent. present, but my chemical colleagues obtained even smaller quantities. Owing to this inherent fault it is therefore certain that in different hands differents results are obtained by this process. It is extraordinary that your Commissioners found more carbolic acid than was put into the fluid tested—i.e., 31 5 instead of 30.9 (p. 1457). This can only be attributed to the fact that, as I have already mentioned, the barium compound of pure carbolic acid is more readily soluble when compared with the others. In their control test the carbolic acid found is not only higher than that put in, but higher than that found by the bromine absorption process.

Another important point is that the weight of phenoloids recovered by this process taking the quantities directed is far too small to afford material for a proper examination as to their character. The deficit in the amount of phenoloids found by us is evidently due to the large proportion which remains in the barium salts of the resin and fatty acids. This magma is of a sticky treacly mass and it is impossible to remove from it even with repeated washings with the baryta solution the whole of the phenoloids present. Therefore the method of separation, by means of their barium salts, of the resin and fatty acids from the phenols at any rate in the case of the higher phenols absolutely fails. Owing to these fundamental defects in the process I have not thought it necessary to inquire into the value of the separation by means of acetone of the resin and oils from the precipitate. Another point which affects the accuracy of the process is that the phenoloids are so hygroscopic that it is impossible when dealing with such small quantities as one-third of a gramme to obtain anything like accurate percentages of these substances present. Take, for example, one of the determinations referred to above. Weighed at the moment at which it seemed probable that the ether and water had been driven off as prescribed by the method, 0.309 gramme, or 18.54 per cent., was obtained. After ten minutes this quantity was reduced to 0.303 gramme, or 18.18 per cent., and after a further 30 minutes to 0.293 gramme, or 17.58 per cent. When a difference of 1 milligramme in weight corresponds to 0.06 per cent. and the weight varies by several milligrammes, according to the time occupied in drying it is obvious that, if the separation of the phenols had been complete, the statement of the percentages to the second place of decimals in the analysis conveys a totally erroneous impression of the accuracy of the

It seems also very important that your readers should realise that there are two classes of emulsified disinfectants on the market-viz., those made by means of glue or gum and those made by means of resin or soap and that the process as outlined in the chemical portion of the report is only applicable to the latter of these classes. If, as I contend, and as I think every chemist must acknowledge, the process does not extract the total amount of phenoloids present, it prejudicially affects there disinfect that a second group as conjust these which those disinfectants in the second group as against those which are not tested by the same process. Thus, is it fair to contrast the composition of "Bactox" and "Okol" as stated in the report, seeing that the figures put forward represent their respective compositions as obtained by two different processes, although both are manufactured by the same firm? I feel that it cannot be too strongly emphasised that the analytical data for the various disinfectants given in THE LANCET report, and especially the percentage of phenols on which very far-reaching deductions are based, are obtained not by one uniform method of analysis having a constant error, but by two distinct methods of analysis according to the nature of the emulsifying agent used. The

results from these two methods do not admit of any comparison. The one, as has been shown, gives a percentage of phenols far below the true percentage, the error probably varying with the nature of the resin or fatty acid soaps used; the other, in accordance with common experience, affords results approximately correct, although rather higher than the real percentage.

The results of the analysis of the resin or fatty acids (soap) preparations are therefore not only hopelessly incorrect but are also unfairly compared with the results of the analysis of gelatin or dextrin emulsions obtained by a different method. And further, values have been deduced from the percentage of one constituent or one class of constituents, the phenols thus estimated-without reference either to the wide differences both in the disinfectant and the commercial value which obtains amongst the phenels themselves, or to the equally pregnant facts revealed by the chemical analyses as to the different nature of the emulsifying agents employed. In this portion of the report reference is made also to the great difference in germicidal value which is brought about by the physical character of the emulsion. It is clear also that the neutral hydrocarbons present are not "inert bodies" but must modify the germicidal effect when equal quantities of any given phenol are employed. Neither of these factors has been taken into account in the conclusions based upon analysis.

I have attempted to follow the bromide absorption results, but these have been dealt with by Mr. M. Wynter Blyth in the Medical Officer of Nov. 27th, and I need only say that I concur with him. I pointed out several years ago when working with creolins obtained from different countries that there seemed to be no fixed relation between the germicidal value and the bromine absorption figure, although some of the higher boiling phenols have small bromine absorption figures. I cannot, however, understand why the phenol percentage (assuming that it is correctly obtained by this method), less the bromine value, divided by three should give the germicidal value, as this arbitrary ratio does not seem to be justified by any of the work brought forward by your Commissioners. Take, for instance, the figures given for "Cyllin" and "Cyllin Medical," the phenoloids returned being 40.41 and 32.08 respectively. Even assuming that these phenoloids had the same bromine equivalent, the coefficient given for Cyllin Medical should be higher than that recorded. But we find that the bromine figure for the phenoloids extracted from Cyllin Medical is very much lower than that obtained for the phenoloids of ordinary Cyllin which should still further increase the coefficient of the former. As a matter of fact, from my own personal knowledge the Commissioners are hopelessly wide of the mark in the case of these two disinfectants, not only bacteriologically but chemically. It is easy to be critical, but as on page 1616 they them-

of the validity of their proposal I do not think that your readers can accuse me of being unduly anxious to detract from the merits of the work. If we examine "Cofectant," the first disinfectant given in the table on page 1612, we find this ratio to be 9.3 and the carbolic acid coefficient 9.8 when determined by means of the B. coli and spoons test and compare them with those for Bactox, the other disinfectant, which has a similar coefficient, 9.5, this ratio of $\frac{P-B}{3}$ falls to 6.8. This certainly does not support the contention of the Commissioners, although I believe that the low figure of 6.8 in the case of Bactox may be due to a retention of the phenoloids by the neutral oils. If this is not the explanation, and the manufacturers will be able to say whether it is so or not, we have only to fall back on the fact that the presence of 35.7 per cent. of hydrocarbons in "Bactox" as against none of those "inert bodies" in "Cofectant" causes an increase of germicidal value. I suggest therefore that the L.A.B. method in this case shows that if the amount of active phenols be reduced and replaced by hydrocarbons no interference in germicidal activity is produced. I am naturally gratified by your Commissioners' first bacteriological conclusion-viz., that "the Rideal-Walker method of testing disinfectants certainly gives accurate information under well-defined and strictly limited conditions, but results that can be set down in definite black

selves say that further work is needed on the subject

and white figures are exceedingly difficult to obtain. I have contended all along that these tests to be of any

value must be done by a trained chemist and that many of the errors and disputes in the past have arisen through carelessness or want of skill on the part of the investigator. It is, however, very astonishing that the Commissioners should themselves admit the fact that they could only get 3 out of 11 consecutive tests. The conclusion is an obvious one and makes it possible for me to challenge their statement that no fluid on the market has a higher Rideal-Walker figure than 13. Apart from my own work, there must be thousands of tests now recorded throughout the world showing that for some years Cyllin, and now other manufacturers, have regularly been on the market with a Rideal-Walker figure much higher than that named.

With regard to the modification suggested I have compared the results recorded in the Commissioners' report with those obtained by Ponder and Woodhead when the use of platinum spoons was first suggested for this work.1 A comparison of the table on Disinfectant D with Table XV., McDougall's fluid,2 show that these are the two same tests as the figures are identical with the exception of the misprint of the dilution of 1/1400 in 30 minutes. It is, however, extraordinary that Woodhead and Ponder conclude from this table that Disinfectant D has an average coefficient of 7.4, whilst, when acting as your Commissioners, the same figures show a coefficient of 7.9. If your Commissioners had taken the trouble to repeat this particular table your readers would have been able to judge the accuracy of the process. Fortunately, we have a means of ascertaining the error in the Commissioners' test by the results obtained with Lawes' fluid, Table XIV. (p. 1525). This was called Disinfectant L (Table III.) in the pathological proceedings, and then had an average coefficient of 1.6. We now find that a previous test gave a coefficient of 2·1, and a re-calculation of Table III., Disinfectant L, from the Commissioners' report, Table XIV., gives 1.65. There is thus a very considerable error in this method of control.

Elsewhere I have insisted that any lengthening at the time of the test so as to include a 30-minutes' time of contact is open to the objection that we want disinfectants to act in the shortest possible time. The change of temperature to 62° F. -67° F. is not justified by any scientific rule, nor does it offer any practical advantage. Long experience with the Rideal-Walker test has shown that accidental contamination is not at all likely. I have had none for two years in my laboratory, but this would not apply when working with open pots as suggested. It is an advantage to use a more resistent organism, but one cannot agree that "coli" is less variable than typhoid. Broth is a more delicate test for the recovery of the organism than is bile salt medium.

I have had no opportunity of using the spoons, but think that in some cases a quantity of disinfectant sufficient to inhibit growth the MacConkey tube might be introduced. A novel suggestion that the disinfectant in these small quantities acts as a stimulating tonic is not now referred to by the Commissioners. Moreover, the tubes do not show any improvement through using a spoon instead of a loop. inoculate 12 tests in 2½ minutes with proper mixing must demand great skill, whatever applications be used. regard to the change in the carbolic acid dilutions I may say that I always in my laboratory use stoppers, not corks, and have not noticed a daily disappearance of .003 (.969-.966) in the germicidal value of the carbolic acid. It would have been interesting had your Commissioners ascertained in what space of time that germicidal value entirely vanished.

I am, Sir, yours faithfully, SAMUEL RIDEAL, D.Sc. Lond., F.I.C.

To the Editor of THE LANCET.

SIR,-From the results published in THE LANCET of Nov. 13th, 20th, and 27th respectively, I am able to state with the greatest assurance that THE LANCET Commissioners have not examined "Sanitas-Okol" and "Sanitas-Bactox" as they are at present (and have been for some time past) made and sold, but that the observations were made upon old and superseded preparations. The published results therefore, satisfactory as they are up to a point, do not adequately express the real or comparative values of these two preparations, and I think care should have been taken to avoid such a possibility, either by obtaining the supplies

Journal of Pathology, vol. xiii., p. 152.
THE LANCET, Nov. 20th, 1909, p. 1526.

direct from the manufacturers, or if obtained indirectly there should have been a specification calling for the very latest products sold under the names in question.

Strong objection is also to be taken to the circumstance that in the case of one particular disinfectant referred to in THE LANCET report (Nov. 13th)—viz., "Cyllin," a calculation of value of cost is made based upon the bulk price of that article, whereas the corresponding calculations in respect of "Sanitas-Bactox" and "Sanitas-Okol" are based upon the price of small retail bottles. "Sanitas-Okol" as now made and sold is not a coffee-coloured emulsion, as described in THE LANCET report, and its percentage of active principles is not in accordance therewith, whilst its germicidal value is, I believe, considerably higher than that

expressed in The Lancet report.

Again, "Sanitas-Bactox" as now made contains a much higher percentage of active principles than that given, whilst its germicidal value is correspondingly greater than that expressed in The Lancet report. According to The Lancet "Sanitas-Bactox" contains 39.7 per cent. of phenoloids, whereas as now made it really contains much more, and subjected to Mr. Wynter Blyth's acetone process it shows a content of 54 per cent. Table XXVI. shows "Sanitas-Bactox" to be the cheapest of all the coal-tar disinfectants examined by the Commissioners having regard to germicidal efficiency, but as now made we claim it to be absolutely the strongest quite apart from price, and therefore even much cheaper than shown in THE LANCET report on the basis

Now, with respect to "Sanitas Disinfecting Fluid," which is classified in Group B as a coal-tar disinfectant, your Commissioners must have well known that it is not a coal-tar disinfectant at all, and as the germicidal test which has been imposed is only—speaking generally—applicable to coal-tar preparations, it is absolutely unreliable for adequately testing the disinfectant value of "Sanitas Disinfecting Fluid." "Sanitas Disinfecting Fluid." is quite well known to be derived from the oxidation of hydrocarbons of the terpene class (which are perfectly distinct bodies from phenols, cresols, and phenoloids) in the presence of water, and it may be noted in connexion with the analytical details given by THE LANCET concerning this article that your reporters have apparently overlooked certain important constituents which go off by volatilisation when that fluid is evaporated to dryness.

THE LANCET Commissioners must be well aware that just as the disinfectant values of corrosive sublimate, the permanganates, hypochlorites, sulphurous acid, formaldehyde, peroxide of hydrogen, and many other sanitary reagents, cannot be determined by the bacteriological test which has been used in respect of the coal-tar preparations which have undergone examination at their hands, so also that of " Sanitas Fluid" cannot be measured by any such test, and it is therefore remarkable, to say the least, that this particular preparation should have been singled out for examination by a test not applicable to it, and, further, erroneously described as a coal-tar disinfectant. The scant footnote in THE LANCET of Nov. 27th to the effect that "Sanitas Fluid" was inadvertently classed among tar disinfectants cannot be accepted as a sufficient reparation for the damaging blunder. The measure of utility of any such article is the extent to which it may be satisfactorily employed for the purposes for which it is advocated in accordance with the directions for use printed on the bottle labels, and no experiments or observations of this kind have been made by THE LANCET Commissioners in connexion with that very important and valuable preparation "Sanitas Disinfecting Fluid."

I entirely resent and dissent from the definition of disinfectant value forming the whole basis of THE LANCET report. What has been done amounts to the determination of germicidal values (not disinfectant values) of a number of coal-tar preparations by a particular bacteriological test, comparing the results at the same time with the ascertained percentages of certain contained principles, and in the result no advantage whatever is shown over the so-called Rideal-Walker test. The Commissioners fail, in my view, to properly appreciate the precise relations that exist between germs and disease as they should be viewed from the standpoint of practical disinfection, for while no one questions to-day the fact that many infectious diseases are originated by micro-organisms, yet in certainly 19 out of 20 cases it is absolutely unnecessary to employ strong germicides for 27th, we cannot but ask you to be good enough, if possible,

practical disinfection. There are, of course, occasions on which the use of relatively strong germicides is called for, and valuable preparations are to be found not only in fluids of the coal-tar order, but there are other agents whichare equally valuable, namely, such as perchloride of mercury, permanganate of potash, peroxide of hydrogen, formaldehyde, and so forth, in respect of which, however, the relative values as germicides cannot—as previously pointed out—be determined by the chemical method elaborated by your reporters on the one hand, or by the particular bacteriological test which has been used on the other hand. Butmy view of the matter goes deeper than that, concerned as it is with what has recently been termed a "revolt against the autocracy of the microbe." All along much too little regard has been paid to the opposing circumstances that disease-causing microbes have to overcome before they can establish disease. They do not create disease by their mere mechanical presence, but by the production, through chemical reactions, of certain definite poisonous substances. In other words, it is all a matter of environment, and their presence is more or less a matter of no importance so long as they are prevented from initiating the baneful changes which they are known to be capable of producing only under certain circumstances.

To put the matter in another way, disinfection is not equivalent to the mere destruction of microbes, and germicidal intensity is no measure of the value of disinfectant preparations. Removal by washing is often more efficacious up to a point than destruction by germicides. As THE LANCET has itself recently observed, "there is no factor more favourable to successful invasion of the human body by disease-producing organisms than when the air is rendered stale, warm, and musty," but no one would have resort to the use of strong coal-tar germicides for the purpose of changing the character of such air, but rather to the employ-ment of "Sanitas Fluid" or peroxide of hydrogen, both of which are capable of doing all that is wanted in such case, but neither of which can be regarded as very powerful germicides, using the interpretation placed upon such substances by your reporters.

I go further and may point out that even supposing reliance be placed upon the use of strong germicides, for most applications the disinfectant is first of all diluted enormously with water, by which time the germicidal potency is reduced to a lower level than that of "Sanitas Fluid," which is generally used pure (undiluted) and which has the further advantage of revivifying the air by reason of the activeoxygen which it contains in the form of peroxide of hydrogen. I contend that it is absolutely impossible to determine the relative values of various disinfectants by any one test, nor is such a determination called for either in the public interest or in that of municipal authorities. Disinfectants are many-sided both in character and in action, and comprise all preparations that can be usefully employed either antiseptically or for the destruction by oxidation or otherwise of filth, and generally for preventing the spread of disease. The definition of the term disinfectant is not synonymous with, nor is it to be confined to, mere germicides or poisons.

I shall be glad to know what action you propose to take in respect of this letter and to learn whether you will publish it as an addendum to the report, or procure new samples of our manufactures as now made and sold, with the object of determining their values and publishing the results before you finally close your report, or in what way you will do justice to our legitimate position and interests.

I remain, yours truly, C. T. KINGZETT, F.I.C., F.C.S., (Ex-Vice-President, Society of Public Analysts), Chairman and Managing Director of the Sanitas Co., Limited.

Nov. 29th, 1909.

To the Editor of THE LANCET.

SIR,-Permit us to congratulate you on the public-spirited action which you have taken in appointing a Commission to inquire into the standardisation of disinfectants. entirely from the fact that our disinfectant has passed your standard and been approved by your Commission as a genuine germicide, we think that the work of your Commissioners will be of lasting and very great benefit to the community as a whole.

In reading your issue of Nov. 13th, as well as that of the

to draw attention to the following facts. In the table showing the chemical results you show that our "Cofectant" (regd.) as purchased in an 8-ounce bottle cost 1.31d. per fluid ounce, and 6.6d. per 100 units of phenolic body. In your issue of the 27th you again work it out in this way, cost per ounce being 1.31d., and you give it a comparative cost in pence of 100 units of efficiency, price ratio to carbolic acid equals germicidal ratio to carbolic acid x 100, this working out at 13.4 in the case of "Cofectant."

May we point out that if "Cofectant" is bought in 4-gallon tins it costs 4s. 3d. per gallon, which works out at 0.319d. per fluid ounce. Supposing one adds 33 per cent. for the profit of the retailer, this brings it up to 0.425d. per ounce, divide this by 9.8 × 100, and the figure in your last column becomes 4.33. Again, if purchased in 40-gallon casks, our price is 3s. 9d. per gallon, which works out at 0.2812d. per fluid ounce; add 33 per cent. and this brings it to 0.3742, which divided by 9.8 × 100 gives a price of 0.381d. for your last column. You will see that "Cofectant" bought in bulk is enormously cheaper even than crude carbolic acid.

If you could see your way in justice to us to insert this letter we should be extremely obliged, as when we determined to start in the disinfectant trade we determined to charge only fair manufacturing profits in order that we might supply the public with an efficient germicide at a reasonable price.—We are, Sir, yours faithfully,

EDWARD COOK AND CO., LIMITED.

THOS. ALEX. COOK, Director.

Bow, London, E., Dec. 3rd, 1909.

THE CONGENITAL FACTOR IN HERNIA AND ITS BEARING ON THE OPERATION OF RADICAL CURE.

To the Editor of THE LANCET.

SIR,—In 1899 there was published in THE LANCET a paper by Mr. R. Hamilton Russell of Melbourne on the congenital factor of hernia. The conclusions at which he arrived were set forth as follows: 1. Oblique inguinal hernia is invariably caused by the presence of a congenital sac which in the vast majority of cases is provided by patency of the whole or a portion of the processus vaginalis. 2. There is no evidence in favour of the view that congenital weakness of the abdominal wall in the inguinal region is a factor in the causation of inguinal hernia. 3. While actual weakness of the abdominal wall in the inguinal region is frequently met with and is an occasional cause of recurrence after operation, such weakness is not congenital, but is an acquired weakness due to the existence of the hernia and the use of a truss during a lengthened period. 4. Complete removal of the sac when performed before the abdominal wall has sustained such damage will not be followed by recurrence. 5. The causes of recurrence after operation are three in number-viz., (1) the above-mentioned acquired weakness; (2) incomplete removal of the sac; and (3) traumatism, the

result of misguided methods of operating.

The existence of a congenital factor in some inguinal herniæ is, of course, obvious and familiar, but so far as I am aware no surgeon previously had put forward so sweeping and so consistent a theory and supported it by such cogent and convincing arguments. Although it was opposed to the current doctrines of the text-books and to the practice of most surgeons, this theory made many converts among those who were beginning ten years ago to operate on much larger numbers of herniæ than was formerly thought practicable or advisable, and anyone familiar with the trend of surgical opinion to day as shown in periodical literature, and even in the later text-books, cannot fail to recognise that Mr. Russell's views have made great progress towards general acceptance. Nevertheless, the full importance of the congenital theory and of its bearing on operative practice is not, I believe, as fully realised as it deserves to be. Whether the ordinary inguinal and femoral herniæ are in their essential nature "ruptures," that is, the result of strain, or primarily due to a congenital sac. and impossible without it, is not a matter of mere academic interest but of vital importance in the operation of radical cure. If Mr. Russell is right, as I believe him to be, then

the operation most generally practised in London—viz., that of Bassini or some modification of it—is based on a radical misconception. If we accept the older doctrine embodied in the popular term rupture we accept also the belief that the essential mischief lies in the abdominal wall, and consists of a weak or weakened inguinal or femoral canal, and the chief aim of an operation devised for radical cure must therefore be to strengthen or repair the canal. It is true that all operations for radical cure remove the hernial sac before dealing with the canal, but the method of dealing with the latter is considered the fundamental point of the operation by every surgeon who does not accept the congenital theory.

Since Mr. Russell's first paper appeared in 1899, an important piece of evidence in support of the congenital theory has been brought forward by Mr. R. W. Murray, who, in 200 consecutive post-mortem examinations made upon persons in whom during life there was no history or evidence of hernia, found 68 peritoneal diverticula, of which 44 were femoral, 22 inguinal, and 2 umbilical. This evidence shows that the "pre-existing sac" is no mere hypothesis either for inguinal or femoral hernia. As I pointed out in the course of a controversy with Mr. A. Keith and others in these columns in November, 1906, only one thing remained to carry the congenital theory to its logical conclusion—namely, to show that the radical cure of hernia could be carried out with certainty and success merely by complete removal of the sac without any attempt to strengthen or repair the inguinal or obliterate the femoral canal. Up to that date I had, after dealing thoroughly with the sac, narrowed the external ring by infolding and suturing the external oblique aponeurosis, or the fascia lata in the case of femoral hernia, in all cases except children under puberty. In the latter I had always ignored the canal. From November, 1906, to November, 1908, I had in my hospital clinic 250 operations of radical cure of inguinal and femoral hernia. In all of them but an insignificant percentage the inguinal canal was left absolutely unsutured and the femoral canal was left open except for a simple purse-string suture in the fascia lata and pectineus fascia. In perhaps 2 or 3 per cent. where the hernia was excessively large or complicated by undescended testis the external oblique was sutured so as to narrow the external ring. The patients were discharged from hospital after an average stay of 10-12 days and returned to their work, often laborious work, at the end of four weeks. None wore a truss after the operation. cases were absolutely unselected, included all sizes and durations of hernia and every age from six months to 70 years. As I have shown in previous publications, when recurrence of hernia takes place after operation it appears almost invariably within 12 months of the operation. If, therefore, the closure of the canal is an essential part of the operation, a large number, if not all, of these cases would have recurred long before the present date. At the very least there should have been a greatly increased rate of recurrence. As a matter of fact, only 9 cases have presented themselves, and have all been cured by a second operation. As every case is kept under observation as far as possible for 12 months, and is told to report recurrence at once. I am confident that this number includes practically all recurrences to date. It is noteworthy that they do not include a single case of femoral hernia, and I have not in the whole of my experience had a single femoral hernia recur after operation. In a recent text-book on hernia by Mr. McAdam Eccles (1908) the author remarks: "The operation (for femoral hernia) should be undertaken only with the patient's or the friend's full knowledge that a cure cannot be confidently promised, and that a truss will have to be worn in many instances at any rate for some length of time after the operation has been done.

My own experience has convinced me, on the contrary, that a radical cure of femoral hernia can be absolutely guaranteed, and that the wearing of a truss after an operation for radical cure is merely a confession of failure. I submit that the results in the large number of cases I have quoted above are an absolute proof that the various methods of suturing the inguinal canal are unnecessary in hernia of any ordinary size, and a sufficient proof that the sac and the sac only is the forms or origo mali. The secret of success in operations for the radical cure is complete removal of the sac and the cause of recurrence is the failure to achieve it. If the canal is laid open in order to obtain access to the sac it must

of course be restored by sutures which, far from improving the result, are merely a source of weakness and trouble. As the sac can be completely removed without laying open the canal at all in all but a few complicated cases such as some irreducible hernias and cases of retained testes it is far better to avoid this procedure. By Kocher's method, which I invariably practise, it is perfectly easy first to free the whole sac and afterwards to drag it upwards and outwards until the whole of the lax peritoneum naturally present in the neighbourhood of the internal ring is rendered taut and smooth on its abdominal surface.

In this position it is maintained when the sac is invaginated and pushed through the abdominal wall close to the anterior iliac spine in the manner familiar to all who have looked at the excellent figures in Kocher's "Operative Survery." Anyone who has once seen the ease and quickness with which this manœuvre can be accomplished and the perfect removal of the sac which it achieves I cannot imagine returning to the tedious and misdirected operations which depend for their result on suturing the inguinal canal. In speaking of perfect removal of the sac, I refer, of course, to the neck or upper portion and not the fundus. The neck of the sac is much longer than inexperienced operators suppose. If it is separated from the cord (not merely the vas but all the constituents) upwards to the fall extent the actual junction of the neck with the general peritoneum is marked, as Kocher has pointed out, by a thick pad of sub-peritoneal fat which forms an outlying spur of the prevesical fat. Indeed, to obtain full isolation of the sac it is often necessary to expose and detach the bladder both in inguinal and femoral hernias. Unless this fatty pad is reached and identified a pouch of peritoneum, or at least a pit will probably be left and recurrence is certain. This I believe to be the only cause of failure-viz., imperfect dealing with the sac, and for the benefit of house surgeons and many others to whom I have demonstrated the source of fallacy I have summed up the whole duty of the herniotomist in a few words: the sac, the whole sac, and nothing but the sac.

I venture to commend this little aphorism and the facts which it embodies to surgeons generally. The operation for radical cure of hernia has become, next perhaps to the operation for adenoids, the commonest operation in surgery. It is performed in every hospital, large and small, in the kingdom, and the numbers run into prodigious totals.

If there were less confusion of thought and more simplicity of practice among those who instruct the rising generation of students and practitioners we should hear less of operations which require four to six weeks in bed after-wards, or the "precautionary" use of a truss, or of refusing to operate on people over 40 because of the danger and uncertainty of radical operation. We should be able to agree that the operation is one of the simplest and safest in surgery, that it can be performed at any age, and that the expectation of permanent cure and relief from the nuisance of a truss can be reasonably and confidently put at 95 per cent. if no higher. I believe that the congenital theory of hernia explains and harmonises the anatomical and clinical facts which without it are full of confusion. Its general adoption will necessarily involve greater simplicity and uniformity in the operation of radical cure and will finally banish many of the complicated, misdirected, and imperfect operations which still cumber surgical text-books.

I am, Sir, yours faithfully, EDWARD DEANESLY, F.R.C.S. Eng. Wolverhampton, Nov. 28th, 1909.

THE LISTER INSTITUTE OF PREVENTIVE MEDICINE AND THE WORLD'S GRAPHIC PRESS.

To the Editor of THE LANCET.

SIR,—The governing body of the Lister Institute have noticed with much annoyance that a description with photographs of the Institute has appeared in an advertising pamphlet, entitled "The Petroleum Idea," issued by the Angier Chemical Co., Limited. As the appearance of this description has occasioned some surprise and perplexity amongst the members of the profession to whose notice it has come, the governing body would be grateful if you could find space for the enclosed letter of apology from the World's has found and proved and written that these are just

Graphic Press to the Institute's solicitors which sufficiently explains the circumstances.

I am, Sir, yours faithfully,

CHARLES J. MARTIN, Director.

Chelsea-gardens, Chelsea Bridge-road, London, S.W., Dec. 13th, 1909.

[ENCLOSURE.]

World's Graphic Press, Limited, 36-38, Whitefriars-street, Fleet-street, London, E.C., November 26th, 1909.

Messrs. Hunter and Haynes, 9, New-square, Lincoln's Inn.

9. New-square, Lincoln's Inn.

Dear Sirs,—We are in receipt of your letter of the 19th instant with regard to the photos of the Lister Institute. We are very sorry if we have indirectly caused annoyance to your client who kindly gave us the opportunity of taking the photos of the Institute. We have not seen the pamphlet to which you refer for it was not published by us, but we understand that the photos used therein are photos which we supplied to a firm who asked for them. We stated at the time the permission was granted to us that we required the photos for publication in the Scientific American.

Please accept our sincere apology for the annoyance we have caused your client by supplying the photos to the firm in question. We undertake not to use or supply the said photographs to any journal or person without, in every case, previously obtaining the consent of the Lister Institute.

World's Graphic Press, Limited, Sgn. J. Savory, Secretary.

THE INFLUENCE OF MIND AS A THERA-PEUTIC AGENT.

To the Editor of THE LANCET.

SIR,—In your issue of Nov. 27th. in a letter concerning the therapeutics of suggestion, Dr. E. L. Ash, as I understand him, states that suggestion in most cases will fail unless accompanied by some material form of treatment with the exception of some mental conditions, and adds the further information that this is a matter of practical experience and not theory. It would have been better if Dr. Ash had stated explicitly if this view was the result of his own personal experience, and not left it to be gathered whether it was his or a generally accepted opinion. My own opinion is, and also that of the highest authorities in this method of treatment, that suggestion, unaccompanied by any material form of treatment, is very much more efficacious than Dr. Ash endeavours to make out.

Those medical men who practise suggestive therapeutics with or without the induction of hypnosis do not surround it with mystery, very much the reverse, for they give fullest explanations to their patients concerning the treatment and avoid every appearance of the mystical; but where the treatment is practised by quacks I grant that an endeavour is made to surround it with mystery and occultism. Further, I should like to know what Dr. Ash refers to when he talks about "the more doubtful adjuncts of suggestive thera-peutics" This is casting a serious reflection upon those of us who use suggestive therapeutics with or without the induction of hypnosis, and calls for a definite explanation, which I trust Dr. Ash will be good enough to give, for it is most important that statements such as these should not be allowed to pass without the fullest investigation.

We who practise hypnotic suggestion do not seek to cloak the method of cure by making use at the same time of a material form of treatment, but tell our patients openly that we cure by means of verbal suggestion, and do not let them go away with a false idea that a material form of treatment has brought about the cure, as is so likely to be the case in the method of treatment which Dr. Ash advocates.

I am, Sir, yours faithfully, Douglas Bryan, M.R.C.S. Eng., L.R.C.P. Lond. Leicester, Dec. 8th, 1909.

To the Editor of THE LANCET.

SIR,—The letter of Mr. J. Foster Palmer in THE LANCET of Dec. 4th should not pass without protest, for not only does he deny any virtue to hypnotic influence, but he even accuses it of destroying reason, inducing insanity, and so on, and asks for its condemnation by "all right-thinking persons both in the medical profession and out of it."

To those really experienced in hypnotism Mr. Palmer's opinions appear to be based mainly on empty surmise, and they are hardly good natured. He further declares, for instance, that only the feeble-minded are subject to the influence of hypnotism, when every reliable authority

the subjects who are very difficult, if not impossible, to hypnotise, while the healthiest, body and mind, are the easiest. Nay, more, I have never yet seen a case in which, when properly applied, hypnotic influence has not conferred some amount of benefit, usually most marked and sometimes apparently miraculous. Let Mr. Palmer produce the cases of harm done to substantiate his assertions. There will at least be no difficulty in finding many hundreds illustrative to the contrary.

Recent contributions before learned societies and in medical journals indicate a growing interest and confidence in psychotherapy, including hypnotic influence, and it had need be so when quackery, faith-curing, and Christian Science in the hands of ignorant and unscrupulous operators have recently been gaining a dangerous ascendancy. Would it not therefore be advisable, in the interests of true science and honest professional labour, for some sort of a commission to sit upon the whole question of quackery, faithcuring, and hypnotic treatment? For by the searching inquisition involved under unimpeachable testimony educed we should surely reach conclusions which would serve to deservedly bring forward the true and mercilessly expose the false once for all.

I am, Sir, yours faithfully,

Caterham, Surrey, Dec. 5th, 1909.

HAYDN BROWN.

THE HARD CASE OF THE LONDON STUDENT.

To the Editor of THE LANCET.

STR,-The special articles on medical education appearing in THE LANCET throw much light on this question, but they do not encourage the hope that an equitable adjustment of the weights, carried by runners in the professional race, trained in London, is to be obtained quickly. Towards fairer treatment certainly many proposals have been made, only to arouse instant opposition and maintain the injustice. The institution of a State degree in medicine, recently advocated as meeting the case, does not, as objected, necessarily constitute the anomaly of a one faculty university, and did it do so a more anomalous situation than that now confronting the London medical student would not be created.

Possibly certain bodies may object to the institution of a State degree, fearing it might diminish their utility and prestige, but it can positively be asserted that to certain of them the existing disabilities of the London medical student, if much longer continued, constitute a far more serious menace. Indeed, it is more reasonable to believe that if the medical corporations could by means of the State obtain a degree in medicine for their diplomates their utility and prestige would increase rather than diminish. The alliance in another quarter sought by the two Royal Colleges in London does not appear calculated to enhance their prestige, and as it also does not appear likely to be effected it may not be out of place to plead for less curt condemnation of a State degree in medicine. Particularly so, since another alternative, a new university, seems out of the question. It is merely cruel to taunt London students with the fact that they possess a university already but do not use it; it would be fairer to say that London possesses an Imperial University which does not meet the general needs of London students. I am, Sir, yours faithfully,

Dec. 11th, 1909.

J. H. P. GRAHAM.

THE BRITISH WHITE CROSS MILK COMPANY.

To the Editor of THE LANCET.

SIR,—I have just read an account of a process of dealing with milk intended for consumption in the metropolis at the hands of a company patronised by Lord Lytton which seems to me to be open to criticism. Briefly stated, the process provides for the evaporation of the milk to a fifth of its original bulk, in which concentrated form it is despatched to London where it is diluted with water to make it up to the normal volume.

It strikes one as somewhat ingenuous to expect that milk purveyors will limit their intervention to the strict four-fifths, and even if we concede their honesty we can have no guarantee that the added water will be free from contamination, so that in reality it means opening up a further source

of possible mischief. Moreover, if ever this practice become general it will add greatly to the difficulty of tracing the origin of epidemics which are suspected to be derived from the milk-supply, since it will not be the milk-supply that has to be inquired into but a series of water-supplies.

I am, Sir, yours faithfully,
ALFRED S. GUBB, M.D. Paris.

Mustapha Supérieur, Algiers.

THE THERAPEUTIC VALUE OF LIQUID AIR AND SOLID CARBON DIOXIDE.

To the Editor of THE LANCET.

SIR,—I am much interested in the criticisms of Dr. Stopford Taylor and Dr. R. W. MacKenna regarding what I have said as to the relative advantages of liquid air and solid carbon dioxide in my paper published in THE LANCET of

Reading their letter leaves me with the impression that they have not used carbon dioxide to any great extent, and that when they do it is not compressed as hard as I consider it should be to get the best results. It should be so hard that a fragment, say, as large as a filbert, thrown into cold water immediately sinks. With such a crayon, and proper adjustment of the two important factors of time and pressure, I have found it possible to get practically any desired depth and intensity of action, and as this varies from a mild and passing hyperæmia to a complete necrosis I quite fail to see how liquid air or any other freezing agent can do any better. An application of liquid air, even made in the manner described by your correspondents, is necessarily a transient one on account of the very short time it remains liquid under those conditions, and though the effect is very vigorous while it lasts, it cannot extend very deeply. With solid carbon dioxide, on the other hand, the application may last any length of time ever likely to be required without any fear of the supply giving out, and its temperature remains constant to the last. In addition to this, carbon dioxide is easier to obtain, easier to manage, very much cheaper, and a large cylinder of the liquefied gas, as used in the mineral water industry, can be kept on hand ready for use at any time, which cannot be done with liquid air.

It may interest your correspondents to know that while liquid air has been used to a considerable extent in the London Hospital, it has been almost entirely superseded by solid carbon dioxide on account of the superior advantages I am, Sir, yours faithfully, of the latter. REGINALD MORTON.
Upper Wimpole-street, W., Dec. 13th, 1909.

ADAMS v. POMEROY: AN APPEAL.

To the Editor of THE LANCET.

SIR,—The case of Adams v. Vanity Fair and others is of considerable interest to the medical profession. action was originally brought against Vanity Fair, Limited, the editor of Vanity Fair, the printers, the publishers, and the writer of the article, Mr. Ernest Pomeroy. The first four made and published a full apology to Dr. Adams. which she accepted on condition that they paid costs up to the date of their apology, so that, at an early stage of the hearing, proceedings were stayed against all except the lastnamed defendant, Mr. Ernest Pomeroy.

The article which formed the basis of the Adams libel action was published in Vanity Fair on Oct. 7th, 1908, and it is typical of the attacks previously made by Mr. Pomeroy against the medical profession, particularly in connexion with the subject of vaccination. It contained scandalous and absolutely untrue statements regarding the whole medical profession, and suggested an imputation against Dr. Adams personally which, if true, would necessitate her exclusion from the profession on the ground of infamous conduct. She strongly resented the general as well as the personal attack, and, in our opinion, she rendered a public service by her action in bringing the defendant into court at her own risk and exposing his methods. We believe that this view will be generally endorsed and that many members of the profession will be glad to show their appreciation of the trouble and anxiety incurred by Dr. Adams,

largely from altruistic motives, by contributing to a fund for the reimbursement of her out-of-pocket expenses.

After the judge's summing up, which contained a scathing criticism and condemnation of the writer of the article, and in which he emphasised the point that the individual opinions of the jury on the merits or demerits of vaccination ought not to affect their verdict, the finding of only \$\frac{1}{4}d\$. damages came as a surprise to those in court. The taxed costs will not cover all the legal expenses which Dr. Adams has incurred, so that there will be a deficit of at least £100.

Contributions are invited, and may be sent to the honorary secretary of the Adams Fund, Dr. L. Garrett Anderson, 114A, Harley-street, London.

We remain, &c.,

WILLIAM WHITIA.
HENRY T. BUTLIN.
EDMUND OWEN.
THOMAS BARLOW.
VICTOR HORSLEY.
MARY SCHARLIEB.
F. MAY DICKINSON BERRY.

The following subscriptions have already been received: -

	£	8.	d_{-1}		£	8.	d.
Mrs. Garrett Anderson,			1	Dr. Jane H. Walker	2	2	0
M.D	5	0	0	Dr. May Thorne	5	0	0
Mrs. Dickinson Berry,				Mrs. Scharlieb, M.S Mrs. Stanley Boyd, M.D.	5	0	0
M.D	1	1	0 '	Mrs. Stanley Boyd, M.D.	2	2	0
Dr. Albert Cope	0	10	6 -	Mr. Edmund Owen	2	2	0
				Sir William Church'			
Sir Thomas Barlow	5	0	0	Sir William Whitla	1	1	0
Mr. Henry T. Butlin	2	2	0 1				

A DISCLAIMER.

To the Editor of THE LANCHT.

SIR.—A report has recently appeared in certain papers of some proceedings in the Law Courts against a Mr. Dudley Wright. Several persons have been misled into thinking that this refers to our client, Mr. Dudley D'A. Wright, F.R.C.S., of 3, Bentinck-mansions, Bentinck-street, and we should esteem it a favour if you would be good enough to insert in your next issue a statement to the effect that our client is in no way connected with the defendant in the proceedings we have mentioned. One report of the case to which we refer appeared in the Daily Telegraph of the 6th inst.

We are, Sir, yours faithfully,
F. KIMBER BULL AND DUNCAN.
6. Old Jewry, London, E.C., Dec. 10th, 1909.

ANNUAL MEETING OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

To the Editor of THE LANCET.

SIR,—Every Fellow of the College becomes a Member as soon as he becomes a Fellow, so that I fail to see any point in the communication which you published last week under this heading from the honorary secretary of the Society of Members of the Royal College of Surgeons of England.

I am, Sir, yours faithfully,

Dec. 14th, 1909.

A MEMBER.

ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga prize, being the income for one year of the bequest of the late Senor Alvarenga, and amounting to about 180 dollars (£36), will be made on July 14th, 1910, provided that an essay deemed by the committee of award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but cannot have been published. They must be typewriten, and must be received by the Secretary of the College on or before May 1st, 1910. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. The successful essay, or a copy of it, shall remain in possession of the College; other essays will be returned upon application within three months after the award.

THE POOR-LAW MEDICAL SERVICE IN FRANCE.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

THE NEW FRENCH METHOD PROMOTED BY THE MEDICAL UNIONS TO SECURE FOR THE POOR THE FREE CHOICE OF MEDICAL ATTENDANTS AND THE PAYMENT OF THE MINIMUM MEDICAL FEES BY THE MUNICIPALITIES.

THERE are in France unions or syndicates which, commencing as local organisations, have gradually federated together, so that to-day 8000 medical men belong, not only to their local union, but also to l'Union des Syndicats Médicaux de France. The mission of these syndicates is to defend the interests of the medical profession from the economic, legislative, legal, and social points of view. They seek to uphold the dignity of the profession, to defend medical men when unjustly prosecuted, to influence legislature when dealing with matters in which the profession is concerned, and generally to promote the corporate interests of medical men. Of late years one of the principal questions with which it has been necessary to deal relates to the medical relief of the indigent. While in England we are discussing how our Poor-law should be altered and improved our neighbours are endeavouring to create something like a Poor-law. In England every necessitous British subject has a right to claim relief and theoretically, at least, need never starve. No such right exists in France. There are State instituted and subsidised charities and relief bureaus that give a great deal of help, but the French citizen has no absolute right to such assistance. Certainly a law was enacted on July 15th, 1893, that was meant to confer upon all the right to receive medical assistance. But this law does not give the necessary directions as to the method of administration of such relief. It merely orders the Conscillers Généraux or county councillors to provide medical assistance in such a manner as will best serve the interests of the patients and of the public funds of the district and county authorities (communes et départements). Such vagueness has naturally produced a great divergence in the methods adopted by the various local

The medical unions, on their side, however, have fortunately entertained no difference of opinion. Even those medical men who had not thought over the matter and had no clear ideas of their own were very promptly indoctrinated by the unions to which they belonged and thus throughout all the disputes that have followed the profession has not failed to present a united front. The principle on which all are absolutely agreed is embodied by the one word freedom. The patient shall be free to choose the medical attendant he prefers, and the medical practitioner shall be free to undertake that sort of practice if it suits his convenience or interests. If a medical man be willing to take such cases and if he be fully qualified, then the mayor, or whatever other authority may be in charge of this service, must not refuse to put his name down on the list of medical men from which the poor have the right to select their medical attendant. Thus far it was easy to agree, but the question of remuneration was not so readily settled. Yet in principle that was also quickly arranged. There should be the minimum fee when the patient was able to consult the medical practitioner at his surgery, then a larger fee when the patient was seen in his own house if within one kilometre, and an increase for every kilometre beyond. The lowest fees suggested under these heads were 1 franc and 1.50 francs and 50 centimes per kilometre respectively, but many practitioners thought these sums far too low. Night visits were to be charged extra and all surgical operations according to the tariff under the law on accidents to workmen.

The local authorities did not in every instance endorse the views of the medical profession. They had ideas of their own, and having the undisputed authority proceeded to apply them. In many instances they adopted the system of the friendly societies. As soon as a person had established his claim to gratuitous medical assistance his name was placed on the list of a certain practitioner, and a small sum, a very small sum, sometimes only 2 francs, or 1s. 10d., was paid for him per year to this practitioner. This system resembles the club system in England, except that the remuneration is even less.

and the patients being supposed to be paupers the payments are made by the municipality. Apart from the insufficiency of the remuneration, which is, however, a minor consideration, the great objection is that, while the medical man is converted into a salaried functionary the patient is deprived of the free choice of his medical attendant. Then further, the system lends itself to abuse, generally of a political character. A mayor may be tempted to put patients on the free list so as to secure their votes at the next election, and he may inscribe these patients on the list of the medical officer whom he wishes to influence in his favour, though the profits to be obtained from such practice must be slender. In rural districts, where the allowance for travelling adds considerably to the fees paid and where there are very few well-to-do patients, this poor practice is of importance. Even where the free choice of the medical adviser is established in principle it is not always applied in practice. For instance, Dr. Ed. Duchemin, practising in the department of the Côtes-du-Nord, relates that in many communes the mayor inscribes, or causes to be inscribed, on the ticket given to the patient certifying that he is entitled to gratuitous medical attendance the name of the medical man he is to consult. This is, of course, absolutely contrary to the regulations; it is for the patient himself to write in the name of the medical practitioner he On being questioned why they thus transgressed against the rule the mayors generally replied that the poor people were very embarrassed when called upon to make a choice. The weakness of this excuse becomes manifest when, on examining the choice made by the mayor, it proves to be in favour of some active political supporter or of a member of his own family. Such nepotism is inevitable whatever may be the system adopted so long as the patient is not given absolute freedom of choice.

The law of 1893, though susceptible to abuse, would be favourable to the interests of the medical profession if properly applied. It should put an end to the very extensive gratuitous attendance on the poor which falls to the lot of most practitioners. For all such attendance the public authorities have now to pay, a very small fee it is true, but nevertheless some return for frequently arduous work. On the other hand, there is the danger that some persons who are not poor, who could afford to give fees, will be put on the free list from motives of favouritism. The medical profession would therefore lose the better fees which these people as private patients would have to pay. Then there still remains a number of persons who are really unable to give anything and yet are too proud to apply for a ticket for medical attendance at the public cost. Such patients make promises they cannot fulfil, and thus in spite of the new law the medical practitioner finds that he has been working for nothing. There is, however, a way out of this difficulty. When the practitioner feels convinced that his patient is too poor to pay he can himself go to the town hall and demand that his patient be enrolled on the free list. Such a request when made by the medical practitioner himself is very rarely refused. Thus it amounts to this, that when the patient does not pay the municipality must do so in his stead. Of course, the municipality only pays the minimum fee and could easily recover the amount from the patient if the latter was only pretending to be poor.

Dr. Proby, of Oullins (Rhône), in l'Avenir Médical, suggests that when called to a patient who is manifestly unable to pay, he should be urged to claim his right to medical relief. It should be explained that this is no charity, but a right recognised by law, that everyone has to pay additional taxation so as to be insured against the extreme misery of having no medical assistance when ill. If the local authority hesitates to grant this right then application must be made to the representatives of the central authority—namely, the prefect of the department. The prefects are complaining that the law is not yet effectively applied, that many still suffer for want of proper medical attendance, and that the small local authorities are negligent; but the prefects cannot interfere on behalf of the poor unless the poor themselves complain. It would therefore be well if medical practitioners explained to the poor what are their legal rights. Dr. Proby argues that if a State or a nation offers medical attendance and medicine gratuitously to the poor this is done from praiseworthy motives of humanity, but there is also

to preserve for the benefit of society the health of its workers, for this constitutes the most precious national asset. Especially is this the case in France, where there is no increase of population. Dr. Proby is very clear that the patient should have the right to choose his He says:--"Because a patient is in such unfortunate circumstances that he cannot afford to pay for a medical attendant, that is no reason why he should be deprived of the liberty of disposing of his own person. Do we not know that the confidence of the patient is the practitioner's most useful ally? Would it not be odious to impose a doctor on a sick man who must listen to the story of all his suffering, to all his confidences, all his secrets, who must bring him consolation even if he cannot cure him, when this doctor, rightly or wrongly, is not trusted but absolutely disliked by the patient?'

It is assuredly sound economy to see that the sick poor have medical attendance early, for otherwise their diseases will be aggravated and they will end by going to a hospital, where they will cost the community a much larger sum. The better the attendance given at the patient's home the less will be the pressure on the hospitals. If medicine and efficient medical attendance is provided gratuitously, many patients now taken to a hospital might remain in their homes surrounded by their families. This would cost less, especially in France, where nearly all the hospitals are municipal hospitals. But, of course, a patient is not so likely to receive good treatment at home if his medical attendant is not properly paid for his trouble. any case, the medical attendant will seek to get rid of a troublesome patient by passing him on to a hospital. Thus from all points of view it is best policy to give full satisfaction to the claims brought forward by the medical syndicates, particularly as the medical practitioners who have not joined these unions are often consulted. Thus, for instance, in the department of the Cher there are 110 practitioners, some of them in the union, whilst some have not yet joined. Before communicating to the prefect and demanding the recognition of the principle of the free choice of the medical attendant by the poor in receipt of relief, all these practitioners were asked to state whether or no they supported this principle. The result of this plebiscite of the profession was: "Yes," 83 votes; "Yes, but with some conditions," 8; "No," 5; "Failed to reply," 14. In the course of time, and after the result of this vote had been submitted to the prefect, he agreed to negotiate with the Medical Syndicate so as to arrive at a common understanding with regard to the gratuitous medical service. Altogether and throughout France the principle of the free choice by the poor of their medical attendant has been admitted in 63 out of the 86 or, if the colonies are included, the 91 depart-But there have been many struggles and local medical strikes to bring about this result.

As an illustration of the way the system of medical poor relief works, a petition sent to its county council by the bureau of the medical syndicate of L'Ille-et-Vilaine be quoted. This department, which has the town of Rennes for its capital and is well known to the English frequenters of St. Malo, possesses a total population of 611,805 inhabitants. Of these 50,817, or 8.30 per cent., receive poor relief. The outlay for public assistance is 262,131 francs (£10,525) per annum. This equals an expenditure per inhabitant of 0.43 franc, or 44d.; or of 5.17 francs (4s. 14d.) per recipions of relief. Out of this total arrangilisms. recipient of relief. Out of this total expenditure, 89,150 francs, or 0.14 franc per inhabitant, or 1.75 francs per person relieved, are paid to the medical men in attend-The department occupies the thirty-first rank in order of corporate wealth, and the third place as regards the number of persons relieved out of the 54 departments for which the necessary statistics are obtainable. In the department of the Loire-Inférieure, of which Nantes is the principal town, there is a population of 666,748 inhabitants, but only 38,441 receive poor relief, and in the Côtes-du-Nord, with 611,508 inhabitants, not more than 26,551 receive relief, yet it is placed as low as the seventy-first amongst French towns in respect to the wealth of its populations. In the Calvados those who receive poor relief cost 29.25 francs, in the Loire-Inférieure 19.60 francs, in the Côtes-du-Nord 11.58 francs, in La Manche 7.20 francs, and in Ille-et-Vilaine another reason. Such relief is given not only for the sake of those who receive it—there is a higher and more general interest to be served. The object is department of L'Ain the medical attendant receives 4.35

francs on an average for every patient in receipt of medical relief. In 11 departments, out of the sum spent on each individual in receipt of poor relief, the medical attendant receives as his fees an average of 5 francs, or 4s.; in 22 departments he receives from 7 to 8 francs, in 11 departments from 8 to 10 francs, and in 12 departments from 11 to 13 francs. Out of the 54 departments that have supplied statistics 40 have adopted the principle of the free choice of medical adviser.

The chief objection alleged against this method is its greater expense. The poor, it is said, will naturally select the practitioner who treats them with the greatest kindness, and is easily induced to prescribe agreeable stimulants and restoratives; that therefore the bill for drugs and for relief in kind will be augmented. But there is no difficulty in establishing beforehand what sort of prescriptions may be made, and experience has shown that other systems are at times quite as expensive. Again, it is not as if these pauper patients represented a mine of gold. At best the remuneration for attending them is so very small that it does not constitute a sufficient temptation to induce a medical practitioner to go out of his way to secure their preference. Consequently it seems very likely that in course of time all the local authorities in France will apply the methods which have already been accepted by the large majority of county and district councils. The cost in France is generally borne by all three tax-collecting authorities: the commune, which in England we should call the rural or urban district council or borough; the department, or county council; aided, where there is special need, by subventions from the State. By indirect taxation, and especially by the octroi (or town dues), the poor pay a larger proportion of their incomes in taxation than the wealthy classes. The tendency is to look upon taxation more and more as a form of insurance against sickness and poverty and the other ills of life. The medical profession, by the voice of its representative organisations, declares that it endorses heartily all such social legislation, and its members are quite willing to pay the increased taxation in common with other citizens. But having thus subscribed its full share there is no reason why the medical profession alone should be expected to contribute further by attending on the poor without adequate remuneration. All other persons concerned are paid. The butcher, the baker, the grocer, who provide for the food, the clerks of the "Public Assistance" are all paid, and paid at the usual rate. The medical man alone is expected to give his services for nothing, or for next to nothing. But a great improvement will have been realised if henceforth the municipality is bound to pay when the patient fails to do so. The medical practitioner will then be sure of receiving at least the minimum fee. If the patient objects to the stigma of pauperism he has only to pay the fees and his name would at once be effaced from the free list kept at the town hall.

The following things will certainly bring about a very great change in the position of medical practitioners: Firstly, that no one, whether rich or poor, shall suffer for want of medical assistance; secondly, that the sufferer shall choose his medical adviser; thirdly, that the medical adviser shall receive at least the minimum fee, if not from the patient then from the municipality. This is certainly a very simple and vet a very thorough scheme of medical poor relief. Nor is this merely a scheme; its application is now in course of development. It has met with the almost unanimous approval of the medical profession of France and is endorsed by the great majority of the local authorities which administer the public funds destined for the relief of the poor.

PREGNANCY AND EMPLOYMENT.—Our Paris correspondent writes that a statute relative to the employment of female workers during pregnancy has just been passed in France. It provides that absence of a woman from work for eight weeks covering the period which precedes and follows her delivery shall not entail dismissal by her employer on the ground of breach of contract. The woman shall inform her employer of the reason of her absence. Any agreement waiving her rights shall be void in law. In the event of dismissal by the employer she shall be entitled to claim damages from him.

THE 1909 CHOLERA EPIDEMIC IN EUROPE AND SPORADIC PLAGUE IN THE NEAR EAST.

(FROM THE BRITISH DELEGATE TO THE CONSTANTINOPLE BOARD OF HEALTH.)

Cholera in Russia.

THE cholera returns for all Russia (excluding St. Petersburg) in the last few months are summarised in the following

Between	July	5th	and	July	11th		(858)	cases,	384	deaths)
,,	••	12th	••	,,	18th		(806)	••	348	**)
••	••	19th	••	••	25th		980	,,	454	,,	
••	.,	26 th	••	Aug.	1st		973	••	428	••	
••	Aug.	2nd	.,	••	8th		819	••	396	,,	
••	••	9th	٠,	••	15th		954	,,	401	,,	
**	••	16th	,.	••	22nd	•••••	1373	••	525	,,	
••		23rd	٠,	••	29th		1089	••	533	••	
,,		30th	٠,	Sept.	5th		1242	,,	544	,,	
••	Sept.	6th		••	12th		1182	••	533	.,	
.,	,,	13th	,,	,,	19th		979		504	,,	
,,		20th	••	٠,	26th		801	•••	379	••	
••		27th	,,	Oct.	3rd		598		288	••	
,,	Oct.	4th			10t h		442	,,	224	••	
••		11th	••		17th		276	••	168	•••	
	••	18th			24t h		(172	,,	78)
,,	•	25th			31st		(125	••	62	.,)
,,	Nov.	lst	••	Nov.	7th		(82	,,	39	•)
	(All 1	he at	ove o	iates s	re acc	ording t	o the (zle.)		

(All the above dates are according to the Old Style.)

In this table the figures given within parantheses are uncorrected, and consequently considerably below the truth. During the present epidemic the Russian authorities have published weekly returns, but the figures given for one week have invariably been corrected during the subsequent week, and the result of this correction has always been to add something like 20 or 25 per cent. to the figures issued the previous week. For the first two and the last three weeks included in the above table I have only been able to obtain the uncorrected figures. The above returns, moreover, do not include the figures for St. Petersburg and suburbs, which have been as follows, since the disease appeared there in May last:—

Week ending-	Cases.	Deaths.	Week ending-	Cases. Deaths.
May 23rd	23	12	Aug. 15th	172 81
" 30th	58	19	22nd	172 72
June 6th	174	40	" 29th	183 49
., 13th	489	140	Sept. 5th	244 90
,, 20th	557	193	" 12th	2 62 103
,. 27th	643	271	,, 19th	256 99
July 4th	714	272	" 26th	231 80
,, 11th	493	229	Oct. 3rd	208 98
" 18th	361	158	,, 10th	128 55
" 25th	231	98	,, 17th	99 41
Aug. 1st	210	7 7	" 24th	81 20
" 8th	195	71		

(In this table also the dates are according to the Old Style.)

The total figures for St. Petersburg down to Oct. 24th (Nov. 7th) had, therefore, been 6184 cases and 2368 deaths. The totals for the rest of the Russian Empire down to the same date had been 19,054 cases and 8485 deaths.

The present epidemic of cholera in Russia, like those of 1907 and 1908, has been very widespread, as shown by the following facts. Beginning in the city of St. Petersburg in May, it had by the first week in July extended to the following governments: St. Petersburg, Vologda, Arkhangel, and Olonetz in the north; Novgorod, Pskof, Vilna, Vitebsk, Courland, Livonia, and Finland in the west; Moscow, Yaroslavl, and Riazan in the centre; Viatka in the north-east; and Simbirsk on the Volga. In the week ending July 11th, the governments of Kharkof, Tver, Esthonia, and Kostroma were added to the list, and in the two following weeks those of Tula, Mogilef, Poltava, and Kherson. Then, in the week ending August 8th, the disease spread to the governments of Nijni-Novgorod, Samara and Saratof on the Volga, and to that of Perm, in the extreme north-east of European Russia. In the week ending August 15th it appeared in the Siberian government of Tomsk, and in that and the next two weeks it extended to the governments of Smolensk, Kovno, Kief, Ekaterinoslav, and the

Taurida. In the week ending Sept. 5th the governments of Minsk, Astrakhan, Voronezh, and Kazan first appeared in the list, and the presence of the disease was announced in Vladivostok, on the Pacific. (It would seem possible, even probable, that the infection in Vladivostok came from some centre in the Pacific, rather than by an extension from the west through Siberia, since none of the other Siberian governments, save that of Tomsk, have figured at any time in the weekly returns). In the week ending Sept. 12th cholera appeared in the governments of Grodno, Suvalki (Poland), and Ekaterinoslav; in that ending Sept. 19th Baku, on the Caspian, became infected; in the week ending Sept. 26th the governments of Tchernigof, Kaluga, and Tambof; in that ending Oct. 4th the town of Derbent (in the Caucasian province of Daghestan); and finally, in the week ending Oct. 24th the government of Volhynia appeared for the first time in the lists. Mention should also be made of an outbreak of the disease, in the last week of the series, in Yalta, on the shores of the Crimea.

The intensity of the epidemic has, of course, varied considerably in different parts of the country. It has been particularly persistent and severe in the capital, the figures for which were quoted above; and in the governments of St. Petersburg (1324 cases, 726 deaths), Arkhangel (744 cases, 381 deaths), Vitebsk (3390 cases, 1315 deaths), Tver (728 cases, 332 deaths), Yaroslavl (985 cases, 512 deaths), and Novgorod (768 cases, 358 deaths). The governments on the Volga have this time been comparatively lightly visited. In the more outlying parts of the empire it may be noted that 63 cases and 27 deaths have occurred in Baku; that in Derbent (Daghestan) there has been only 1 case and 1 death; in Finland only 10 cases and 5 deaths; in the Tomsk government (Siberia) only 2 cases and 1 death; while in Vladivostok, on the other hand, there have been as many as 142 cases and 94 deaths. (In each case the figures just quoted refer to the period between the beginning of the epidemic and the week ending Oct. 24th, Old Style). As on previous occasions, the present epidemic in Russia has been characterised here and there by the occurrence of "cholera riots" in a few villages, and by the carrying out in others of some very curious superstitious and practically pagan rites, intended to conjure away the evil demon of the disease.

A Case of "Laboratory Cholcra."

The Russian medical journal, the Vratch, published in July last the following interesting details of a case of cholera contracted in the course of laboratory work. A lady student working in a laboratory in St. Petersburg was investigating the agglutination characters of a cholera vibrio isolated from a sample of water taken from a manufactory in the city. By accident some of the contents of a pipette entered her mouth. In spite of immediate efforts to disinfect the mouth, a typical attack of cholera followed, and the dejecta were found to contain enormous quantities of comma vibrios. Fortunately the patient recovered. The incident is a most instructive one, and the conclusions to be drawn from it are obvious.

The Pilgrimage and the Cholera Epidemio.

The fêtes of Kurban Bairam will take place in about three weeks from now. The contingent of pilgrims from the north has not been a very large one this year. They have been subjected to the necessary measures in the Turkish lazarets of the Black Sea and Mediterranean, and so far there has fortunately been no case even of suspected cholera among them. A suspicious death, however, recently occurred on board a sailing ship arriving at Kopmish, on the Russo-Turkish frontier east of Trebizond. The ship had come from some of the Russian ports on the eastern shores of the Black Sea.

Cholera in Persia.

Within the last few days it has been reported that cholera has appeared in the Persian portion of the (double) town of Astara, situated just where the Russo-Persian frontier comes down to the shores of the Caspian.

Cholera in Germany.

In view of the prevalence of cholera in the Baltic provinces of Russia it is not surprising that the infection has spread to the adjoining districts of East Prussia. The following details have been communicated officially to the Board of Health here. On July 20th a passenger arrived by train at

the following day from cholera; the diagnosis was confirmed bacteriologically. On Sept. 18th a German raftsman died from cholera at Pokalina, Heidekrug (East Prussia), and his wife was attacked by the disease. The infection was believed to have been brought by timber rafts floating down the Memel from Russia. In these cases also bacteriological evidence confirmed the diagnosis of cholera. A sanitary station was opened at Schmalleningken, on the Memel. A Berlin telegram, dated Oct. 29th, stated that since Oct. 9th the following cholera cases and deaths had occurred in the basin of the Memel: in three places in the Heidekrug district 7 cases and 2 deaths; in two places in the Niederung district 11 cases and 2 deaths; and in that of Tilsit Land 1 fatal case. Measures had been taken, it was added, for the sanitary control of the river. Between Oct. 29th and Nov. 5th 3 cases occurred in one place in the Heidekrug district, 3 cases in two places in the Niederung district, and 4 cases in the Labian district. The two former districts are in the prefecture of Gumbinnen, and the last in that of Königsberg.

Cholera in Holland.

At the end of August news was received here that cholera had appeared at Rotterdam. From August 20th to Sept. 1st 25 cases of the disease were seen in that town, and 3 in other places in the Dutch provinces. About the same time 2 cases were reported from the neighbourhood of Amsterdam. From Sept. 1st to Sept. 7th 24 cases were observed in all Holland, of which 20 occurred at Rotterdam, and single cases at Middelburg, Utrecht, Breda, and Helsteren. Later information showed that the disease broke out first in Rotterdam, where, on August 20th, four persons died in one family alone. A bacteriological inquiry showed that they had died from veritable cholera. On Sept. 10th a case of the disease was reported from Dirksland and another from Amsterdam. No case had occurred in Rotterdam since the 4th. A telegram of Sept. 28th stated that "a second case" had occurred in Hanswert, the two patients being husband and wife, hairdressers, who took in boatmen as lodgers. Still later telegrams showed that a third case occurred in this family at Hanswert, that two cases had been seen at Lopik, and that at Hattom (near the Zuyder Zee) 4 cases with 1 death had occurred in one family. On Oct. 20th a fatal case of the disease was seen at Yaarsveld, in the Utrecht province, and a second case in the same family followed on Oct. 25th. Since then no further news has been received here concerning cholera in Holland.

Cholera in Belgium.

A telegram from the Ottoman Consul in Antwerp was received here early in September, stating that on Sept. 4th a boy, aged 14 years, had died in the village of Lillo, north of Antwerp, from fulminant cholera, and that his brother, aged 16 years, was attacked with the same disease; both were sons of the owner of a boat that had come to Lillo from Utrecht. In the former case a bacteriological investigation could not be carried out, but in the latter such investigation was made and showed that death had been really due to Asiatic cholera. It was further stated that on August 29th the owner of a barge coming from Rotterdam to Lillo had died from a suspicious disease, but that a bacteriological examination had given negative results. A later report from the same source, dated Sept. 28th, stated, on the authority of the Governor of the Antwerp province, that "none of the cases till then reported in Belgium had been confirmed bacteriologically"—a statement in direct contradiction of the earlier reports. A month later (Oct. 29th) the same consul telegraphed that, from personal inquiries, he had established that at a distance of 17 kilometres from Antwerp there had occurred in the course of eight days nine cases of Asiatic cholera with six deaths. Two days earlier the Belgium authorities had officially admitted that some cases of the disease in which the cholera bacillus had been found had occurred in the Antwerp province. It was believed that the infection had come from drinking water on board certain barges coming from Holland and touching at places on the banks of the Escaut.

Cholera in Galicia and Moravia.

On July 28th the Ottoman Embassy at Vienna telegraphed that a suspicious case had been seen at Lemberg, and in later telegrams, dated August 24th and 30th respectively, the same authority reported a suspicious case at Napagedl in Königsberg, coming from Russia. He was already ill and died | Moravia, and a fatal case of Asiatic cholera in Galicia, the name of the place where it had occurred not being mentioned.

Plague in Adalia.

It will be recalled that, as stated in my last letter on this subject (published in The Lancet of August 21st, p. 576), 5 cases of plague, with 3 deaths, occurred at Adalia in July. After the 29th of that month no further case was seen until Oct. 25th, when 2 fresh cases were reported. The patients were the son (aged 4 years) and the servant (aged 15 years) of a merchant in the town. They appeared to have been ill since the 16th and 24th of the month respectively. On the 28th a third case occurred in the same house. The house had apparently simply been "cordonned," with sick and healthy together, and this patient developed the pneumonic form of the disease, which rapidly proved fatal.

Plaque in Berrut.

The occurrence of a sporadic case of plague here in July was reported in a former letter. Quite recently three fresh cases have been reported; the first was seen on Nov. 25th. He had then been ill for ten days. The second was seen on Nov. 27th (the eighth day of the attack); the third on Dec. 1st. In the first and third there was bacteriological proof that the disease was plague.

Plague in Alexandretta.

In both Adalia and Beirut plague has been probably endemic, though in sporadic form, for some time past. It has now appeared for the first time in Alexandretta. Two cases were seen there on Nov. 30th; they were the son and daughter of a labourer who had died with suspicious symptoms a fortnight before. At the same time a youth, employed in a store where grain coming from Bombay by way of Alexandria is dealt in, was also found to be suffering from plague. It is added that dead rats had been found in the latter store and in that where the father of the other two patients had worked. These two stores adjoined.

Plague in the Kirghiz Steppes.

In August last the Russian Plague Commission announced officially that several cases of pneumonic plague had occurred in the village of Iltoi, in the district of Ulentin, 140 versts from the town of Uralsk; 22 deaths had occurred, and no further cases were reported after July 31st. This village is obviously in the region of endemic plague described in my letter on this subject which was published in THE LANCET of April 24th last (p. 1197).

Dengue in Syria.

There has recently been a serious epidemic of dengue in Jaffa and in Beirût. Details are wanting, but it is stated that large numbers of people have been attacked in both places.

Constantinople, Dec. 3rd, 1909.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool Royal Infirmary: Roentgen Ray Installation.

Mr. C. Thurstan Holland, at the Royal Infirmary on Dec. 9th, gave an interesting demonstration with the "Snook" Roentgen apparatus which has been recently fitted up at the infirmary. The X ray department of the hospital in 1905 had 300 patients, and there were now about 3000 cases annually, each ward of the dispensary sending not merely cases where people had been injured by bullets, needles, pins, coins, &c., but cases of the chest, stomach, kidney, and other complaints. Many plates of such cases were shown by Mr. Holland, who said Punch's forecast regarding the little boy who ate overmuch Christmas fare and was subjected to the Roentgen rays had literally come to pass, although at one time it was entertained as a humorous idea. The cost in connexion with the X ray department at the infirmary was seriously increasing, and Mr. Holland mentioned that the hand of bis assistant was permanently injured by the rays, despite the protective measures adopted. Additional accommodation for the X ray department would be afforded when the erection of the new out-patient department had been completed. Mr. Ralph Brocklebank (chairman of the committee of the infirmary), Mr. Holford Harrison (honorary treasurer), Sir James Barr, and others expressed their

appreciation of the lucid demonstration given by Mr. Holland who so ably fills the post of director of the department.

Hospital Saturday Fund.

The Lord Mayor presided at the annual meeting of the Liverpool Hospital Saturday Fund, held on Dec. 7th at the Exchange Station Hotel. There was a considerable and representative gathering. The committee regret that, notwithstanding a strenuous year's work, there was for the first time since the year 1887 a decrease in the receipts for the year. Steadily from £2870 at that time the fund increased, until in 1908 the income was £10,136. Through a combination of circumstances, the principal one being trade depression and its consequent lack of employment, the returns for 1909 only show £8,775, a decrease of £1361. The greatest loss has taken place in the workshop collection. This is attributable to two causes. First, several amounts equal to nearly £90 from special efforts have not been available this year; and secondly, the serious decrease in the subscriptions from contributing firms, especially those where the systematic collection is adopted. The collection has suffered most where the weekly system is in force. Another serious loss has been the 10 per cent. so kindly promised by the guarantors, and which last year realised £433. Since the inauguration of the Fund in 1871 the sum of £179,360 has been collected through the agency of the Hospital Saturday Fund. There are at present 1082 firms assisting the Fund, a considerable number of which only have the annual collection, and the committee again urge the adoption of the weekly system.

Liverpool Medical Institution.

Dr. T. R. Bradshaw, senior physican to the Royal Infirmary and lecturer in clinical medicine at the University of Liverpool, has been nominated by the council of the society as president for the ensuing two years. Dr. Bradshaw has long taken an active interest as a member of the Faculty of Medicine at the University in the education of the medical student. He was the first to draw attention in this country to the significance of albumose in the urine and its association with a special form of bone disease, and gave to the clinical complex the name by which it is generally known in this country—myelopathic albumosuria. He has also been an examiner in medicine at the University of London.

Dec. 13th.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

University Service at the Cathedral.

ON Dec. 7th a special service was held at the Cathedral, by invitation of the Dean, to celebrate the foundation of the University. The members of the corporation attended in state, and together with the University professors and a large number of students made an imposing gathering. The Vice-Chancellor, Pro-Chancellor, and Pro-Vice-Chancellor were also present. The sermon was preached by the Rev. A. A. David, M.A., late headmaster of Clifton College, who has recently been appointed to the headmastership of Rugby.

Testimonial to Professor Lloyd Morgan.

Subscriptions to a testimonial fund for Professor C. Lloyd Morgan are being collected from among those who are concerned with the University, either directly or indirectly. Professor Lloyd Morgan's services to the University of Bristol have not simply been those of an eminent science teacher; he was for many years Principal of University College until the University was born, when he became the first Vice-Chancellor. In both capacities he has striven with the utmost zeal to establish higher education and propagate the University idea in Bristol, and it is felt that the gratitude and admiration evoked by such labours need some outward and visible token such as the testimonial will supply.

The University Colston Society.

The Colston Society's annual dinner has been postponed till either February or March on account of the General Election. It is hoped that on the same day the foundationstone of the new chemical and physiological wing will be laid.

Bristol General Hospital.

The president of the hospital, Mr. Joseph Storrs Fry, has

¹ THE LANCET, July 24th, p. 260.

given £1000 towards the reduction of the existing debt. The Ladies' Needlework Guild held its annual meeting at the hospital last week. The work done by the guild was on view. During the year about 2500 articles, valued at £420, were made, and £35 were subscribed for the purchase of blankets and other things which cannot be made by the guild.

Medical Inspection of School Children in Somerset.

At the last meeting of the Somerset education committee it was decided to appoint another assistant medical inspector at a salary of £250 per annum, with necessary travelling and out-of-pocket expenses. The gentleman appointed will be required to devote the whole of his time to the duties. He will have charge of the Axbridge, Long Ashton, and Wells districts, and he will also render general assistance to the chief medical inspector of schools. Dr. W. G. Savage, the chief medical inspector, reported that for the five months ended October last 8318 inspections of children had been carried out.

The Deconshire County Council and Criminal Lunatics.

At a meeting of the Devon county council held on Dec. 9th a resolution was passed to the effect that:—

This council is of opinion that there should be provided by the Government special asylums to which those convicted of crime and found insane during their period of sentence might be sent, after the expiration of such sentence, should they be found unsuited for a county asylum.

The council decided to send copies of the resolution to the Home Secretary and the County Councils Association.

The Nationalisation of Medical Service.

At the Plymouth Institution on Dec. 9th Mr. Robert Jaques delivered an address on the Nationalisation of Medical Service. There was a good attendance, and Mr. J. Elliot Square presided. Mr. Jaques, in the course of an interesting lecture, made three suggestions: (1) That the Poor-law medical service should be merged in the public health service; (2) the public health service should be national and not a local service, and should be greatly extended; and (3) all voluntary hospitals should be nationalised and all the members of the staff should be paid for their services.

The Royal United Hospital, Bath.

The annual meeting of the Ladies' Working Association of the Royal United Hospital, Bath, was held recently. The report showed that the association numbered 405 members. During the past 12 months 1202 articles of clothing for the patients and linen for the use of the hospital had been distributed.

The Long Fox Lecture.

The sixth Long Fox lecture was delivered on Dec. 14th in the Medical Library of the University by Professor Edward Fawcett, dean of the Faculty of Medicine and professor of anatomy to the University. The pro-Vice-Chancellor, Professor J. Michell Clarke, was in the chair. The subject, the Development of the Human Cranium, though an abstruse one, was lucidly expounded with the aid of many excellent lantern slides and wax models. Professor Fawcett explained the method of preparation of the models, which are built up by projecting serial microscopic sections on a lantern screen of suitable size; from the resulting pictures tracing designs are then cut out of beeswax plates of a known and appropriate thickness. Such models are of value not only for demonstration purposes but also for the elucidation of many doubtful details in embryology.

SCOTLAND.

Dec. 14th.

(FROM OUR OWN CORRESPONDENTS.)

The Proposed Reform of the Medical Curriculum in Edinburgh.

THE medical curriculum at the University of Edinburgh has been discussed and criticised at some length within the past few weeks in the newspaper press of Edinburgh. This has apparently been, in part at least, prompted by a report adopted by the Edinburgh Pathological Club on the curriculum and the general efficiency of the school. The report has been made sufficiently public to account for its being dealt with by the leading local newspaper, for University matters always arouse much public interest, not

only in Edinburgh but in Scotland generally. points in the report referred to will be of interest to many of the readers of THE LANCET as they have more than a local bearing. The report at the outset indicates that as there exists practical coordination between the University and the extra-mural school the deliberations of the committee which was responsible for its final form centred round the University curriculum. It then makes the following general recommendations: (1) It is suggested that students should begin the study of medicine in summer, instead of, as is the more common practice, in winter; (2) that a fixed curriculum should be laid down, so that students should not be allowed to take classes practically in any order they chose; (3) wherever the earlier subjects of the curriculum may studied it is desirable that the later subjects should be studied in Edinburgh; (4) there is a dangerous tendency in medical schools to treat each subject as if it were in a watertight compartment by itself, and this may be obviated by consultation between different departments to arrange for the distribution and coördination of teaching the various subjects; and (5) it is recalled that in the rearrangement of the five years' curriculum the idea in the minds of clinicians was that the strictly scientific subjects would be overtaken in the first two years, and thus the last three years would be given over to the applied sciences and to clinical work. The report then deals with the individual subjects of the curriculum, and these may with advantage be dealt with in the same manner. Botany and roology. These subjects. it is suggested, should be replaced by a short course of systematic and practical instruction in biology. should be extended by the addition of practical instruction to the present theoretical course. These two subjects, biology and physics, might be passed before the winter session began. Chemistry.—The teaching of this subject should be rearranged by cooperation between the departments of chemistry, physiology, and materia medica. By such rearrangement pharmacognosy would form part of the course of descriptive chemistry, while the time now allocated to practical materia medica would be available for organic chemistry, such as would be useful in medicine and would be a preparation for the study of physiological chemistry and of pharmacology. Anatomy.—The study of this subject and the examination in it should be completed before the third winter of study. *Physiology*.—The report practically accepts the views expressed by Professor E. H. Starling at the Sheffield meeting of the British Medical Association, when the subject was discussed by leading physiologists. The report homologates the view that there ought to be a differentiation between physiology as a branch of pure science and as a subject of medical education. Materia Medica. - The two subjects of pharmacology and therapeutics should be treated separately. Pharmacology would be best studied after the examination in anatomy and physiology, and a course of 50 lectures and lecture-demonstrations is suggested. If the rearrangement suggested between chemistry, physiology, and materia medica were effected a course of practical pharmacology would be unnecessary. With regard to therapeutics, it is held that the curriculum should contain a systematised consideration of the subject apart from the treatment it receives in clinical teaching. It is suggested that a course of 50 lectures should be given in the fourth winter. Pathology. Modifications of the teaching of this subject are considered to be necessary. It is suggested that in the third winter. when the student has begun surgery, there should be a course of 50 lectures in general pathology, and concurrently with these a course of 50 meetings for practical pathology, the two courses to form a correlated whole. At a later period there should be a further course in which regional pathology and the pathology of function should be treated of. From these subjects the report passes to the consideration of the "all-important practical subjects of the curriculum -medicine, surgery, and midwifery, and the special branches of these subjects." In Edinburgh the teaching of these three great subjects has long included a systematic treatment in lectures and clinical teaching at the bedside It is recognised that a difference of opinion exists as to the part which systematic lectures should play in the modern curriculum, and the sanction for lectures is given under nive heads—namely, (1) some students derive more benefit from oral instruction than from the reading of text-books: (2) in the earlier subjects where only a knowledge of a small part

¹ See The Lancet, 1908, vol. ii., p. 479.

of a science is necessary it is often difficult to recommend a text-book which will cover the aspect of the subject required; (3) it is fitting that in a great University the individual views of the teachers should have the opportunity of finding expression; (4) in every subject there are general aspects of questions which do not find a place in text-books; and (5) the constant progress of knowledge makes it necessary to present the most recent views on a subject. It is, however, definitely indicated that the systematic lecture should take a less prominent place in the curriculum than it has hitherto taken. The three final subjects are then dealt with seriatim. Surgery.—It is suggested that in the third winter there should be a junior course of 50 lectures on three days a week and a senior course of the same extent in the fifth winter. The other three days a week would be thus available for tutorial work at the corresponding hour. With regard to clinical work, the necessity of insisting upon a definite course of study is again emphasised so that the precise course which each student should pursue should be laid down each term. It is also emphasised that in this way the number of students attending each surgeon should be rigorously limited by the equal distribution of the students to the various teachers. In the teaching, the services of the assistant surgeon attached to each full surgeon ought to be utilised. Importance is given to the out-patient department as a means of familiarising the student with the aspects of surgical practice seen there. Surgery is thus made to occupy a prominent place in the third winter and the following summer. Medicine.—In this subject the ideal course in systematic medicine is given as 90 to 100 lectures in which every system is dealt with generally. With regard to clinical medicine, much stress is, of course, laid upon the great importance of bedside work. It is suggested that the ordinary physicians should be so correlated to the clinical professors that the students would be equally distributed amongst the various teachers. It is also suggested that the assistant physicians ought to take a definite part in teaching. Midwifery and Gynecology.— It is held that oral instruction as pursued in Edinburgh has many advantages, and it is not suggested that it ought to be altered, but that the lectures should be taken in the fourth winter. Special subjects. - These are also dealt with, but as the arrangements for taking them are largely a question of time table and not of principle, they do not require special mention. Attendance, however, on these subjects can only be properly regulated by a definite curriculum being laid down which the student must follow. Examinations. - With regard to examinations, it is suggested that the first pro-fessional subjects should be taken as they are at present. Anatomy and physiology should be passed at the end of the summer after the second winter. At the end of the third winter there should be an examination in pharmacology and elementary pathology, and in medical jurisprudence and public health at the end of the summer after the fourth winter. Another very important suggestion is made-namely, that when a candidate fails twice in a subject he should not be allowed to attend subjects in advance, but must lengthen his curriculum. The question of introducing a block system is referred to, but no strong opinion with regard to it is expressed. Other matters are dealt with in the report, but these have not the same wide interest that belongs to any proposals which have for their object the improvement of the teaching of the student.

Presentation of the Freedom of the City of Edinburgh to Principal Sir William Turner, K.C.B.

On Dec. 10th, on the invitation of the Lord Provost, magistrates, and councillors of the city of Edinburgh, a large number of citizens met in the Synod Hall to witness the conferring of the freedom of the city on Principal Sir William Turner, K.C.B., and the Rev. Principal Whyte, D.D., an eminent local clergyman. The Lord Provost, as is usual on such an occasion, gave a sketch of Sir William Turner's career in Edinburgh, and also sketched the relations past and present which subsisted between the town council and the University. As is also customary on such an occasion the recipient of the honour is expected to make a speech. This Sir William Turner did in his own strong and direct style; he was evidently much affected by having had the honour offered him and by the reception he received. He also referred to the connexion between the University and the University. The event was of peculiar interest as the freedom of the city is not usually bestowed upon citizens. Principal Whyte unfortunately was prevented by indisposition from being present.

Proposal for a New Hospital for Women in Edinburgh.

A meeting was held some days ago in the council chambers, and presided over by the Lord Provost, which had for its object the inauguration of a scheme for a sort of paying hospital for women in Edinburgh, to be officered by men. The scheme met with some criticism at the meeting, and it will be difficult to float any new charity at present; while it would require to be made very clear that it is necessary to add to the medical charities of the city before the proposal would meet with any considerable measure of support from the public or the medical profession.

Appointment.

Dr. A. K. Traill, the medical superintendent of the Sidlaw Sanatorium, Dundee, has received an appointment at the Municipal Sanatorium, Salterley, Birmingham, and has resigned his present appointment.

Poorhouse Medical Officers in Dundec.

At a meeting of the subcommittee of the Dundee parish council it was agreed to recommend for the staffing of the East Poorhouse Hospital a senior medical officer at a salary of £120 per annum, and a junior at £100 per annum. Under this scheme the services of the present medical officers would be continued.

Proposed Infirmary Extension at Dundee.

A scheme for the erection of a large building in connexion with the out-patient department of the Dundee Royal Infirmary was under consideration at a meeting of the management committee on Dec. 9th. The erection will cost between £3000 and £4000, and it is understood that Mr. J. K. Caird, who has frequently come forward to help the infirmary, has promised substantial aid towards the cost. It is proposed that the building shall face Barrack-road, and the matter will come up for further discussion at the quarterly meeting of the governors

Consumption in Turriff.

At a meeting of the Turriff district committee a letter was read, dated Nov. 11th, containing resolutions adopted at a conference on pulmonary phthisis—namely, that notification should be compulsory, that infection should be traced out by officers of the local authority, followed by disinfection where necessary; that hospital accommodation should be provided for cases that could not be treated at home. letter from the town clerk of Turriff was also read suggesting a conference with the town council as to the advisability of extending the present hospital to admit consumptive The feeling of the meeting was in favour of patients. notification and disinfection, but with regard to hospital accommodation there was doubt expressed. Eventually the chairman moved :-

That the district committee approves of the first three resolutions of the conference on pulmonary phthisis, and resolves to make notification of phthisis compulsory in the district and to instruct the sanitary inspector to assist in disinfecting houses where the disease occurs; but while willing to discuss this matter with the town council, is of opinion that a grant should be given by Government for that purpose before any provision for hospital accommodation is made from the rates

The motion was unanimously agreed to, and the matter of meeting the town council remitted to the hospital committee representatives.

Dec. 14th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Irish Universities.

THE following figures give in round numbers the students at present attending the Irish Universities:—National University: (a) University College, Dublin, 90; (b) Ceciliastreet Medical School, 270; (c) University College, Cork, 320; (d) University College, Galway, 120; total, 800. University of Dublin: Trinity College, 1200; Magee College, 90; total, 1290. The Queen's University of Belfast: Faculty of Medicine, 252; Faculty of Arts, 201; Faculty of Science, town council and also spoke of his long connexion with the 1110; Faculty of Law, 12; total, 575. As a result the total

University students at present

University students at present in Ireland are 2665. In Belfast the numbers last session were 456.

Irish Meat-Supplies.

The Local Government Board has just issued a new code of regulations relating to the inspection of all foreign meat imported into this country. The foreign meat trade was very small, indeed, when the old regulations were drawn up, but it has attained considerable dimensions, and it is desired by dealers in the article of home production that the imported meat should be submitted to a process of inspection at least as searching as that which is applied in the case of Irish meat. Of the two varieties of cold-preserved meat which are brought into this country, the "chilled" comes from Liverpool, where it has been slaughtered within the previous 24 hours or less before its arrival at an Irish port; while the frozen comes in many cases from some of the most distant parts of the earth, and may have been killed many months before arrival here. It is hoped that the new regulations for Ireland will provide precautions as careful and effective in the safeguarding of the public meat-supply and the public health as are enforced at the Port of London. It is significant of current opinion that a motion brought before the Limerick county council with the object of discontinuing the attendance of veterinary inspectors at fairs was promptly rejected, and at the annual dinner of the Dublin Victuallers' Association, which took place on the evening before the opening of the Cattle Show of the Royal Dublin Society last week, Mr. T. P. Gill, secretary of the Department of Agriculture, pointed out that the cattle trade of Ireland was being outstripped by other trades not usually considered of so high importance—trade in the produce of the dairy and the poultry-yard and that of bacon. Last year the value of these amounted in round numbers to £9,200,000, while that of the cattle exports made a total of £8,900,000.

Richmond Asylum v. Local Government Board: Report of Judgment.

The joint committee of the Richmond Asylum has published a full report of the judgment which was given in its favour in the Court of King's Bench in the case in which it successfully contested the payment of four surcharges which had been made by the auditor of the Local Government Board. The printed report of the legal details and the circumstances in which they originated (to which I have already drawn attention in this column) is accompanied by an instructive memorandum drawn up by the chairman of the committee (Mr. Richard Jones), who points out that the judgment has established that Irish public bodies are endowed with the right of protection of the interests of the members of the working population by the adoption of the fair wages resolution, and special attention is directed to the passage in which the Lord Chief Baron stated that they should guard to the best of their abilities against the danger of having that clause rendered a dead-letter. Such bodies, in the expenditure of public money, are entitled to exercise the same discretion that the members would use in the conduct of their own private and personal affairs, which includes the power of rejecting the lowest tender when it is thought fit to do so. And He indicates, finally, that it is decided that public bodies are to be allowed to manage, in the real sense of the word, the affairs which were entrusted to them-"that these gentlemen are not appointed to be mere clerks," as the Lord Chief Baron forcibly expressed it. This report will doubtless inaugurate a notable departure in the transaction of public business by the various Irish boards, and the thanks of the Irish public are due to the chairman of the Richmond committee for the preparation of the memorandum, and to this body for the publication of it and the report which it accompanies.

Bangor Hospital, Co. Down.

On Dec. 9th the foundation-stone of the new hospital at Bangor was laid by Miss Connor, who has contributed £500 to the building fund. Situated on an excellent site, this useful cottage hospital will afford accommodation for medical and surgical cases, with rooms for matron and nurses, and with an excellent operating theatre. A simple style of early Georgian architecture has been adopted, carried out in solid red brick with sandstone sills and copings.

The Belfast Branch of the Women's National Health Association.

At the second annual meeting of the Belfast branch of the

Women's National Health Association of Ireland held in the city hall, Belfast, on Dec. 13th, the Right Hon. the Lord Mayor presiding, very gratifying reports were presented from the various subcommittees on the prevention of tuberculosis, the promotion of school hygiene, and the formation of babies' clubs, showing the admirable preventive work that was being done. Among the speakers were the Lord Mayor and Lady Mayoress, the Dowager Marchioness of Dufferin and Ava, the Right Hon. Thomas Sinclair, D.L., Mr. J. S. Bryars (chairman of the Belfast board of guardians), and Dr. W. J. Maguire.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Honours to Enrico Giglioli.

THE "Republic of Science" is about to show its appreciation of the life and work of this veteran in the field of comparative anatomy and ethnographical exploration by celebrating on Dec. 20th the completion of his fortieth year of professional instruction in the Istituto di Studi Superiori in Florence. Nature students of all nationalities throughout Christendom are taking part in the ceremony and already a lengthy list of names has been received by the secretary of the organising committee (Dr. E. Balducci, Via Romana 19, Florence) in attestation of the universal interest evoked by the anniversary. Among these I may notice the representatives of nature study in the English-speaking world—British, colonial, and American—such as J. T. Cheeseman, Robert Etheridge, Professor A. C. Haddon, Sir E. Ray Lankester, Professor Henry F. Osborn, Charles H. Read, Professor G. D. Thane, Professor E. B. Tylor, Professor Bernhard H. Woodward, and Dr. E. P. Wright. These gentlemen, in compliance with the invitation of the committee, have forwarded to the secretary either their autograph, their carte de visite, or their photograph to be inserted in the album—an artistically illuminated volume in symbolical binding to be presented to Professor Giglioli along with the congratulatory address on Dec. 20th. Other participants in the "testimonial" (for such in a signal sense it is) are in course of doing likewise, thereby giving to the commemoration an "ecumenical" character in keeping with the kinship, or rather the brotherhood, of science. are special reasons for the cordiality with which Englishspeaking nature-students have responded to the appeal. Giglioli is described by his compatriots as "Italo-Inglese, having been born of Italian parents on June 13th, 1845, in London, where, after graduating in medicine at Pisa, he worked with Professor Huxley as a trusted disciple and coadjutor. He made a voyage round the world in the Magenta, and enriched the "Museo di Storia Naturale" in Florence (in which he has long been director of the Gabinetto degli Animali Vertebrati") with specimens, as valuable as they are unique, of zoological treasure-trove. A member of the "Consiglio della Società di Anthropologia," he has laid its transactions under heavy obligations by original research, while his published writings entitled "I original research, while his published writings entitled "I Tasmaniani: Etnologia e Storia di un Popolo Estinto"; "Zoologia della Magenta"; "Relazione del Viaggio intorno al Globo della Pirocorvetta Magenta"; "Iconografia dell' Avifauna Italica"; "Un Bisogno Urgente dell' Antropologia"; "Notizie sul Kalang di Giava"; "Studi Etnologici in Siberia," and many others bear witness to the variety and comprehensiveness of observations distinguished by painstaking accuracy, clear exposition, and charm of style.

Superstition.

"How 'green' is this grey world" (Shelley's memorable line) might have been the motto of Professor Pio Foà's recent lecture before a popular assembly at Milan on "Pregiudizi e Vittorie di Medicina." Superstition playing into the hands of charlatanism dates from remote antiquity and finds illustration even in what the platform declaimer referred to as "this so-called twentieth century." A generation which has witnessed the pathological and therapeutic triumphs of Virchow, Pasteur, Lister, Koch, Behring, and Schaudinn is still capable of such tragedies in "faith-healing" as that reported from the quondam states of the Church, where a poor peasant woman, bitten by a mad dog, was dissuaded from using the money subscribed to take her to the

"Istituto Antirabbico" in Rome and prevailed upon to dedicate it, with prayer, to the local Madonna, whose "saving grace" (she was assured) was worth all the medical treatment in the world. As a result of this advice she died in what the newspaper records as "dolori strazianti" (excruciating pain)—her money gift and fervent prayer notwithstanding. "Ignorance," in Loyola's phrase, "may be the mother of devotion." But it is also the parent of misery and suffering preparable exceptible in a country where the and suffering unspeakable, especially in a country where the "analfabeti" (unlettered) number more than one-third of the population.

A True Sister of Meroy.

Miss Alice Burke, whose many gifts, including a rare sagacité de cœur, were for 20 years devoted to the ailing and the injured in the Hospital of Santa Catarina in Florence, died on Nov. 23rd, at her residence in the Tuscan capital. The tragic fate of Mr. Thomas Burke, Under-Secretary to the Irish Viceroy—assassinated in the Phoenix Park, May 6th, 1882, in company with Lord Frederick Cavendish, who tried to save him—not only cost her a dear brother's life, but profoundly affected her own. Associated with him in his office and home in Dublin Castle, she left her native Ireland never to return, and for the last 22 years found distraction and solace in Italy, devoting to fine art, particularly painting, such time as she could spare from the self-imposed duties of the hospital. In water-colours she reproduced the chef-d'œuvres of the old masters with a fidelity and power that attracted many artists, Italian and others, to the studio, while her salon was the congenial resort not only of these but of other guests distinguished in science, literature, and affairs.

A niece of Cardinal Wiseman, and sharing much of his conversational charm in four languages, she drew around her all that was most distinguished in Florentine society, resident or migratory, enlisting their sympathies, moreover, in her numerous charities, among which was her relief work in behalf of the survivors of the Siculo-Calabrian cataclysm. This, the last of her more conspicuous efforts in the philanthropic sphere, told heavily on a constitution naturally strong and elastic, but impaired by profound if nobly suppressed grief and by strenuous devotion to the religious life; and so the malady, which she had long struggled against in secret, after months of suffering at last prevailed. Her funeral was attended by numbers of the Florentine poor, for whom her grave at San Miniato, where, beside her artist brother Augustus, she sleeps under a Celtic cross of her own designing, will long be a "point of pious pilgrimage."

Small-pox in Italy.

The Association for Promoting the Influx of the Outlying World into Italy will do well to use its undoubted influence with the central authorities so as to mitigate, if not remove, one at least of the far too numerous deterrents to the "influx" in question—to wit, the steady spread of small-pox throughout the kingdom. The correspondence columns of THE LANCET have drawn attention to the epidemics of the disease at Parma, at various points on the Milan-Domodossolo line, and more recently at Salerno-all these, be it noted, occurring within a few weeks of each other and all of them implying culpable negligence in vaccination. But as if the admonition were unavailing, one of the leading journals of Italy, the Secolo, alarms its readers this morning with the announcement of "Smallpox at the Gates of Milan," and proceeds to give authentic details of the number of cases, the number of deaths, and the frantic efforts, promoted from the Lombard capital, to undo the disastrous results of communal "trascuranza" (negligence), first, in prevention, and second, in treatment. Take, for instance, the following typical specimen of the modus operandi (or rather the modus negligandi!) brought home to the "bureaucratic authorities" within less than four miles of the most prosperous of Italian cities. At that distance from Milan there is the township of Turro, which, two years ago, numbered 593 souls, and which has recently added to its population-mainly by fugitives from Milan unable to meet the cost of house rent and food—some 10,000 more, huddled together in old, or insufficient new, tenements, and living under conditions compatible only with misery and disease. Two years ago the school counted 50 pupils, now there are 700, without proportionate addition to the accommodation—a state of things, perhaps, intelligible when, according to the Secolo,

the finances of the commune are verging on bankruptcy, with a debt of some 20,000 francs and with only some hundreds in the cassa to meet it. Add to this that Turro is the refuge of the malandrini (malefactors) who have made Milan too hot to hold them-"undesirables' import not only vice and crime, but actual disease, living as they do beyond the pale of law and administrative surveillance. Small-pox in such a population will spread in proportion as vaccination has been either neglected altogether or perfunctorily applied. Nor is Turro the only neighbour from which the Lombard capital is threatened. Lodi and its vicinity-according to the Secolo-are also suffering from the same visitant. Here, again, as at Turro, the efforts at isolation, disinfection, and revaccination are put forth with febrile energy, in tardy replacement of the measures which, taken in time and with due care, would have kept the disease at bay. All this is unpleasant reading for the Italian and the non-Italian world alike—spelling for the former the loss of that "foreign import" (as it terms the "paying guest" from abroad) to which it owes one-third of its revenue; and for the latter the loss of that sojourn in the winter and the spring season to which it looks for health and vigour during the remainder of the year. The winter now upon us is one, which from various causes, can ill brook the gratuitous deterrent of small-pox. The "arrivals," hitherto, have been below the average in all the chief towns of Italy a fact for which the General Election shortly to be held in the British Isles is partly responsible. Other causes are mentioned as conducing to the same "falling off"-anticipated reduction of income and the prospect of enforced economies, ascribed (rightly or wrongly) to recent fiscal legislation, being among them. The situation, indeed, is one which Italy, in her own interests, cannot ignore, fraught as it is with loss to her from within and from without, and only to be retrieved, on her part, by systematic and steady enforcement of her "Codice Igienico," which, admirable as it is "on paper," has hitherto been but sparingly utilised in practice. Dec. 6th.

VIENNA. (FROM OUR OWN CORRESPONDENT.)

The Annual Meeting of the Austrian Medical Councils.

THE continual difficulties which the medical profession has to encounter in this country in regard to its organisation and the furtherance of its lawful requirements have led the Aerztekammern, or Medical Councils, composed of the representatives of the profession in all parts of the country, to hold an annual meeting for the discussion of important questions. Such an annual meeting is called the Aerztekammertag, and the one for the present year was held at Vienna during two days in the end of November. One of the subjects was that of insurance against various risks. A company for insurance against accidents and also for life insurance has been called into existence by medical men, and a special point of this company will be insurance against charges of malpractice. Claims against medical men on the ground of malpractice have increased to such a degree as to become a serious danger, for although nearly all the cases brought into court are dismissed, the expenses incurred by practitioners in their defence are nevertheless very heavy. Much time was devoted to the discussion of the proposed Socialversicherung (general insurance against sickness) by the Government. As the friendly societies and the obligatory sick-clubs try to obtain as many members as possible, claiming eligibility for all persons who earn their living by employment, only patients who are of independent means would be left for private practitioners. In this country the majority of medical men would be ruined if this view were adopted by the Legislature. This proposed insurance against sickness is embodied in a Bill promoted by the Government and is intended to relieve the working-class in times of difficulty, especially during illness of the bread-winner. Now the political parties and also the section of the population mostly concerned have proposed that every person earning less than 4800 kronen (£200) a year shall come within the scope of the law-i.e., should

attendance and daily sick-pay, the medical officers being appointed by the clubs. These provident institutions are very beneficial to their members, but, on the other hand, they have a disastrous effect on medical practice, because for a salary varying from £100 to £200 a year, and never exceeding the latter amount, the medical officer of the Kassa has to attend at least 1000, but more generally from 3000 to 5000 persons all the year round. In these circumstances, private practice in the ordinary sense is hardly possible. The medical profession, on the other hand, wishes to limit the income which carries with it compulsory membership of a Kassa to 2400 kronen (£100) a year. The statistics compiled by the Surveyor of Taxes for 1907 show that in Vienna alone there were 73,000 wage-earners who had returned their annual incomes as being between 2400 and 4800 kronen. If this Bill becomes law these persons and their families would be lost as possible private patients for the general practitioners who did not happen to hold club appointments. On the other hand, it is impossible in Austria to bring about an organisation of medical men which would be in a position to dictate terms to the Krankenkassen. In the discussion it was shown that in this country there are about 2000 medical men which the state of the country that is the state of the sta medical men who are not earning enough to live upon, and they would be the first to suffer if the Bill should be passed, as then their income would be cut off entirely. Another point much discussed was the Bill dealing with a modification of the existing Health Act. A resolution was passed in which the meeting expressed strong disapproval of the modification, because it was drafted without asking the opinion of the Aerztekammern, and was, moreover, inconsistent with the interests of the medical profession. The chief points of controversy were the definition of the posi-tion of the practitioner relatively to the officer of health, payment for notification of infectious diseases, the method of taxing medical incomes, and the right of private practice by holders of State appointments. The law dealing with quackery was also an item on the programme of the discussion. In Austria the law is not satisfactory on this point, and "nature-healing" is in great favour among certain classes of the population. The following resolution was adopted by the meeting and recommended to the Ministry of Justice as suitable for a satisfactory basis:

Whosoever undertakes, without possessing a regular Austrian diploma of M.D. or a recognised equivalent diploma of a foreign university, the medical treatment of any person or persons with or without payment or fee shall be guilty of a breach of the law. Nevertheless, when an imminent danger is threatening the life of the affected person, a non-qualified person may interfere in a medical sense. The punishment of such a breach of the law shall not be less than one month and not more than three months' imprisonment for each offence.

The position of the practitioner towards his patient was also a subject of discussion. The existing law does not provide any special privilege or immunity for a medical man in reference to any particular form of treatment. a short time ago operative interference was regarded as quite justifiable if the practitioner thought it necessary, but in several recent instances the Chief Court of Austria has decided that an operation, or an extension of an operation, performed without the special (and perhaps even the written) consent of the patient may form the basis of a claim for damages against the surgeon. In certain circumstances the law requires a medical man to break some statute, such, for instance, as that relative to professional secrecy. An example of this kind was mentioned in this column on June 19th. The meeting decided to present a petition to Parliament praying that the Bill may be modified so that legitimate professional work shall not bring a practitioner into conflict with the law. Some important questions were raised in connexion with the title of specialists. A movement is on foot in this country to regulate the assumption of medical titles and to permit only actual holders of university titles to use them in their scientific publications and on their door-plates. On the same principle, consulting physicians. privat-docenten, and professors would be required to confine themselves to consulting practice, and no practitioner would call himself or allow himself to be called a specialist unless he practised only in his special branch and could prove that he has had special training in this branch for at least a year at a recognised clinic or hospital. Local requirements should be considered in the instances where a combination of two or more special branches of medical practice in one practitioner were necessary. Naturally, there was a certain amount of opposition

manifested against all these proposals, especially against the last-named one; but still, the proceedings of the Aerztekammertag showed that much good work could and would be done by these meetings; and already the power of this organisation of medical corporations is making itself felt by the newspapers which champion the cause of the Krankenkassa, for the medical profession in general is obviously dissatisfied with the salaries and other conditions offered by the sick-clubs.

Dec. 13th.

Gbituary.

WILLIAM BRAMWELL RANSOM, M.A. CANTAB., M.D., B.Sc. Lond., F.R.C.P. Lond.,

SENIOR PHYSICIAN TO THE NOTTINGHAM GENERAL HOSPITAL;
PHYSICIAN TO THE SHERWOOD FOREST SANATORIUM
FOR CONSUMPTION, ETC.

THE name of Ransom, held by father and son, is not only a household word in Nottingham, but is widely known in the medical world outside that city. Dr. William Bramwell Ransom, the subject of this memoir, commenced practice in the city of his birth in 1890, and shortly afterwards was appointed physician to the Nottingham General Hospital on the resignation of his father. Only two and a half years have elapsed since Dr. W. H. Ransom, F.R.S., passed away full of years and honours, and now on Dec. 9th his no less gifted son has been called from his unfinished work at the untimely age of 48 years, deeply mourned by a large circle of friends and patients.

Educated in the most liberal manner for the high calling he was destined to pursue, Dr. Ransom already manifested in his boyhood and as a scholar at Cheltenham College those gifts, so conspicuous in after life, which education can but foster and cannot create. From Cheltenham at the age of 17 he went as a student, as his father had done before him, to University College, London. In 1882, being now 21, he headed the list in physiology honours at the Final B.Sc. Lond., carrying off the University scholarship and medal. He had already in 1880 entered at Trinity College, Cambridge, and in 1883 graduated as a B.A., taking first-class honours in the natural science tripos. On account of his great interest in physiology he was sent by the University to do original work at the Zoological Station at Naples, and at a similar institution at Roscoff in Brittany. As a result of this work he published articles on "The Cardiac Rhythm of Invertebrata," "The Influence of Glycerine on the Liver" (Journal of Physiology, Vols. V. and VII.), "The Spinal and Visceral Nerves of Cyclostomata," and other papers well known to physiologists.

In 1886 he was elected Fellow of Trinity College, Cambridge, among the highest distinctions to be obtained at the University of Cambridge, and certainly one of the most difficult to get. Having returned to University College, London, to study medicine, he gained two Fellowes medals for clinical medicine, the Liston medal for pathology, and graduated M.B. Lond. in 1888. After a year's post-graduate study in London, Vienna, and Halle, he took the M.D. in 1889. In the following year he became a Member of the Royal College of Physicians of London, and the same College recognised his excellent abilities by electing him to the Fellowship in 1898. No sooner had Ransom settled in Nottingham than it was felt, not only among the medical profession, but by everyone with whom he came in contact, that a new power had arisen in the place. On the boards of charities and other committees he at once showed an insight into difficult problems which astonished men of more years Whenever he spoke he was attentively and experience. listened to, and his weighty words were always delivered with grace and ease of style, and not without drawing upon a fund of real humour. In these circumstances it cannot be wondered at that his consultant practice in the city and county spread rapidly. He early recognised that purely medical practices could not be expected to be as large as formerly, on account of the ever-increasing developments of surgery and of specialism, but his own limitations were wide, for he was always an exceedingly busy and even an over-worked man. He was popular alike with patients and practitioners; to the former he was invariably kind and sympathetic, and to the latter courteous and very

His admirable memory and reasoning powers sometimes made the diagnosis of a case which had appeared difficult to others a matter of instinct, yet he had none of the arrogance of intellect. He must have seen something of the mistakes of others, yet he never did or said anything calculated to disturb the relations of doctor and patient. "I never wish to meet a nicer or a fairer man in consultation "-this is not a mere commonplace of nil nisi honum type, but has been said of Ransom scores of times during his life.

Shortly after he commenced practice Dr. Koch announced the discovery of tuberculin. Ransom's untiring energy was shown by his making a special journey to Berlin to obtain at first hand a supply of the new specific. Its effects were afterwards demonstrated to the medical profession in the wards of the General Hospital by himself and his colleagues. For 17 years, until finally struck down by illness, he was the constant and devoted servant of that institution. For years he spent the whole of his Sunday mornings in the wards, besides numerous visits on week-days. Add to this five or more long hours for out-patients on Friday afternoons, and some conception can be formed of the work he forced himself to do, instead of allowing some space for rest and recreation. He never had a strong physique, and the enormous amount which he got through was a continual triumph of mind over matter. He was not only keen in acquiring but generous in imparting knowledge. On those Sunday morning visits he was frequently accompanied by a small but earnest band of men to whom he expounded his science with ungrudging patience, while for years he lectured to nurses with an earnestness which others keep for academic addresses. No matter what the occasion, he always gave of his best—Nit tetigit quod non ornavit. His relations with his honorary colleagues and with the resident medical and nursing staffs were always of the most cordial description. In addition to the General Hospital he was also a member of the honorary staff of the Nottingham and Notts Convalescent Homes, to which institution he rendered valuable service by advising on medical, hygienic, and administrative matters.

In 1892, when the British Medical Association met in Nottingham, W. B. Ransom was secretary of the Section of Medicine, his father being President. He also took part in the Leicester meeting in 1905. The British Association for the Advancement of Science met in Nottingham in 1893, Ransom being one of the secretaries. He was a governor of the Nottingham High School and a member of the council of the Nottingham University College. He was President of the Nottingham Medico-Chirurgical Society during the session 1896-97, and on that occasion delivered a masterly address on "Immunity to Disease," which was published in full in THE LANCET. He was a frequent contributor of valuable clinical and pathological material to this society. Year after year he delivered set addresses, and however long these might be he possessed the happy art of keeping his audience interested to the end. No matter what the subject—"Should Milk be Boiled?"; "The Prevention of Tuberculosis"; "Pernicious Anæmia"; "Experiments on Animals"; "Infantilism"; "Modern Views on the Nervous System"; and many more—all were treated in the same exhaustive manner, it being a wonder to all how he obtained his knowledge. When he opened a discussion on Diet on Dec. 5th, 1906, there seemed to be no diminution in the familiar energy of manner or depth and facility of treatment. Yet that was the last occasion on which his voice was to be heard within the four walls so often the silent witnesses of his eloquence.

Ransom threw-himself heart and soul into the question of the open-air treatment of phthisis, which began to be strongly advocated in Great Britain about the year 1898. By his untiring labours and great enthusiasm a society for the prevention of consumption was formed. A lasting monument to those labours remains in the form of the Sherwood Forest Sanatorium. By his own generous and self-sacrificing efforts a building fund of over £5000 was collected, a site having been provided by the munificence of the Duke of Portland. It is no easy matter in these days to start a new medical charity, and it is not too much to say that this sanatorium owes its existence to the unstinted efforts of Ransom in arousing the necessary enthusiasm. He possessed a unique combination of gifts which alone could make such an

patients, all of the poorer class. This beneficent work has been brought within reach of an ever increasing number of patients, 32 of whom are now accommodated in the sanatorium.

Ransom contributed a number of articles to medical literature, many being of permanent value, in addition to those already referred to. Among these the following may be mentioned: "A Case of Actinomycosis" (Transactions of the Royal Medical and Chirurgical Society, 1892); "Some Cases of Cerebral Disease" (THE LANCET, 1893); "A Case of Actinomycosis of the Orbit, with a Summary of Seven Other Cases of Actinomycosis" (British Medical Journal, 1896); "A Case of 'Intestinal Sand'" (Quarterly Medical Journai, 1892); "Two Cases of Acromegaly" (British Medical Journal, 1895); "Immunity to Disease" (THE LANCET, 1896); "Case of Tumour of the Spinal Dura Mater" (British Medical Journal, 1894); "Syringomyelia" (Journal of Pathology, Vol. XI.); "A Case illustrating Kinæsthesis" (Brain, 1892); "Tumours of the Corpus Callosum" (Brain, 1895); "Phthisis in Relation to Life Insurance" (1900); "The Medical Man as Expert" (THE LANCET, 1905); "Plumbish from Investions of Disabellar as Expert" (Gibb. from Ingestion of Diachylon as an Abortifacient" (with Dr. Arthur Hall, THE LANCET, 1906); "The Vis Medicatrix (presidential address, Nottingham Naturalists' This is by no means a complete list of his Society). published writings, but it will serve to illustrate his indefatigable industry and the wide range and many-sided interest of his observations. By a strange irony of fate Dr. Ransom fell a victim to the disease—consumption which he had done so much to relieve. During the later years of his life he contracted several severe attacks of influenza. Definite symptoms of phthisis showed themselves in the summer of 1907 and the disease proved fatal about two and a quarter years later.

He married in 1898 a daughter of Mr. George Fowler of Basford Hall. She and their three children survive him.

Dr. Henry Head writes: "I first knew William Bramwell Ransom in the year 1880 when we entered together at Trinity College, Cambridge. He had already received a considerable scientific training at University College, London, where he attended Professor Lankester's lectures. He was intensely enthusiastic for both comparative anatomy and physiology, and at the end of his first year became a major scholar of his college. After taking his degree with first-class honours in the second part of the Natural Science Tripos (1883), he went to Naples and worked at the action of the heart in the cuttle-fish and other allied animals. On this work he obtained a Fellowship at Trinity College, and then entered strenuously on his medical studies at University College Hospital. Here he held all the ordinary junior appointments and was house physician to Dr. Ringer. He returned to Nottingham about the year 1890, and the rest of his career is better known to others than to me. In his earlier days he was always known to us for his vivacity and for the agility of his intellect. In our debates, whether in the laboratory, the hospital, or the natural science club, he was distinguished for the extraordinary accuracy of his knowledge over an unusually wide range. He had been brought up in an atmosphere of natural history and had been taught by his father to observe the phenomena of nature. To this had been added a superb zoological training which gave him an unusually wide range for so young a man. His power of interesting himself in new medical subjects was the outcome of his agile mind, and I know no man who could put forward so luminous and accurate an account of some recent advance in medicine in which he had interested himself. Unfortunately the last years of his life were haunted by perpetual ill-health which lowered his vitality and made the work that he had previously loved a heavy tax on his failing strength."

GEORGE FREDERICK BERGIN, M.B. LOND., L.R.C.P. LOND., M.R.C.S. ENG.

Dr. G. F. Bergin, who died at his residence, 1, York Buildings, Clifton, on Dec. 7th, in his forty-fifth year, was the eldest son of Mr. G. F. Bergin, the honorary director of Müller's He received his medical education Orphanages, Bristol. at the Bristol Medical School, where he obtained the Martyn and also the Sanders Scholarships. Dr. Bergin also studied at Guy's Hospital. Hequalified L.R. C. P. Lond, and M.R.C.S. Eng. in 1889, and graduated M.B. of the University of London in 1893. After holding some resident appointments at the effort successful. The sanatorium was opened for 14 Bristol General Hospital Dr. Bergin decided to go to China as a medical missionary. He contracted malarial fever there, and, Bright's disease following, his health was completely broken, and he returned home about ten years ago. Dr. Bergin was afterwards strong enough to take part in the work at Müller's Orphanages, and his tact and judgment were most useful in the management of this large institution. Dr. Bergin was highly respected and his early death is much regretted. The funeral, which took place on Dec. 10th at Arno's Vale Cemetery, Bristol, was very largely attended.

MARK FARRANT, L.R.C.P. LOND., M.R.C.S. ENG., D.P.H.

Mr. Mark Farrant died at his residence in Exeter on Nov. 28th in his thirty-ninth year. He received his medical education at the Westminster Hospital, and qualified L.R.C.P. Lond. and M.R.C.S. Eng. in 1893. Mr. Farrant joined his uncle in practice at Exeter, and in 1896 was elected medical officer of health for the St. Thomas rural district. Mr. Farrant was also medical officer and public vaccinator for the St. Thomas district of the St. Thomas (Exeter) board of guardians, but had resigned his appointments some months ago owing to failing health. He was very popular in Exeter and took a great deal of interest in the political life of the "ever faithful city.'

ROYAL SOCIETY OF MEDICINE: A SPECIAL MEETING OF THE FELLOWS; THE ANNUAL DINNER.

A LARGELY attended meeting of the Fellows of the Royal Society of Medicine was held at Hanover-square on Dec. 15th to discuss an important scheme which had been brought forward by the Council of the Society, on the recommendation of the House and Finance Committee, with the object of raising £60,000 to enable the society to build a new home for itself. The particular scheme put forward was rejected by a large majority, but the result of the meeting was to show an absolute consensus of opinion that the Royal Society of Medicine was inadequately housed and ought to take steps at an early date to remedy the position. Although the meeting rejected the scheme put forward by the House and Finance Committee, the pains at which that committee had been to arrive at a solution of some great practical difficulties were recognised, and the thanks of the society were expressed to them, and especially to Dr. Arthur Latham for the very large amount of time and trouble expended in considering the matter.

The annual dinner of the society was held in the evening at the Hotel Cecil, Strand, Sir William Church, President of the Society, being in the chair. Nearly 200 sat down, and the guests included Lord Strathcona; Sir Archibald Geikie, President of the Royal Society; Sir R. Douglas Powell, President of the Royal College of Physicians of London; Mr. Butlin, President of the Royal College of Surgeons of England; Dr. James Porter, Medical Director-General of the Naval Medical Service; Lieutenant-Colonel Sir Arthur Keogh, retired Director-General of the Army Medical Staff; Dr. P. W. Latham; Mr. A. W. Aston, Master of the Skinners' Company; General Sir Lionel Spencer; Dr. Macnaughton Jones; Dr. Samuel West, President of the Medical Society of London; and Dr. Squire Sprigge, Editor of THE LANCET.

The toast of "The Royal Society of Medicine" was given by Sir Archibald Geikie, who in sympathetic terms congratulated the Society on its success in gathering together so many different constituents under one roof, and admitted that the time might soon come when the Royal Society itself would have to adopt some such amalgamation scheme.

Sir WILLIAM CHURCH, in replying, referred to the scientific work of the society during the year as being eminently satisfactory, the discussion on Heredity held having been especially important. The library had been attended by 8564 readers during the year, and nearly 8000 books had been borrowed from the library. The society now numbered 2328 Fellows and 991 Members. The expenses of publication were very great, however, and he suggested that the reports of the proceedings of the society might often be curtailed with advantage.

Dr. NORMAN MOORE proposed the health of the guests "in historical sequence," alluding in a speech full of bright

and happy allusions first to Lord Strathcona's position as a Privy Councillor, or member of the Magnum Concilium which existed before Kings, Lords, or Commons were instituted; next to Mr. Aston, as representative of the ancient City of London; next to Dr. James Porter and Sir Alfred Keogh, representing services that had their origin before the days of the Normans, "when most things seem to have begun"; and then to the Royal Colleges; and to THE LANCET, concerning the breadth of whose interests he told a flattering story.

Mr. Butlin, in responding, said he hoped that the Royal Society of Medicine would have a home worthy of its great position to show to the distinguished strangers who will visit London at the next International Congress of Medicine.

After Sir RICHARD DOUGLAS POWELL had proposed the toast of "The Chairman," Sir WILLIAM CHURCH, in reply, said that already a building fund had been started.

Medical Rews.

ROYAL COLLEGE OF SURGEONS OF ENGLAND .-At the Final Examination for the Fellowship in Surgery, Surgical Anatomy, and Pathology, held on Nov. 22nd, 25th, 26th, 27th, 29th, and 30th, 1909, 72 candidates presented themselves, of whom 30 were approved and 42 were rejected. Among the successful candidates were two gentlemen (John Henry Farbstein, M.B., B.S. Lond., L.R.C.P., M.R.C.S., University College Hospital, and Shamrao Ramrao Moolgaokar, L.R.C.P., M.R.C.S, Bombay University and King's College Hospital) who have not yet attained the requisite age of 25 years. The Council accordingly conferred the Diploma of Fellow upon the 28 gentlemen mentioned below. who have complied with the necessary by-laws:

Diploma of Fellow upon the 28 gentlemen mentioned below, who have complied with the necessary by-laws:—

John William Geary Grant, L.R.C.P., M.R.C.S., St. Thomas's Hospital: David Leighton Davies, M.D., M.S. Lond., L.R.C.P., M.R.C.S., University College Hospital; Hugh BernardWilloughby Smith, M.B. Lond., L.R.C.P., M.R.C.S., London Hospital; William Square Edmond, L.R.C.P., M.R.C.S., St. Bartholomew's Hospital; Walter Goldle Howarth, M.B., B.C. Cantab., L.R.C.P., M.R.C.S., Cambridge University and St. Thomas's Hospital; Arthur Donald Griffith, M.B., B.S. Lond., L.R.C.P., M.R.C.S., King's College Hospital; Francis Rudolph Hotop, M.B., B.Ch. New Zealand, L.R.C.P., M.R.C.S., New Zealand University and King's College Hospital; Arthur Sydney Blundell Bankart, B.C. Cantab., L.R.C.P., M.R.C.S., Cambridge University and St. Bartholomew's Hospital; Henry Sessions Souttar, M.A., M.B., B.S. Lond., L.R.C.P., M.R.C.S., Cambridge University and St. Bartholomew's Hospital; Henry Sessions Souttar, M.A., M.B., B.Ch. Oxon, L.R.C.P., M.R.C.S., Cambridge University and St. Thomas's Hospital; Walter Rowley Bristow, M.B., B.S. Lond., L.R.C.P., M.R.C.S., Cambridge University and St. Thomas's Hospital; Walter Rowley Bristow, M.B., B.S. Lond., L.R.C.P., M.R.C.S., St. Thomas's Hospital; Rustom Nusserwan Coorlawala, L.M. & S. Hyderabad, D.P.H. Cantab., L.R.C.P., M.R.C.S., University College Hospital; Ardeshir Pestonji Bacha, L.M. & S. Bombay, M.B., B.S. Lond., L.R.C.P., M.R.C.S., University College Hospital; Ardeshir Pestonji Bacha, L.M. & S. Bombay, M.B., B.S. Lond., L.R.C.P., M.R.C.S., Bombay University and University College Hospital; Rustom Manchersha Dhanjibhai Dorabji Gilder, M.B., B.S. Lond., L.R.C.P., M.R.C.S., Bombay University and London Hospital; Wilfrid Warwick Treves, B.A., B.C. Cantab., L.R.C.P., M.R.C.S., Bombay University and London Hospital; Alfred Gough, M.B., Ch.B. Glasg., Glasgow University and London Hospital; Hubert Gordon Thompson. M.D., Ch. B. Liverp., Liverpool University and London Hospital; Hubert Gordon Thompso

Licences to practise dentistry were also conferred upon the following 36 gentlemen, who have passed the necessary examinations and complied with the by-laws:

xaminations and complied with the by-laws:

Richard Guy Ash, Charing Cross and Royal Dental Hospitals; Reginald John Bailey, Middlesex and Royal Dental Hospitals; Guy Capper Birt, St. Thomas's and Royal Dental Hospitals; Charles Rrnest Blows, Charing Cross and Royal Dental Hospitals; Cecil Hastings Bradnam, Guy's Hospital; Harry Fielden Briggs, M.D. L.A.H., L.D.S. Glasgow, D.D.S. Michigan, Michigan and Bristol Universities: Charles Rdward Brown, Liverpool University; Frank Bocquet Bull, Guy's Hospital; Eric Horsfall Chesters, Birmingham University; Leonard Dinnis, Charing Cross and Royal Dental Hospitals; Lionel David Frühauf, Charing Cross and Royal Dental Hospitals; Lionel David Frühauf, Charing Cross and Royal Dental Hospitals; John Daniel George, Guy's Hospital; Bernard Goldsmith, Middlesex

and National Dental Hospitals; Arthur Rusby Hawksley, Liverpool University; George Theodore Douglas Hughes, Liverpool University; Percy Stanley Humm, Guy's Hospital; Leonard John Kemp, Guy's Hospital; William Caffyn Miller, Guy's Hospital; Cecil Graves Morris, Guy's Hospital; Walter Cecil Murray, Charing Cross and Royal Dental Hospitals; James Ormrod, Liverpool University; Percy Hills Orton, Guy's Hospital; Alfred Bunce Plank, Liverpool University; John Morley Pomeroy, Guy's Hospital; Reginald Wood Powell, Guy's Hospital; Arthur Pusey, Middlesex and National Dental Hospitals; George Hubert Walter Randell, Middlesex and National Dental Hospitals; John Roberts, Guy's Hospital; Bertram Charles Salter, Charing Cross and Royal Dental Hospitals; John Henry Skerritt, Sneffield University; Theodore Victor Smith, D.D.S. Penn., Pennsylvania University and Charing Cross Hospital; Stanley Runton Storey, Charing Cross and Royal Dental Hospitals; Norman Healea Swallow, Manchester University; Herbert Thornton, Guy's Hospital; and Henry Alfred Woodhouse, M.A. Oxon., Middlesex and Royal Dental Hospitals.

University of Oxford.—The following candidates have been approved in the undermentioned examinations :-

FIRST B.M. EXAMINATION.

FIRST B.M. EXAMINATION.

Organic Chemistry.—H. E. A. Boldero, Trinity College; C. H. Carlton, St. John's College; F. B. Chavasse and W. T. Collier, Balliol College; L. M. Davies, Lincoln College; J. C. Dixey, Brasenose College; K. M. Dyott, non-collegiate; V. T. Ellwood, Pembroke College; L. Gameson, Queen's College; O. H. Gotch, New College; W. J. Hart, B.A., Queen's College; J. W. Horan, Brasenose College; M. R. Lawrence, B.A., St. John's College; P. A. Martin, New College; T. S. Nelson, University College; A. L. Pearce-Gould, B.A., Christ Church; E. Scott, B.A., St. John's College; G. P. Selby, New College; N. A. Sprott, Christ Church; and C. P. Symonds, New College; N. A. Sprott, Christ Church; and C. P. Symonds, New College; A. Booth, B.A., Keble College; A. Jackson, Queen's College; A. Booth, B.A., Keble College; A. Jackson, Queen's College; H. M. Pope, B.A., Lincoln College; M. O. Raven, Trinity College; and J. Sainsbury, Oriel College.

Second B.M. Examination.

SECOND B.M. EXAMINATION.

SECOND B.M. EXAMINATION.

Pathology.—G. E. Downs, B.A., Magdalen College; A. D. Gardner, B.A., University College; G. W. Johnson, B.A., Brasenose College; C. Newcomb, B.A., St. John's College; E. L. Pearce-Gould, B.A., Christ Church; and A. F. S. Sladden, B.A., Jesus College.

Forensic Medicine and Public Health.—R. F. Bridges, B.A., University College; G. H. Hunt, B.A., Christ Church; S. F. Moore, B.A., Trintty College; H. P. Newsholme, B.A., Balliol College; and A. F. S. Sladden, B.A., Jesus College.

Medicine, Nurgery, Midnifery.—F. J. Aldridge, B.A., Magdalen College; H. G. Butterfield, B.A., Wadham College; G. H. Cross, B.A., Balliol College; D. C. Dobell, B.A., Christ Church; G. J.Z. Jessel, B.A., University College; S. F. Moore, B.A., Trinity College; C. Newcomb, B.A., St. John's College; and H. P. Newsholme, B.A., Balliol College.

MEDICAL CONGRESS.—An AMERICAN International Congress of Medicine and Hygiene is arranged to be held at Buenos Ayres in 1910. The opening day is May 25th.

Dr. Mosny has been elected a member of the Academy of Medicine of Paris. The candidates who were placed second and third on the list, but a long way behind Dr. Mosny, were M. Lemoine and M. Vallon.

THE SEWERAGE OF OKEHAMPTON (DEVON).—A Local Government inquiry was held last week at Okehampton in reference to the application of the local town council for sanction to borrow £4300 for sewerage and sewage disposal works.

PLAGUE IN INDIA.—In all India during the week ending Nov. 6th there were 5725 cases of plague, resulting in 4479 deaths. The deaths in the provinces were as follows: Bombay, 850; Madras, 104; Bengal, 89; United Provinces, 918; Punjab, 697; Burma, 19; and Central Provinces, 950. The mortality in the preceding week was 3456.

SANITARY INSPECTORS UNDER PUBLIC HEALTH (LONDON) ACT, 1891.—Examinations recognised by the Local Government Board under the above Act will be held at the Examination Hall, Victoria Embankment, London, W.C., commencing Tuesday, Jan. 18th, 1910. For particulars application should be make to the Honorary Secretary, The Sanitary Inspectors Examination Board, 1, Adelaide Buildings, London Bridge, London, E.C.

University of Cambridge.—The special board for biology and geology has appointed Mr. A. E. Shipley, M.A., Christ's, to be a manager of the Balfour Fund. The general board of studies has appointed Mr. J. E. Purvis, M.A., St. John's, to be University Lecture in Chemistry and Physics in their application to Hygiene and Preventive Medicine for five years. This appointment has been confirmed by the special board for medicine.

BOOKS, ETC., RECEIVED.

ENGELMANN, WILHELM, Leipzig.

Ther die Palliativtrepanation bei Stauungspapille. Von Eugen von Hippel. Price M.3.40.
Nach Diagnosen geordnetes Register für Augenärzte. Von Dr. med. Georg Hirsch. Mit einem Vorwort von Prof. Dr. A. Bielschowsky (in German, French, and English languages). Price W 7

FISCHER, GUSTAV, Jena.

Die Cholelithiasis. Von L. Aschoff und A. Bacmeister. Price M.20.

Pathologie und Therapie der Gonorrhoe. In Vorlesungen. Ein Lehrbuch für Aerzte und Studierende. Von Dr. W. Scholtz. Zweite erweiterte und umgearbeitete Auflage. Price, paper, M.4.50; bound, M.5.50.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.

Oxford Medical Publications. Constipation and Allied Intestinal Disorders. By Arthur F. Hertz, M.A., M.D. Oxon., M.R.C.P. Price 10s. 6d. net.

HIRSCHWALD, AUGUST, Berlin.

Compendium der Operationslehre. Von Dr. Eduard Sonnenburg und Dr. Richard Mühaam. Zweite Auflage. Price M.9. Internationale Beiträge zur Pathologie und Therapie der Ernäh-rungsstörungen, Stoffwechsel- und Verdauungskrankheiten. Redaktion: A. Bickel, Berlin. Erster Band. Erstes Heft. Aus-gegeben am 16, November, 1909. Price M.3.

KARGER, S., Berlin.

Anleitung zur Diagnostik der Abdominaltumoren unter Zugrundlegung der Palpation. Eine klinische Erläuterung zur Palpation
des Abdomens. Von Prof. Dr. G. L. Sacconaghi. Nach der italienischen, vom Autor verbesserten Ausgabe übersetzt von Dr. V.
Plitek. Mit einem Vorwort von Professor Dr. C. v. Noorden.
Price, paper, M.12; bound, M.13.60.
Die Krankheiten der Nase und des Nasenrachens, mit besonderer
Berucksichtigung der rhinologischen Propädeutik. Von Dr. Carl
Zarniko. Dritte, neu bearbeitete Auflage. Price, paper, M.18.;
bound, M.19.60.

Zarniko. Dritte, neu bearbeitete Auflage. Price, paper, M.18.; bound, M.19.60.
Die Epilepsie im Kindesalter, mit besonderer Berücksichtigung, erzieherischer, unterrichtlicher und forensischer Fragen. Dargestellt von Professor Dr. med. Heinrich Vogt. Price, paper, M.5.; bound, M.6.20.

Jahrbuch für Kinderheilkunde und Physische Erziehung. Unter Reisktion von O. Heubner, A. Steffen, und Th. Escherich. 70, der dritten Folge 20, Band. Heft 6. Ausgegeben am 2. Dezember, 1909. Price not stated.

KLINKHARDT, Dr. WERNER, Leipzig.

Jahresbericht über die Fortschritte der Inneren Me lizin im in- und Auslande. Redaktion: Dr. Schreiber und Dr. Rigler. Bericht über die Jahre 1902 und 1903. II. Band. Price M.30. Bericht über das Jahr, 1908. II. Band. Price M.20. Die Pathologie und Therapie der Lepra. Von Wilhelm Ebstein, Dr. und o.6. Professor der Medizin. Price, paper, M.3.50; bound, M.4.20.

LAURIE, T. WERNER, London.

The Cathedrals and Churches of Belgium. By T. Francis Bumpus. Price 6s. net.

SIMPKIN, MARSHALL, HAMILTON, KENT, AND Co., LIMITED, London. Social Disease and its Prevention. By H. N. Robson, M.R.C.S. Eng., L.R.C.P. Lond. Second edition. Price 3s. 6d. net.

THIEME, GEORG, Leipzig.

Die Gonorrhoe des Mannes und ihre Komplikationen. Von San-Rat. Dr. Hans Wossidlo. Zweite umgearbeitete Auflage.
Price M.12.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. (SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, LONDON.) (WOOD, WILLIAM, AND CO., New York).

Urgent Surgery. By Félix Lejars, Professeur Agrégé à la Faculté de Médecine de Paris. Translated from the Sixth French Edition by William S. Dickie, F.R.C.S. Vol. I. Introductory—Head—Neck—Chest—Spine—Abdomen. Price 25s. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication

AHERN, RICHARD, M.B., B.S. R.U.I., D.P.H. Camb., has been appointed Resident Medical Superintendent of the Cork County and City Sanatorium.

ARCHER, T. C. R., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Eye Department at St. Thomas's Hospital. BENTLEY, A. J. M., M.D., C.M. Edin., has been appointed Lecturer in Tropical Diseases in the University of Manchester.

CHILD, W. N., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Lecture in the County of Manchester.

CHILD, W. N., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Surgical Children's Department at St. Thomas's Hospital.
 CHOLMELEY, M. A., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Assistant Medical Officer to the Royal Cornwall Infirmary.
 COLDICUTT, CLAUDE E. A., M.D. Edin., has been appointed Assistant Medical Officer of Health of the County Borough of Leicester.
 DELISCHAIT, M. E., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Bar Department at St. Thomas's Hospital.

DESPREZ, HENRY SOULBIEU, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed District Medical Officer by the Okehampton (Devon) Board of Guardians.

RARLE, H. G., B.A. Cantab., has been appointed Joint Lecturer in Biology at Middlesex Hospital Medical School.

ENGLISH, THOMAS CRISP, M.B., F.R.C.S., has been appointed Surgeon (Non-obstetric) to Queen Charlotte's Lying-in Hospital.

FYFFE, B. L., M.B., B.S. Lond., M.R.C.S. L.R.C.P. Lond., has been appointed Senior Obstetric House Physician at St. Thomas's Hospital.

GEORGE, WILLIAM. M.B., Ch.B. Vict., has been appointed Managery.

Hospital.

GEORGE, WILLIAM, M.B., Ch.B. Vict., has been appointed Honorary Amesthetist to the Royal Lancaster Infirmary.

GRAHAM-JONES, J. L., M.R.C.S., L.R.C.P. Lond., has been appointed Junior Obstetric House Physician at St. Thomas's Hospital.

HOPWOOD, J. S., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Ear Department at St. Thomas's Hospital.

HUMPHRYS, H. E., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Skin Department at St. Thomas's Hospital.

HUMPHRYS, G. F., M.B. Aberd. has been appointed to the Skin Department at St. Thomas's Hospital.

Hospital.

HUNTER, G. F., M.B. Aberd., has been appointed Junior Assistant Physician to the Ayr District Asylum.

MCDOUGALL, M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer for the No. 2 District of Southampton.

MACINTYRE, DAVID D. F., M.B., Ch.B. Glasg., has been appointed Medical Officer to the Board of Trade at Liverpool.

MARLOYE, J. C., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Skin Department at St. Thomas's Hospital

Clinical Assistant in the Skin Department at St. Inomas's Hospital.

MAYBURY, B. C., M. R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Throat Department at St. Thomas's Hospital.

MAXWELL, R. D., M.D. Lond., F.R.C.S. Eng., has been appointed a Physician to Out-patients at Queen Charlotte's Lying-in Hospital.

MEAKIN, L., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the X-Ray Department at St. Thomas's Hospital.

MORCOM, A. F., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Throat Department at St. Thomas's Hospital.

MURRAY, CHARLES, M.A., M.D., D.P.H. Aberd., has been appointed Senior Assistant Medical Officer of Health and Schools Medical Officer for the County of Dumfriesshire.

PARKINSON, W. R., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Surgical Children's Department at St. Thomas's Hospital.

PRESCOTT, N., M.R.C.S., L.R.C.P. Lond., has been appointed Resident Medical Officer at the Guest Hospital, Dudley.

PRIDHAM, F. C., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Medical Children's Department at St. Thomas's Hospital.

Assistant in the Medical Children's Department at St. Thomas's Assistant Resident Medical Officer at the Whitechapel Union Infirmary.

ROUTH, L. M., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Medical Children's Department at St. Thomas's

Hospital.

ROWNTREE, CECIL, M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Cancer Hospital.

Salisbury, C. R., M.R.C.S., L.R.C.P. Lond., D.P.H., has been appointed Resident Medical Officer to the Central London District Schools at Hanwell.

WINK, C. S., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Mental Department at St. Thomas's Hospital.

Pacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRKENHEAD BOROUGH HOSPITAL. - Junior Resident House Surgeon. Salary £80 per annum and fees.

Brighton, Hove, And Preston Dispensary.--House Surgeon. Salary

£130 per annum, with board and residence.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—Third House Surgeon, unmarried. Salary £50 per annum, with apartments, board, and

married. Salary £50 per annum, with apartments, board, and laundry.

Bristol Royal Infirmary.—Honorary Dental Amesthetist.

Buxton, Wye House Asylum.—Assistant Medical Officer. Salary £120 per annum, all found.

Cancer Hospital, Fulham-road, S.W.—Assistant Amesthetist. Salary 25 guineas per annum.

Chartham, Kext County Asylum.—Third Assistant Medical Officer. Salary £145 per annum, with board, quarters, attendance, and washing. washing.

ELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical

washing.
CHEISEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant.

DERBYSHIRE ROYAL INFIRMARY.—Two House Surgeons, a House Physician, and an Assistant House Surgeon. Salaries of three former £100 per annum, and of latter at rate of £60 per annum, with apartments, board, &c.

DEVONDORT, ROYAL ALBERT HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum, with apartments, board, &c.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Physician. Salary at rate of £75 per annum, with board and residence.

EDMONTON UNION INFIRMARY, Bridport-road, Upper Edmonton.—
Resident Medical Superintendent. Salary £400 per annum, with unfurnished apartments, fire, light, and water.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, London, S.E.—House Surgeon for six months. Salary at rate of £60 per annum, with total, residence, and washing. Also Ten Clinical Assistants in the Out-patient Departments.

FARRINGODON GENERAL DISPENSARY AND LYING-IN CHURITY, Bartlett's Buildings, Holborn-circus, E.C.—Honorary Physician.

GRIENOCK INTERMARY.—Assistant House Surgeon. Salary £40 per annum, with board and residence.

GRIMSBY AND DISTRICT HOSPITAL.—House Surgeon. Salary £120 per annum, with board, lodging, attendance, and washing.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £50 per annum, with board, residence, and laundry Hastings, St. Leonards, and East Sussex Hospital.—Assistant House Surgeon for six months. Salary £20, with board and

HEMBL HEMPSTEAD, WEST HERTS HOSPITAL.—House Surgeon. Salary

£100 per annum, with rooms, board, and washing.

Hôpital Français, 172, Shaftesbury-avenue, W.C.—Second Resident
Medical Officer, unmarried. Salary £50 per annum, with full

and laundry.

WANDSWORTH UNION HOME FOR AGED AND INFIRM, Church-lane,
Tooting.—Assistant Medical Officer. Salary £130 per annum, with

apartments, lodging, and washing.
WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant

Surgeon, unmarried. Salary £75 per annum, with board, residence, and washing.

EST LONDON HOSPITAL AND POST-GRADUATE COLLEGE, Hammersmith-road, W.—Clinical Assistants, Throat, Nose and Ear, Skin, and X Rays, Pathological Laboratory, &c.; and Three Casualty Officers.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon. Salary at rate of £80 per annum, with board, rooms, and

laundry.
YARMOUTH COUNTY BOROUGH.-Medical Officer of Health. Salary £400 per annum

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Polmont, in the county of Stirling; at Littleport, in the county of Cambridge; at Westport, in the county of Mayo; and at Pewsey, in the county of Wilts.

Births, Marriages, and Deaths.

Campuell.—On Dec. 11th, at Westwood, Brechin, N.B., the wife of Malcolm Campbell, M.A., M.B., F.R.C.S. Edin., of a son.

Eyre.—On Dec. 8th, at Holmsdale, Wandsworth Common, to Dr. and Mrs. Eyre, a son.

Hollist.—On Dec. 8th, at Riseley Lodge, Maldenhead, the wife of Gerald W. C. Hollist, M.R.C.S., a son.

Lee.—On Dec. 9th, at Muswell-rise, N., the wife of William Edward Lee, M.D., F.R.C.S., of a son.

STITT.—On Dec. 11th, at 16, Trinity-road, Bootle, Lancashire, the wife of Robert R. Stitt, School Medical Officer and Police Surgeon, of a son.

UPCOTT.-On Dec. 12th, at Hull, the wife of Harold Upcott, F.R.C.S., a

son. On Dec. 11th, at Woolpit, Suffolk, to Dr. and Mrs. Orby R. M. Wood, a daughter.

DEATHS.

Cross —On Dec. 13th, at Tangley Park, Worplesden, aged 59, Horace Edward Firmin Cross, R.N., Inspector-General of Hospitals and Fleets.

N.B.— A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE CLASSIFICATION OF ODOURS. To the Editor of THE LANCET.

SIR,-I have read with considerable interest Mr. Morris J. Williams's letter and your leading article on this subject. No doubt there is a considerable analogy between colour, sound, and odour, and some classification of the last based upon that which obtains in one of the two former is at any rate conceivable. Dr. S. Piesse takes sound and Mr. Williams colour as his basis, but both are met by the initial difficulty of the absence of an adequate terminology. It is pointed out in your leading article that in this respect odour differs from colour and sound, but I think that too much importance should not be attached to this difference. In all probability we owe our well recognised, though far from exact, terminology of colour to the fact that we have an example of colour graduations so frequently before our eyes In the rainbow and other phenomena of a similar character, where all the colours are vividly represented and accurately arranged according to wave length. But even here there are no words exactly denoting various shades of colour—only the larger distinctions are represented in language. To illustrate this perhaps I may be allowed to quote a passage from one of your contemporaries in which a despairing attempt is made to describe colour in accurate terms: "Greys will be prominent, from a soft elephant toneto which, however, a new name will be attached-to a quite delicate pigeon breast. Blues will be smiled upon, and much care is being pigeon breast. Blues will be sinited upon, and the expended in producing these as cold as possible. They are blues without tone so to sav. and infinitely novel. Greens, saving only out tone, so to say, and infinitely novel. Greens, saving only in fausse tints, are not greatly in evidence; in fact, the colour card throughout points to a falling back to indecisive delicacy of tint. Meanwhile, Paris is declaiming loudly over the loveliness of flamme-voyant red with yellow lights in it, aptly likened to the rays of the setting sun " (The Queen, vol. exxvi., Dec. 4th, 1909, p. 1022). With regard to sound, vibration frequency can, it is true, be expressed with approximate accuracy in the musical notation of our day, but, beyond this, comparison to a known sound or allusion to the emotions which a known sound can produce is all which can be attempted in words. If I may be permitted another illustration I would quote the well-known lines of Shelley in which he attempts to describe the notes of the skylark:-

" All the earth and air, With thy voice is loud, As, when night is bare, From one lonely cloud The moon rains out her beams and heaven is overflowed.

Colour and sound, then, are not so very much better off than odour as regards an accurate terminology.

Mr. Williams's suggestion is ingenious, but I cannot think that the time has yet come for any classification at all. The dependence of odour on volatility (specific solubility in air), molecular weight, and chemical constitution is well recognised, and certain "osmophore groups have been described. But beyond this little is known. Odour is not a force or mode of motion, and if due to vibrations these must be intra-molecular. There is some suggestion that this may be the case, as Professor Francis and I have elsewhere pointed out ("Chemical Basis of Pharmacology," p. 332), and until more is known as to these vibrations any attempt at classification can only be pigeon-holing and must fail to shew any scientific relationship between the bodies classified.

As a small instance of the difficulty which lies in the way of Mr. Williams's own classification I may mention that sulphuretted hydrogen is stated when pure to be devoid of odour (Georg Cohn: Die Riechstoffe, 1904).

With apologies for my somewhat diffuse remarks on this very interesting subject,

I am, Sir, yours faithfully,

J. M. FORTESCUE-BRICKDALE, M.A., M.D. Oxon. Clifton, Bristol, Dec. 12th, 1909.

"DANES' SKINS" AND FLAYING.

THE west doors of churches have for ages been used as notice-boards. This was already the case when few could read and printing had not yet been invented. In the Middle Ages the church doors often exhibited notices or warnings in kind. Thus, our early Saxon forefathers are supposed to have occasionally affixed to the doors of their churches, especially in the eastern counties, the skins of Danes or Northmen whom they had caught red-handed in the act of plunder or sacrilege, and whom they had flayed alive. Numerous fragments of so-called "Danes' skins" are still in existence, and were at one time frequently visible on church doors. Thus Pepys, writing of April 10th, 1661, mentions that he observed the great doors of Rochester Cathedral, "as they say, covered with the skins of the Danes." In the newly opened historical cabinet of the Museum of the Royal College of Surgeons are three fine specimens of Danes' skins, presented by the late Mr. Albert

Way, an authority on this subject. These are labelled, "Portion of human skin, said to be that of a Dane, from the door of the Church of Hadstock, Essex:" "Portion of human skin from the door of the Church of Copford, Essex;" and "Portion of human skin from the north door of Worcester Cathedral." These fragments are of an appreciable thickness-quite the tenth of an inch-and resemble small pieces of felt in appearance. The largest, which is from Copford, and measures about two inches by an inch and a half, is pierced by a nail-hole about half an inch wide, a fact which reminds us that large-headed nails, such as are still used on church doors, were driven through the skin in such a manner as not to interfere with the general design of the ironwork on the door. A piece of Hadstock skin was recently exhibited to the Cambridge Antiquarian Society by Alderman Deck. Commenting on this, the Proceedings of this society remark: "About seventy years ago the door of Hadstock Church needed repair, and under an iron bar nailed across the outside were found pieces of skin." The woodwork of this door is very ancient and shows marks of having been cut by a hatchet, but it is a question, in view of the systematic manner in which the skin was fastened to the door, whether it belonged to a Dane at all. Might it not rather be a relic of the human victim immolated when a temple was anciently built? The belfry or steeple of the early Saxon church might conceivably represent the Pagan temple, on the ruins of which many Christian places of worship were founded. The steeple was certainly a lay meeting-place up to a late date, and it was on the steeple door that the Danes' skins were mostly nailed.

Professor Quekett, who was the first to examine the Danes' skins under one of his powerful microscopes, was in favour of the belief in their Scandinavian origin. In or about 1854 he examined a piece of dark-coloured elastic skin, about the size of a half-crown, from the door of the church at East Thurrock in Essex. The explicit tradition of the locality was that the skin had been bolted on the church door, under an iron plate a foot square, as a warning to marauders, and that it had belonged to "a man who had come up the river and robbed the church." He is supposed to have been flayed alive by the Saxon villagers of the time, but, if so, and if they intended to exhibit his skin as a warning, one wonders why it was bolted down and hidden under a plate of metal. Without knowing anything about the East Thurrock tradition, Quekett pronounced the skin to be that "of a light-haired man, having the hair of a sandy colour.

The Worcester skin in the Museum of the Royal College of Surgeons was also pronounced by this great histologist to be "some part of the body of a light-haired person where little hair grows," and he gave much the same verdict in the case of the Hadstock skin. But light hair is no proof of Danish origin. In fact, this little square of Worcester skin is probably English, and is said to have belonged to a man who was flayed for stealing the sanctus bell from the high altar in Worcester Cathedral. The skin was nailed to the fourteenthcentury woodwork of the north door of the Cathedral in the time of Richard II., but may have been transferred from an earlier door. There can be no doubt that in the early Middle Ages torture must have been almost scientifically practised and that the tortured must sometimes have come under medical treatment or observation. for the victims of the gruesome practice of flaying there could have been little medical aid. They were bound to die. The practice seems to have taken a strong hold of the popular imagination and to have lingered long. Indeed, a case is recorded of a boy being flayed by villains as late as 1700 at Sharnford in Leicestershire. And talk of "skinning alive" still lingers in our slums and in the jargon of our gentle schoolboys.

At Lyons during the first French Revolution flaying is said to have been practised on the bodies of the guillotined. The fact is noticed by Mr. St. George Gray in his valuable notes on "Danes' Skins." The skins so procured were made into boots. At Meudon, according to Montgalliard, human skins were tanned and converted into good wash-leather. Thomas Carlyle speaks of breeches being made from the skins. The epidermis of the male was superior in quality and toughness to chamois; that of the women was so soft in texture as to be almost good for anything. In the case enclosing the Danes' skins at the Royal College of Surgeons is a piece of human skin tanned as leather and labelled in Clift's handwriting. It may very well have come from Lyons or Meudon.

TRAGIC INCIDENT IN OBSTETRIC PRACTICE.

UNDER date, Rome, Dec. 8th, an Italian correspondent writes: "Dr. Masetti, a well-known practitioner, and his colleague, Dr. Vecchi, who were recently called in just before midnight to attend a case of complicated labour, found the conditions of the patient such that, to save her life, craniotomy of the child had to be performed. Leaving his colleague in charge Dr. Masetti hurried home for special instruments, but on his return, having mounted many stairs on his journey to and fro, he was seen to suffer acutely from cardiac distress. With no time to lose, he at once applied himself to the operation, but had scarcely introduced the instrument when, with the exclamation, 'Dio: mi sento male' ('God: I feel ill'), he fell forward, overtaken with syncope. The poor patient, an intimate friend of Dr. Masetti, whom he had often attended in previous confinements, forgetting her own distress in his, looked anxiously on, a keenly interested spectator of the efforts made to bring him round. These proved quite unavailing; the good doctor after not many minutes breathed his last, and his colleague, Dr. Vecchi, on turning to relieve the lady found that she, too, had already collapsed, involving in her own death the already doomed

life of her child. Dr. Masetti had long laboured under weak heart, and the anxiety, combined with the haste and the exertion in running to and fro between the patient's house and his own, had determined the attack to which he succumbed. The incident has evoked much sympathy far beyond the circles, professional and social, in which Dr. Masetti and his patient were known and esteemed."

HEALTH AND SANITATION IN TRINIDAD AND TOBAGO.

THE report on the Blue-Book of this colony for the year 1908-09 has been prepared by the Acting Colonial Secretary, Mr. W. M. Gordon, and is now published as a Parliamentary paper. The present population is estimated at 343,945. The number of births recorded in 1908-09 was 11,638, while the deaths were 7941, the birth-rate being 33.84 per 1000 and the death-rate 23.09. There was during the year no unusual prevalence of diseases incident to the climate, but an outbreak of bubonic plague, which was confined to Port-of-Spain and suburbs, occurred on May 30th. Between this date and Sept. 25th 19 cases occurred of which 15 resulted in death. The preventive measures adopted were isolation of contacts, special scavenging by sanitary gange, and destruction and bacteriological examination of rats. 3 cases of yellow fever also occurred, 2 in Port-of-Spain and 1 in San Fernando. Towards the close of the year the regulations dealing with the breeding places of mosquitoes were strictly enforced by the prosecution of householders on whose premises any stagnant water containing mosquito larvæ were found. These prosecutions resulted, in most cases, in the offenders being fined by the court, and the result has been satisfactory. Four-fifths of the premises in Port-of-Spain are now connected with the sewerage system, and the remainder will be sewered in the near future. The ravines and drains in the suburb of Belmont have been concreted, and the work of filling in the low-lying lands of the Woodbrook suburb has been continued, with the result that a number of possible breeding places of mosquitoes has been greatly diminished and cases of malarial fever are fewer and less virulent. In view of the distrust with which the health conditions of Trinidad appeared to be viewed by some of her sister colonies in the West Indies, the following statistics are quoted in which the mortality of the colony is compared with that of other colonies. According to the latest available records (those for 1907-08) the death-rate per 1000 in Jamaica was 37.25, in British Guiana, 36.9; and in Barbados, 26.86. For the same period (1907-08) the death-rate per 1000 in Trinidad was 25.6, which fell during last year to 23 09. It will thus be seen that the health conditions of Trinidad compare very favourably with those of the principal West Indian Colonies. The climate of Trinidad is hot but not unhealthy, and while the heat is sometimes oppressive during the day at certain seasons, the nights are almost invariably cool and conducive to sleep. Europeans who lead regular lives enjoy good health in most parts of the colony without the necessity of taking any special care or precautions, though there are certain districts in which malarial fever is common and care required. The number of admissions into the hospitals of Port-of-Spain and San Fernando during the year was 6093 and 2715 respectively. Of the total number discharged from both institutions 2714 were cured, 4871 were relieved, and 252 were recorded as not improved. The total number of deaths in the two hospitals was 967. There are also district hospitals at Arima, St. Joseph, Tacarigua, Couva, Prince's Town, Cedros, and Tobago, with an aggregate number of patients on March 31st, 1909, of 177. Special hospitals likewise exist in Trinidad and Tobago for the treatment of yaws patients. In the former there were on March 31st, 1909, 182 patients, as against 165 on the same date last year; in the latter there were 218, as against 109 a regrettable increase of 100 per cent. In the Leper Asylum there were 251 inmates on March 31st, 1909. The number of patients admitted during the year was 60; the discharges were 38 and the deaths 38.

THE WEIGHT OF HAND-FED INFANTS. To the Editor of THE LANCET.

SIR,—Can any reader of THE LANCET give a table showing the average weight of infants fed by hand every month from birth, and giving the information separately for the sexes. There are published tables for those raised on mother's milk but not for those otherwise reared. Infants not fed on mother's milk seem heavier. I should be glad of a reference to any published tables or to hear of any original observations if not yet published.

I am, Sir, yours faithfully,

Dec. 13th, 1909.

ENQUIRER.

OBSTETRICS AMONGST THE ANNAMITES.

Dr. Moti, who is now a lecturer in the Military Medical School of Val de Grâce, describes in La Semaine Médicale of Dec. 1st the practice of Annamite midwives as seen by him when he was stationed in Tonkin. The patient lies on a charpoy, under which a brazier of glowing embers is arranged so that the hot air ascends to the genital organs, thus warming the parts and doubtless acting beneficially, being to some extent sterilised. When the woman groans other women who surround the bed cry or chant also so as to drown the patient's cries. If the labour does not progress rapidly enough a woman carefully balances herself on the patient's liiac crests and with her heels over the fundus of the uterus applies the amount of pressure she thinks needed. This always seems to prove effectual, for Dr. Moti during the two years he was in the country never had to apply forceps.

Although dirty rags are used as diapers and though the woman gets up in a few hours and goes on with her ordinary avocations septic complications are extremely rare. This may perhaps be partly explained by the hot-air treatment but is largely due to the avoidance by the midwives of all digital interference.

THE MANUFACTURE OF NITRO-BENZOLS AND ANILINE COMPOUNDS.

To the Editor of THE LANCET.

SIR,—Can any of your readers afford information, or refer me to any work or papers relative to the constitutional and local effects produced in the manufacture and handling of nitro-toluois and nitro-benzols, and in addition any prophylactics in use, and the local and general treatment of disturbances caused thereby? Are local irritations caused in the manufacture of aniline and its compounds?

I am, Sir, yours faithfully, S. F. C.

Dec. 11th, 1909.

A SOCIOLOGIST ON THE TREND OF MODERN MEDICINE.

Mr. H. G. Wells has been unburdening himself of certain suggestive "Scientific Anticipations" in the Christmas number of T.P.'s Weekly, which is largely devoted to a "symposium" of opinions on the question "Whither are we tending?" in which Mr. Arnold Bennett, Mr. T. P. O'Connor, the Rev. R. J. Campbell, and Mr. G. K. Chesterton discuss literature, Parliament, faith, and social evolution respectively. Mr. Wells begins his discussion of medicine as follows: "The general mass of the medical profession, equipped with a little experience and a muddled training, and preposterously impeded by the private adventure conditions under which it lives, goes about pretending to the possession of precise know-ledge which simply does not exist in the world." But after this bitterness he proceeds to speak with considerably more hopefulness as to the future of medicine. Indeed, he is inclined to think that science will advance chiefly along the lines of increased biological knowledge in its widest sense, for "masked, misrepresented, limited, and hampered, the work of establishing a sound science of vital processes in health and disease is probably going on now, similar to the clarification of physics and chemistry that went on in the later part of the eighteenth, and in the early years of the ninetceth, centuries." Mr. Wells also looks forward to the time when medicine will "take over this great hinterland of human interests which legitimately belong to it," as assuredly it is doing already. He proceeds to speculate upon the future possibilities of surgery, and anyone with a knowledge of the unlimited rein which Mr. Wells gives his imagination will not need to be assured that he predicts wonderful achievements on the operating tables of the future. In support of his expectations he quotes the belief of the late Sir Michael Foster. The doctrine of Metchnikoff could hardly have escaped his attention. After repeating that revolutionary scientist's indictment of the large intestine he continues "If a gentleman called upon me 'done up' in the way I am dimly suggesting, with most of the contents of his abdomen excavicated, his lungs and heart probably enlarged and improved, parts of his brain removed to eliminate harmful tendencies and make room for the expansion of the remainder, his mind and sensibilities enhanced, and his liability to fatigue and need of sleep abolished, I should conceal with the utmost difficulty my inexpressible disgust and terror. But then, if M. Blériot, with his flying machine, ear-flaps, and goggles, had soared down in the year 54 B.C., let us say, upon my woad-adorned ancestors at Dover, they would have had entirely similar emotions. And at present I am not discussing what is beautiful in humanity, but what is possible—and, being possible, is likely to be attempted." But having thus made his readers' flesh creep, the prophet of surgical progress closes on a more pleasant note, suggesting that man may yet come to such wisdom as to cultivate physical perfection without the intervention of the knife, and that, if we read aright the promise of modern therapy, is the future of medicine to which we may, indeed, look forward with longing and some slight hope. The dictum of John Hunter should never be forgotten that the necessity for operations is the reproach of surgery.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.50 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 16th, 1909.

Date.	Barometer reduced to Sea Level and 32° F.		Rain- fall.	Solar Radio in Vacuo.	Maxi- mum Temp. Shade.	Min.	Wet Bulb.	Dry Bulb.	Remarks.
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Medical Diary for the ensuing Beek.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

Wales's General Hospital, Tottenham, N.
MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Bvans), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham): Nose, Throat, and Ear (Mr. H. W. Carson). 4.30 P.M., Medical In-patient (Dr. A. J. Whiting).
TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. W. Edmunds); Gynæcological (Dr. A. R. Giles).
WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. H. Pirle).
THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. B. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

WEST-END HOSPITAL FOR DISBASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W

MONDAY.—3 P.M., Clinical Demonstration: Dr. H. Campbell.
TUESDAY.—5 P.M., Clinical Demonstration:—Dr. J. Mackenzie.
WEDNESDAY.—5 P.M., Clinical Demonstration:—Dr. F. Palmer.
TBURSDAY.—3 P.M., Clinical Demonstration:—Dr. T. D. Savill.
FRIDAY.—2 P.M., Clinical Demonstration:—Dr. P. Stewart. 5.30 P.M.,
Clinical Demonstration: Dr. B. Macnamara.

OPERATIONS. MHTROPOLITAN HOSPITALS.

MONDAY (20th).—London | (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelses (2 P.M.), Samaritan (Gynsecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopsedic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Bar (Minor 9 A.M., Major 2 P.M.).

TUESDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 p.m.), Guy's (1.30 p.m.), Middlesex (1.30 p.m.), Westminster (2 p.m.), West London (2.30 p.m.), University College 2 p.m.), St. George's (1 p.m.), St. Mary's (1 p.m.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelses (2 P.M.), Central London Throat and Bar (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Bar (Minor, 9 A.M., Major, 2 P.M.).

WEDMESDAY(22nd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopsedic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopsedic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London

Throat and Bar (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (23rd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 p.m.), St. Mary's (2.30 p.m.), Soho-square (2 p.m.), North-West London (2 p.m.), Gt. Northern Central (Gynscological, 2.30 p.m.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Har

(Minor, (9 A.M., Major, 2 P.M.).

FRIDAY (24th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary (2 P.M.), Ophthalmic (1C A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Throat (9.50 A.M.), Samarian (9.50 A.M. and 2.50 P.M.), Infost, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor 9 A.M., Major, 2 P.M.).

BATURDAY (25th).—Royal Free (9 A.M.), London (2 P.M.), Middle (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Bye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

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Remarks

THE EFFECTS AND USE OF RADIUM.¹

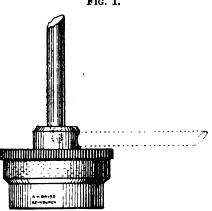
Delivered before the Edinburgh Medico-Chirurgical Society on Dec. 1st, 1909,

By DAWSON TURNER, M.D. Edin., F.R.C.P. Edin., M.R.C.P. Lond., F.R.S. Edin.,

MEDICAL ELECTRICIAN TO THE ROYAL INFIRMARY, EDINBURGH, ETC.

MR. PRESIDENT AND GENTLEMEN,—Mr. Butlin's interesting paper in THE LANCET of Nov. 13th on radium in the treatment of cancer and some associated conditions has suggested to me that perhaps my own five years' experience in the use of this remedy might be of some service. In 1903 I purchased 20 milligrammes of radium bromide, in January, 1904, 10 milligrammes, while in the electrical department of the Royal Infirmary, Edinburgh, I have had charge of 15 milligrammes.

Radium applicators and containers.—All the specimens were in sealed glass tubes except the one of 10 milligrammes, which was in an ebonite case with a thin mica window; this specimen also was quite pure with an activity according to the Curie method of measurement of 2,000,000. To contain this latter specimen I have recently had a small aluminium box made by Baird, Lothian-street, Edinburgh, with a lid which screws on tightly enough to make a water-tight joint; the bottom of this box is only 1-5th of a millimetre thick, so that it is practically quite transparent to the beta and gamma rays. There is a hole in the lid of the box into which an aluminium rod can be screwed so as to facilitate applying the specimen to the interior of the mouth or other cavity (Fig. 1). Last April I went to Paris to study the



Radium applicator.

methods at the Radium Institute and saw their tviles radiferes and other applicators, but I have made no use of these myself. The amount of active salt is spread out into so thin a layer that I doubt their radiating efficiency except for the most superficial condition, and if any screen, such as even a thin piece of indiarubber, be used to prevent their being damaged by an ulcerating surface the rays that would penetrate the screen would be comparatively few in number. I have also an osophageal applicator made by Martindale. With the apparatus I have used I have been practically limited to the different varieties of beta rays and gamma rays. Alpha rays can be obtained from the toiles radiferes and plasters provided no screen at all be used, but these rays would be stopped by the first layer of the tissues and would therefore only influence that layer.

Radium rays appear to have two chief actions: (1) a specific action on certain pathological conditions such as rodent ulcers, cancerous nodules, angiomas, keloids, cicatrices, and fibrous contractions; and (2) an action producing inflammation and destruction somewhat similar to that produced by caustics and burns. Sometimes the one action and sometimes the other may be used, and often both are

1 The address was illustrated by an exhibition of patients and of lantern slides.
No. 4500.

The curative action of radium on a rodent ulcer is an example of its specific action. After a sufficient exposure the floor of the ulcer will be observed to gradually fill up, the raised edges to subside, the surface to contract, until finally the part will be covered with fresh rather transparent skin. As a rule no pain at all will be felt, and there may be but little inflammation, but the part may dry up under a scab. This is an ideal treatment and an example of the "cito, tuto, et jucunde."

If radium be applied in a sufficient dose to the healthy skin there will be observed in the course of a few hours to some days a red spot which will become slightly raised and a little tender; over this a scab may form resembling, as Wickham has pointed out, an impetigo crust; this may persist for a time or be replaced by another, but the final result will be good. I have not observed any tendency to form the obstinate and painful X ray sore.

The dose of radium ought to be measured by the product of the strength of the preparation and the length of the exposure—what would be termed electrically "the ampère hours"; but these quantities would be modified by the presence of screens.

The effect of the screens is to cut off the less penetrating rays, and so to protect the skin or superficial tissues. For only those rays which are absorbed by the skin can affect it. All the rays of radium can be cut off by a sufficient screen except the gamma rays, and the latter are few in number. If a superficial condition is to be attacked use no screen and give a comparatively short exposure. The alpha rays now predominate; they are very powerful, but feebly penetrating. If a subcutaneous condition is to be treated use a screen of aluminium of about one-third to half a millimetre in thickness, or a lead one of about one-tenth of a millimetre, and give a longer exposure. The thicker the screen the less the skin will be affected, but the longer the exposure. Only the beta and gamma rays will now be of use, for a thin sheet of notepaper is sufficient to stop all the alpha rays. If the disease be still deeper use a lead screen, one-fifth to one millimetre in thickness, and give a prolonged exposure. Only the hard beta and gamma rays will get through, and they are few in number. A prolonged exposure is therefore necessary.

After treatment.—As a rule, no after dressings are necessary; leave the part alone. Bad results are atrophies and telangiectases; they may be the result of an overdose.

Conditions in which radium may be of service.—Amongst these are: rodent ulcer, angiomas, keloids, cicatrices and fibrous contractions, warty growths, simple ulcers, malignant growths, pruritus.

Now to refer to some of the cases I have treated.

RODENT ULCER.

CASE 1.—A male, aged 46 years, consulted me in 1906; he was suffering from a rodent ulcer on the nose; it was of the size of a sixpence, punched out, and of about a year's duration. He was treated by the X rays, applied two or three times a week for about three months, but without much benefit. Radium was now tried and 18 applications of 20 minutes each (six hours in all) caused it to heal over with a soft supple scar. In this case five milligrammes of radium bromide of an activity of 300,000 were used. He has since had three recurrences, each of which has yielded rapidly to two or three fresh applications.

CASE 2.—A patient, aged about 50 years, recommended to me by Dr. M. Burnett, consulted me about a rodent ulcer of 6 years' duration placed close to and invading the inner canthus of the eye. It was a little smaller than a sixpence. I shielded his eye with lead foil, and gave him in all 5 hours' treatment with 10 milligrammes of pure radium bromide; no shield except a thin piece of parchment paper was used. In one month's time he was completely cured, and there has so far been no recurrence. This case illustrates the necessity for pushing the treatment beyond what would otherwise seem to be required if a recurrence is to be avoided.

CASE 3.—A somewhat similar case, but in an older gentleman, recommended to me by Dr. G. Carmichael. The ulcer measured $2\frac{1}{2}$ by $1\frac{1}{4}$ inches, was excavated and had very prominent raised edges. It was of many years' duration. It was treated with 10 milligrammes of pure radium bromide enclosed in an aluminium box one-fifth of a millimetre thick for 4 hours weekly. Improvement was slow but steady, and now after a total of 18 hours' exposure the ulcer is almost healed. This was a large ulcer to attack with a radiating surface of radium of only 1 centimetre in diameter and each application was made in a different spot. In Paris they would

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no doubt have treated this case with a radium plaster, so as to attack its whole surface at once, but, as I have already explained, the density of the radiation would have been much weaker, and I doubt whether a quicker result would have been obtained than by my method of applying the whole quantity to a small area at a time. If we express the exposure in the above case according to the method I have suggested it would be one of 180 milligramme-hours.

ANGIOMAS.

Case 4.—A female patient, aged 24 years, recommended to me by Professor Alexis Thomson. On the left side of the face there was a very large port-wine stain roughly divided into three parts. It extended from the roots of the hair above the ear down to the level of the mouth, and it was about 4 inches in breadth; it was almost entirely superficial. Many remedies had been tried unavailingly. A photograph of the face was taken on April 26th, 1909 (Figs. 2 and 3), and treatment was then begun. 10 milligrammes of pure radium bromide, protected by a mica shield and a sheet of tissue paper, were applied for an hour at a time to different areas; no area was exposed a second time until all reaction had passed off. The applications were at first followed by headaches. When subsequent applications were made to a spot which had been previously treated a more intense reaction followed. This patient has now had

involving portions of the hard and soft palates. been ill for about a year, and a full course of iodides and of mercury had been taken without benefit. Professor Thomson had on two occasions excised portions of the growth for microscopic examination without clearing up the diagnosis. Had the diagnosis been that it was definitely cancerous he would have attempted to remove it, but failing such a diagnosis the operation seemed too serious a one to subject the patient to. This patient was at first treated with the X rays by a tube, whose prolongation could be inserted in the mouth. After 20 applications had failed to produce any benefit radium was tried. 10 milligrammes of pure radium bromide were placed in the aluminium applicator I have already described, and by means of the rod were maintained by the patient against the growth for about an hour at a time. Improvement began at once and after ten hours' exposure, total 100 milligramme-hours, I sent him to be re-examined by Professor Thomson; the latter wrote on Nov. 25th, 1909: "Decidedly improved, especially on the left side, where healing appears to have started." This patient is still under treatment.

CASE 7.—A patient, aged 70 years, recommended by Dr. McEwan, was admitted to the electrical department on Oct. 15th, 1909. She was suffering from a papillomatous growth on the left cheek. Ten years previously a similar growth had been removed and there had been no recurrence

FIG. 2.





Nævus before treatment with radium.

51 hours' exposure, or 510 milligramme-hours. The result is a great improvement. Over about half the original area the natural colour of the skin has been restored; it is, in fact, difficult in some places to make out the original extent of the disease. In other places white atrophic spots have appeared, due, no doubt, to over-exposure. In other places as yet untreated the original stain persists.

untreated the original stain persists.

The case is an interesting one; it shows the value of the treatment in this intractable condition and the number of hours exposure that may be required. Subcutaneous nævi are more amenable. I will refer only to one.

CASE 5.—A baby, aged 6 months, recommended by Dr. James Graham. On the right side of the baby's nose was a capillary nævus about the size of a sixpence. This started as a small spot and has grown rapidly. 10 milligrammes of radium bromide were applied without any shield except the mica window for 20 minutes, total 3·3 milligramme-hours. Three days afterwards a white patch appeared in the middle of the nævus and spread over its whole surface. This case must be watched, but it is quite probable that no further application will be necessary.

CARCINOMA AND ASSOCIATED CONDITIONS.

Case 6.—A male, aged 59 years, recommended by Professor Alexis Thomson, was admitted to the electrical department of the Royal Infirmary on August 13th, 1909, suffering from a neoplasm, probably of a transition type,



Nævus after partial treatment with radium.

for some seven months. During the last year the growth had extended rapidly. It now measured 2 inches by $\mathbf{1}_{2}^{\perp}$ inches and it projected about half an inch from the surface of the skin. Treatment with radium was begun on Oct. 15th, and on Nov. 25th the patient was discharged, the growth having disappeared. The total exposure was 43.3 milligramme-hours.

I will not refer in detail to three other cases of malignant disease, two of recurrent scirrhus with secondary deposits and one of sarcoma, because in each case the disease was too far advanced to expect success, though in each some benefit seemed to result. There is not much opportunity of treating early cases of malignant disease with radium, for in the present state of our knowledge early operation offers the best chance, but I should recommend the use of radium after operation to attempt to prevent a recurrence, and from the experience I have gained in such cases I feel confident that its use is attended with benefit.

Other conditions, for which I have used radium, are warts, for which it acts the part of a charm, cicatrices with fibrous contractions, lupus and lupus erythematosus, leukoplakia, and pruritus. It is of decided benefit in the latter condition. With regard to leukoplakia, I have a patient of Dr. J. Struthers just now under treatment who has suffered for the last year from this condition and from ulcers at the front of the tongue. For the last three months

she has had pain in eating and has only been able to take soft food well soaked. She has had so far two applications of one hour each of 10 milligrammes of the pure salt; this is equivalent to 20 milligramme-hours. She returned after this to say that all discomfort in eating had disappeared and that she had again been able to enjoy hard food. One of the ulcers had healed, but enough time has not elapsed (one week) to expect any alteration in the leukoplakia.

THE VACCINE TREATMENT PYORRHŒA ALVEOLARIS (ALVEOLAR OSTEITIS).

BY KENNETH GOADBY, M.R.C.S. ENG., L.R.C.P. LOND., D.P.H. CANTAB.,

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In an earlier communication 1 I have called attention to the various types of bacteria which are to be found in chronic suppurative diseases of the human gums, and I have shown that a large number of cases generically termed pyorrhoa alveolaris might be advantageously treated by means of vaccines prepared from the infecting organisms isolated from the pus. Since those communications were published I have had further opportunity of investigating and treating alveolar osteitis, or pyorrhœa alveolaris, as it is commonly called.

For the general purposes of description the cases of suppuration of the alveolus of the jaw may be divided into two classes: (1) those which exhibit some constitutional disturbances, referable to (a) intoxication, and (b) direct bacterial invasion; and (2) those showing no constitutional disturbances of a definite type, but which have from time to time various minor pathological manifestations about the oral mucous membrane.

The general symptoms associated with suppuration of the alveolus are not always in direct proportion to the amount of local disease observed along the gum margin. Many of the cases included in the tables below are ones in which the pus was small in amount, or even only recognisable on microscopical examination, whereas in others in which considerable suppuration existed along the whole of the alveolus in the upper and lower jaw the constitutional symptoms were only slight. In 4 of the cases recorded all the teeth had been removed on account of their looseness, but the constitutional symptoms, although greatly improved, did not entirely disappear, while in one case the removal of the teeth produced considerable aggravation of the existing intestinal disease.

In 32 of the cases the suppuration was not general, but was confined to individual teeth or groups of teeth. In some of the other cases, although the suppuration was general, the amount of loss of the alveolus was not great, and the teeth had not become denuded of their bony attachments. In several cases the suppuration was undoubtedly started by artificial bridges and crowns. Gold cap crowns, particularly when fitting badly (as they usually do), are notoriously the predisposing cause of many alveolar pyorrhœas.

In dealing with pyorrhœa alveolaris the dental surgeon is frequently placed upon the horns of a dilemma; the patient's doctor has traced the origin of some chronic ill-health, anæmia, or gastro-intestinal symptom to disease of the mouth, and he sends the patient to the dental surgeon to remove the septic cause—i.e., teeth. There may be considerable pus formation, and yet the pockets around the affected teeth may not be deep, the alveolar processes may not be so far destroyed as to have caused direct loosening of the teeth and there is no pain, the patient is therefore exceedingly adverse to removal of all the teeth. If the peridental membrane and alveolar processes are so far damaged that no efficient socket remains, the dental surgeon is in no perplexity as to what should be done, but where the teeth are not so far affected the decision as to treatment is more difficult. It is in these cases that bacterial knowledge and treatment by means of suitable vaccines is the proper course so adopt, for not only can the general symptoms of disease

be eliminated, but the local condition can be so far treated that the teeth may be retained and the suppuration cured.

Four distinct phases of alveolar osteitis are to be recognised; it is quite possible that these constitute two different disease entities.

Type 1.—The gums and the teeth appear perfectly normal. Here and there slight depressions may be noticed between individual teeth, and careful examination in these regions will exhibit the presence of a certain amount of pus, sometimes only to be recognised microscopically, showing the interdental bone has already become affected, and a photograph shows distinct loss of the bony tissue.

Type 2.—The condition is characterised by easily bleeding gums which are slightly detached from the teeth; there is a great increase of interdental space with loss of the interdental bone which becomes softened.

Type 3.—The hypertrophied gum noted in the second type for the most part becomes shrunken, but there is marked injection of the vessels passing up from the buccal surfaces; the bone in various directions has become removed, not only between the teeth, but in the anterior and posterior surfaces of the alveolar plate. Patches of osteoporosis or rarefying osteitis are scattered about the alveolus, and in many instances the bone has become so thinned that a fine-pointed probe or hypodermic needle may be passed right through the aw almost at the level of the roots of the teeth with little more opposition than when passing it through a thick towel. The infected mucous glands which I have described elsewhere 2 are also seen near the infected areas.

Tupe 4.—The teeth are all loose in their sockets, the alveolar process has become absorbed, the gums are boggy, sinuses may be found here and there in the mouth, and as a rule marked fœtor of the breath is present.

The fector of the breath may be an early or late symptom, and depends for its presence on the special types of organisms. It is particularly foul when the bacillus necrosis is present, and has a sweetish-sour smell in the presence of the saccharomyces neoformans.

Of the 51 cases tabulated below (39 females and 12 males) 36 were cured in that all the general symptoms, ansemia, toxemia, weakness, and chronic intestinal dyspepsia, cleared up together with the local suppuration. Nine were relieved; that is to say, the general symptoms disappeared, though the local discharge remained. Two cases died—one of rheumatoid arthritis, the other of lymphatic leukæmia. Four of the cases were not treated by vaccines but by extraction only; three of these cases have developed other symptoms, which are referable to the original chronic intoxication, and the fourth case recovered entirely.

Bacteriology.

As in several previous communications I have dealt at length with the bacteriology of the group of diseases associated under the term pyorrhoea alveolaris, it is only necessary to mention the organisms isolated and used as vaccines.

The methods adopted in dealing with the cases have been: microscopical examination of the films made from the pus, leucocyte and blood count, estimation of hæmoglobin, and differential blood count. The films were stained with Gram's and Leishman's method. The organisms present on the films vary enormously, and the following bacteria are recognisable by their morphological forms: leptothrix racemosa of Vicentini, the bacillus fusiformis, the three varieties of mouth spirochætes, a large number of organisms belonging to the diphtheroid group, diplococci, streptococci, streptobacilli, and yeasts. A very large number of other morphological forms, some of them often classed as leptothrix, have also been found; one organism is sometimes present, a bacillus generally occurring as diplobacilli anaerobic in habit, growing out into long threads in liquid media, and producing a very large amount of evil-smelling gas, which may be classed as the bacillus necrosis. In the films stained by Gram's method the leptothrix racemosa retains the stain, as do some of the diphtheroid bacilli, some of the cocci, and the yeasts; the other organisms decolourise.

Agar streaks were made from the pus, under the usual precautions to eliminate adventitious forms, and wherever possible from an extracted tooth; the organisms were plated out and the individual bacteria isolated and tested on the usual cultural media. A large number of organisms were

² THE LANCET, March 9th, 1907; Transactions of the Odontological Society, 1908

Cases with Slight Local Symptoms of Type I.

(No generalised infection of gum margins or alveolus; local infection between contiguous teeth; pus small in amount. Gums pale but normal in appearance.)

Case.	General symptoms.	Organisms isolated.	Opsonic index.	Result of treatment.
1	Slight anæmia; acne; occasional diarrhœa; "indigestion."	Staphylococcus albus.	0.8	Cured.
2	Moderate anæmia; loss of weight; constant malaise.	Pneumococcus.	0.5 €	,,
_		Micrococcus catarrhalis.	0.7 5	••
3	Anæmia; recurrent ulceration of buccal surface of cheeks.	Streptococcus longus.	0.4	**
4	Desquamation of palmar surface of hands; toxemia.	Micrococcus catarrhalis.	- \ \ '	,,
•	Dosquantation of pannar surface of mands; toxicinia.	Streptococcus longus.	- 1	••
5	No general symptoms.	Staphylococcus citreus granulatus.	4.0	••
6	Recurrent facial neuralgia, paroxysmal.	Diphtheroid bacillus.	0-6	Relieved.
7	Rheumatoid arthritis: fever.	Catarrhalis type.	0.7	Refused treatment;
•	mileumatoria artifritis; lever.	Saccharomyces neoformans.	2.2	died.
8	Chronic rheumatism, knee, shoulder, and wrist joints.	Streptococcus longus.	0.7	Relieved.
9	Toxemia; anemia.	Diphtheroid bacillus.	0.6	Cured.
10	Chronic pharyngitis; anæmia,	Staphylococcus albus.	2.0 €	Improved ; relapsed.
10		Staphylococcus citreus granulatus.	0.7	zmprovou, rompocu.
11	Dhammatal 2 and builds ber 5 and 1 and 1	Staphylococcus aureus.	0.7	Relieved.
11	Rheumatoid arthritis, hands and wrists; anæmia.	Streptococcus.	3.0	
12	Recurrent aphthous ulceration of cheeks and tongue.	Streptococcus longus.	0.6	Cured.
13	Constipation, alternating with diarrhea; toxemia.	Staphylococcus citreus granulatus.	} 0.7	Relieved.
14	Persistent headache; nausea; anæmia; weakness of	Pneumococcus.	2.7	_
	flexors of wrists and fingers.	Staphylococcus aureus.	0.3	Cured.
15	No general symptoms; large hard diffuse swelling outer angle of mandible.	Diphtheroid bacilli.	0.8	**
16	No general symptoms.	" Bacilli,"	1.6	,,
17	General malaise; toxemia.	•	0-4	••
18	Acute paroxysmal neuralgia.	Diphtheroid bacillus.	0.4	Much improved.

Cases with Moderate Local Symptoms of Type II.

(Local pus formation; individual teeth unaffected; irregular infection of alveolar process; osteosclerosis as well as rarefying osteitis.)

•	. , , , , , , , , , , , , , , , , , , ,		necessity of any collect process, outcome collections		
1	Acne.	15	Streptococcus longus.	1.8 5	Cured.
		5	Bacillus acne.	0.2)	5 5
2	Toxemia; post rhinitis; furunculosis.	1.	Staphylococcus aureus.	0.6	
-	Toxemia; post rumus; furunculosis.	18	Streptococcus longus.	1.2	••
3	Lymphatic enlargement; toxæmia; muscular rheumatism.	ì	"	0.7	••
4	Toxæmia, acute.		,,	0.5	••
5	Acne.	1	Staphylococcus aureus.	0.5	Greatly improved.
6	Toxamia; loss of weight; chronic headache.	1	••	0.7	Cured.
_ !		1	•	0.4	
7	Toxæmia (cardisc); herpes of nose.	13	Staphylococcus citreus granulatus	0.6	••
8	Toxæmia; fever.		"Strepto-bacillus."	0.5	Relieved.
9	Anæmia.	İ	Streptococcus longus.	0.3	Cured.
	Marie La Taranta		Staphylococcus aureus.	1.4	
10	Chronic dyspepsia.	ĺ	Saccharomyces neoformans.	1.4 5	••
11	Vomiting; toxemia; anemia.	-	Staphylococcus aureus.	0.6	••
12	Anæmia; headache.		Pneumococcus.	i –	••
13	No general symptoms.	6	Streptococcus longus.	0.7 ₹	Relieved
13		15	Staphylococcus albus.	2.0	Money Get.
14		16	Streptococcus longus.	2.7 }	••
	**	į	Micrococcus catarrhalis.	0.6	; !
		6	**	0.8	
15	Anemia; general malaise.	\exists	Staphylococcus aureus.	0.8	Cured.
l	•	11	Streptococcus longus.	0.9	İ

Cases with Severe Local Symptoms of Type III.

(General pus flow from alveolar margins; loosening of teeth; absorption of alveolus; bleeding of gums; abscess formation.)

1	Toxamia; gastro-intestinal.		Streptococcus. Staphylococcus albus. Micrococcus catarrhalis.	}	0.7		Relieved, but relapse
2	Toxemia.	{	Staphyloccus albus. Staphylococcus citreus granulatus.		0·6 0·5	۲	Relieved.
3	Toxæmia; diarrhou.	3	Staphylococcus aureus. Streptococcus longus.		0·5 1·3	}	Cured.
4	Anamia; nausea,	1	Micrococcus catarrhalis.		0.3		Relieved, but relapse

Cases with Severe Local Symptoms of Type III. - (Continued).

Case.	General symptoms.		Organisms isolated.		Opsonic index.	Result of treatment.
5	Anæmia.	1	Micrococcus catarrhalis. Streptococcus longus. Staphylococcus albus.	1	0·5 1·7 0·5	Cured.
6	Gastro-intestinal; cardiac.	1	Diphtheroid bacillus (septus). Staphylococcus aureus.		3.0	••
7	Severe toxæmia, anæmia, prostration.	5	Staphylococcus aureus. Streptococcus longus.		35	••
8	Insomnia; dyspepsia; secondary neurasthenia.	;	Pneumococcus. Micrococcus catarrhalis.		0·4 1·0 }	••
9	Chronic toxemia; breathlessness; anæmia.	;	Staphylococcus aureus. Micrococcus catarrhalis.		0·3 1·1	••
10	General weakness; pharyngitis; glossitis; acute toxamia.	:{	Micrococcus catarrhalis (?) Saccharomyces neoformans.		0.6	**
11	Gastro-intestinal; much diarrhea; toxemia.	5	Staphylococcus aureus. Streptococcus longus.		0·6 1·7	Not treated; developed ulcerative colitis.
12	Toxemia ; rheumatoid arthritis.	ł	Staphylococcus aureus. Pneumococcus.		0·5 2·3	Relieved;
13	Toxemia; pharyngitis; vomiting; "neuritis" of arm.	{	Streptococcus longus. Saccharomyces neoformans.		0·6) 0·7)	Cured.
14	Toxœmia : obstinate constipation ; anæmia : secondary neurasthenia.	}	Staphylococcus aureus, Bacillus necrosis.		0.8	••
15	Lymphatic leukæmia.		Staphylococcus aureus.	1	2.6	Died.
16	Acute toxemia; fever; vomiting; anemia.	Ş	Pneumococcus,		_ }	Cured.
17	Anemia; chronic nausea; tox:emia; wasting.	t	Staphylococcus aureus. Pneumococcus.		0.8	"
18	Acute facial neuralgia; toxemia; neuro-ordema.	į	Staphylococcus aureus. Streptococcus longus.		0.6	"

isolated, but in order to determine the particular infecting organism in the individual case recourse was had to the method of the opsonic index originally described by Sir Almroth Wright, and in a manner described in one of my earlier papers. The various bacteria in each case, which gave an opsonic index either considerably above normal or considerably under, were presumed to be causal agents of the disease.

The bacteria isolated and determined in this manner; were streptococci of the longus type belonging either to the streptococcus fæcalis or streptococcus angiosus groups of Andrewes and Horder. The pneumococcus was found at times, but the staphylococcus aureus was more common. The staphylococcus aureus met was more common. with in the mouth is characterised by the production of a duller pigment than the staphylococcus aureus occurring in other suppurative lesions; it is somewhat rare for it to have the bright orange pigment generally associated with the name. The orange pigment may develop after a number of subcultures, especially when potato is used as the medium. Another type of staphylococcus not infrequently found, as the tables show, is the staphylococcus citreus granulatus described by Freund. This organism differs from the other staphylococci in being Gram-negative, and is often confounded with the micrococcus catarrhalis, which latter organism is present amongst the Gram-negative cocci A number of organisms of the micrococcus catarrhalis type have also been recognised as causal agents in the suppuration, but these organisms by no means all conform to the catarrhalis type in that they frequently produced fermentation of one or other of the carbohydrates upon which they were tested; but the general type of a nonliquefying non-Gram-staining coccus of somewhat large dimensions with a curious oat-like form has been the type of organism under which I have grouped the micrococcus catarrhalis.

The saccharomyces neoformans has been found four times in the present series, in two of the cases with severe local symptoms. It is not so frequently present as the other

bacteria cited, but in most of the cases in which I have met with it, in addition to those described here, these yeasts have been present in the hypertrophied gum tissues. I have also met with it in new growth of the sarcomatous type in the mouth, and, as I have elsewhere secribed, this organism when inoculated into animals produces metastatic growths closely simulating sarcoma.

The last type of organism which I have found present amongst these 51 cases is a bacillus belonging to the somewhat ill-defined group of so-called diphtheroid bacilli. The organism, which closely resembles the diphtheria bacillus in its staining reaction in that it gives a positive reaction with Neisser; it does not produce toxemia when inoculated into guinea-pigs subcutaneously but produces localised suppuration if any reaction occurs. There are two varieties, one which ferments cane sugar and lactose, and the other which is uncertain in its fermentation; the colonies of the one on agar are minute grey, exceedingly sticky and produce a brownish growth upon the surface of the agar, whilst the streaks of the other organism are yellowish in colour, often almost orange, on the surface of potato; this organism shows the lesser amount of fermentation of the carbohydrates. I have met with these diphtheroid bacilli in chronic periosteal swelling associated with local mouth infection, more particularly in the region of the wisdom teeth.

A considerable number of other bacteria have been isolated and tested from these cases; but as they gave no agglutination with the patients' serum, no marked deviation from the normal as regards their opsonic index, and on inoculation into animals no local or general pathological lesions were produced, their causal relation to the suppuration is probably little or nil, and they have therefore not been included in this account.

In a recent paper which Eyre and Payne⁷ have published they record the causal organism in 33 cases of pyorrhœa alveolaris. The micrococcus catarrhalis is described by them as the predominant organism, it having occurred alone in 15 of the cases, and in conjunction with the streptococcus,

THE LANCET, loc. cit.; Transactions of the Odontological Society, 1908.
 THE LANCET, Sept. 15th, 1906.
 Freund: Inaugural Dissertation, Freiburg, 1898.

Transactions of the Odontological Society.
7 Odontological Section of the Royal Society of Medicine, Nov. 22nd, 1909.

pneumococcus, or staphylococcus aureus in others. They have also described the streptococcus, pneumococcus, and staphylococcus as occurring alone or in conjunction with other bacteria. Their findings corroborate what I have elsewhere stated with regard to the bacteria found, although in my original paper I was not prepared to group all the non-Gram-staining organisms of the coccal type into one group of catarrhalis owing to their differing in their cultural reactions. I am still inclined to regard the various cocci which are to be found in the mouth, and which do not stain by Gram's method, as belonging to a very wide group related on the one hand to the meningococci, and on the other hand to the gonococci, while the catarrhalis may be regarded as an intermediate group.

Method of Treatment.

The method of treatment adopted in these cases has been the preparation of a specific vaccine from the given case, the organism or organisms chosen for the vaccine being, as I have already explained, those which showed a deviation from the normal in their opsonic index to the patient's own serum. The vaccines have been prepared in the ordinary way adopted in my laboratory; a small amount, 0.2 per cent., of trikresol is used as a preservative. As a rule, constitutional disturbance has been rare after the introduction of the vaccine, but in a few instances well-marked constitutional disturbances followed, such, for instance, as vomiting, acute headache, and general malaise, and in a few cases where the opsonic index was abnormally low to the organisms used as a vaccine (although the dose given has been properly reduced) the constitutional disturbances have been very definite and were considerably prolonged. It is not uncommon when the micrococcus catarrhalis is used as a vaccine to get constitutional disturbance closely simulating an acute coryza, particularly in those persons who are susceptible to the common cold. When rheumatic symptoms are present an exacerbation may be looked for, but it does not, as a rule, occur unless the doses be too large.

As far as possible the treatment has been controlled by an examination of the opsonic index of the blood, but small variations have not been regarded as of great moment. Considerable variation in the index has been observed to take place immediately after the inoculation and following two or three of the earlier vaccinations, but after this, although the dose may be increased, the amount of response, as evinced by the determination of the opsonic index, is not great, and the clinical conditions, local and general, must be taken into account. After plotting out a considerable number of opsonic curves I am of opinion that the response to inoculation is definitely shown. I consider, therefore, that, although the error of observation of the opsonic index may be a large one owing both to personal equation and mechanical errors, to say nothing of physiological variations of the leucocytes used, the opsonic index still gives a very considerable amount of information with regard to the progress of the cases, and should not be dispensed with.

Local Treatment.

It is perhaps scarcely necessary to lay down any special lines of local treatment in addition to the method of immunising, as each case requires to be treated individually and from a general surgical standpoint. It is obviously impossible to expect that the denuded peridental membrane of the teeth, the destroyed alveolus, or the shrunken gum will return to the condition which existed prior to the disease by homologous immunisation or any other means that can be devised. All that can be hoped for is to arrest the progress of the disease, to prevent the further destruction of the bony tissue, and where there still exists some framework of the bony tissue around the teeth, such tissue may undergo regeneration.

It follows, therefore, that, where the so-called pockets exist around individual teeth, recourse must be had to active surgical methods. In my own hands the use of the actual cautery has been attended with the best results, the cautery wounds healing quickly and rapidly after previous immunisation has been undertaken. Much knowledge of the local condition may be obtained by the use of the X ray photograph, and it is well in the early stages to determine how far absorption has taken place before recourse is had to surgical measures. Antiseptics are of little avail in the treatment of pyorrhœa, and antiseptic mouth-washes never

gain access to the sockets of the teeth unless they are forcibly applied by means of a fine-nozzled syringe, but scrupulous cleanliness is essential both after the removal of the loosened gum and during the process of treatment, the mechanical action of adhering food naturally tending to interfere with the healing of the tissues.

In the accompanying tables of the cases under discussion a short epitome is given of the cases treated along the lines outlined herein. The general symptoms associated with the cases and referable to the mouth disease embrace many ill-defined symptoms pointing to slow toxic absorption or to definite bacteriæmia. The persistent bronchial catarrh, often with localised symptoms suggestive of early tubercular disease, is to be found; gastro-intestinal symptoms, nausea, sometimes vomiting, with occasional diarrhæa alternating with constipation, are common. Still more common are rheumatic pains, called variously muscular rheumatism, end at times even gout; and anæmia of a septic type is, as might be supposed, common.

Enlargement of the lymphatics in the neck is not, as a rule, well marked, but on careful examination thickened chains of lymphatics may often be found with distinctly enlarged and often tender lymphatic glands. There is generally but little pain referred to the mouth or teeth, but often neuralgia of a fleeting type is attributed either to the head or neck, and occasionally the face. In the early stages, or in the first two types of the disease as cited above, pain on mastication may be complained of, or a sensation of itching of the gums. In such cases individual teeth are generally found to be quite loose, while the majority of the

teeth are sound.

The chief disadvantage of this method of treatment is its necessarily prolonged nature, but as the majority of cases which come for treatment are of four or five years' standing at least, it is not surprising that the cases must be kept under observation for many months.

New Cavendish-street, W.

Medical Societies.

OPHTHALMOLOGICAL SOCIETY.

Staphylococcio Conjunctivitis.—Guttate Choroiditis.—Guttate Iritis.—Myopic Degeneration of Lens.—Congenital Narcoma of the Orbit.—Lymphosarcoma of the Lacrymal Gland.—Exhibition of Cases and Npecimens.

A MEETING of this society was held on Dec. 9th, Mr, W. H. H. JESSOP, Vice-President, being in the chair.

Before the papers of the evening were read Mr. JESSOP alluded in very sympathetic terms to the recent demise of last year's President, Mr. R. Marcus Gunn. He alluded to the large number of contributions which the late distinguished member had made, all marked by great accuracy and care in observation. Mr. Jessop also dwelt affectionately on Mr. Gunn's social qualities, and his faculty of endearing himself to all with whom he was brought in contact. It was resolved to send a letter of condolence to Mrs. Gunn and family.

Mr. R. W. DOYNE read a paper describing a form of Conjunctivitis in which the Meibomian Glands were affected with Staphylococcus Aureus. This he described as giving rise to definite acute attacks, especially after exposure of the eyes. He also pointed out that many cases described as chronic conjunctivitis were due to this cause, as well as many other cases of marginal blepharitis. Mr. Doyne showed a member of a fresh family suffering from Guttate Choroiditis, which he described some years ago, and gave a brief description of the condition. He also read a brief note on a condition that he described as Myopic Degeneration of the Lens, and had pointed out the condition to the society in 1886, when he showed a patient suffering from this form of nuclear degeneration. He also read notes of a form of Iritis, which he described as guttate iritis, occurring in elderly and gouty persons. It presented the appearance of one or more warts at the pupillary margin of the iris, which came on without any noticeable inflammatory appearances, and sometimes disappeared without giving rise to any inflammation. At other times inflammatory symptoms appeared, and adhesions

to the lens took place.—Mr. N. B. HARMAN, in discussing the first paper, said that seven years ago he made bacterial cultures from the normal healthy eyes of school children by passing a platinum loop along the mouths of the Meibomian glands, and in every case he got enormous numbers of the staphylococcus aureus and albus. -- Mr. Doyne, in reply, asked members to look out for such cases and endeavour to ascertain the exciting cause, but for five days nothing but water should be used in the eyes. - Mr. Doyne's other papers were discussed by Mr. E. NETTLESHIP, Mr. T. HARRISON BUTLER, and Mr. J. E. ADAMS.

Mr. M. S. MAYOU read a communication entitled "A Congenital Sarcoma of the Orbit." He pointed out that the interest of this case lay partly in its extreme rarity and partly in its clinical resemblance to proliferating cysts. male, aged 12 days, was admitted to the Central London Ophthalmic Hospital on March 13th, 1908. No eye had been seen since birth on the left side. The patient was a strong, healthy infant and presented no other congenital abnormalities. The right eye was to all appearance normal. Filling the left orbit and protruding from between the lids, which could not be closed, was a red, slightly edematous mass. It was irregular on the surface and covered by the epithelium of the conjunctiva except where it was exposed in the palpebral aperture, where it had started to ulcerate. There was no enlargement of the pre-auricular gland and no eye could be seen. On March 13th the orbital contents were eviscerated, leaving the eyelids in position. The child made a good recovery, the wound granulating and healing over with epithelium. On June 16th, 1908, the child returned to the hospital with a large recurrent mass filling the entire orbit bulging forward the upper lid and protruding beneath it. Complete evisceration of the orbit was performed, the child making a good recovery. After the operation the patient attended the hospital for four weeks, but since then had been lost sight of. The contents of the orbit submitted for examination were hardened in formol. The eye, which was embedded in the upper part of the tumour, had been cut open and the sclerotic divided posteriorly in several places. It appeared about the normal size, the cornea, anterior chamber, iris, ciliary body, and lens being normal. The condition of the posterior part of the globe could not be made out, but there was no evidence of any cystic protrusion therefrom. No definite orbital structure could be recognised, the whole being involved in the tumour. It was composed of mediumsized spindle cells. The walls of the vessels within the tumour were composed for the most part of its cells. Hæmorrhages had taken place into the growth in many situations. The recurrent tumour, examined microscopically, exhibited the same characteristics as the primary tumour, except that the hæmorrhages were not so numerous. The typical microscopical appearances, together with the recurrence of the disease, led him to believe it to be a spindlecelled sarcoma of the orbit during intra-uterine life. He had been able to discover the records of two similar cases which exhibited much the same characteristics.

Mr. A. P. L. Wells and Mr. Mayou communicated a paper on Lymphosarcoma of the Lacrymal Gland. They pointed out the want of proper classification of tumours of the lacrymal gland. They divided them into those derived from the epithelial, the connective, and the lymphoid tissues. The case of a woman, aged 66 years, which they brought before the society was one of the latter type. The patient was admitted to the Central London Ophthalmic Hospital on Jan. 14th, 1909. She was a strong, healthy woman; there were no anæmia and no glandular enlargement. There was nothing in her previous history of note. She complained of a swelling which she had noticed for a considerable time at the upper and outer part of the left orbit in the situation of the orbital portion of the lacrymal gland. The surface of the swelling was somewhat irregular and of about the size of a large walnut. It was soft, almost fluctuating, rounded in outline, and moderately freely moveable. From January to April, whilst under observation, it gradually increased in size, and on admission into the hospital on April 8th there was, in addition to the above symptoms, displacement of the eye downwards, and the tumour seemed to have become slightly attached to the margin of the orbit, which seemed thickened. There was no enlargement of the salivary or lymphatic glands and no signs of dissemination. On April 9th an incision was made over

the tumour, which was found to be encapsuled except in one situation, where it was ruptured. After removal it was seen to be of about the size of a walnut and surrounded by a capsule which was evidently formed from the original capsule of the gland; this was composed of fibrous tissue and was much thicker in some places than in others. In some situations it was much infiltrated by the cells of the growth, whilst in one the tumour had penetrated it. The tumour consisted of round cells of about the size and shape of an ordinary lymphocyte and showed no signs of degeneration, although in some places the cells were more darkly stained and packed closer together than in others. Mitosis was not marked in the cells. The vessels in the tumour were of two kinds. Some, which were evidently new, were composed of a single layer of endothelium, or in some situations of the cells of the tumour itself; the others, which were generally situated in the remains of the trabeculæ of the gland, and were probably the original vessels supplying it, had normal coats which were somewhat thickened. In the literature they had been able to find eight similar cases which exhibited much the same characteristics. The points about the tumours were the late age at which they occurred, all the patients being over 38 years of age; their slowness of growth, from 3 to 4 years; and the absence of glandular enlargement. They also pointed out that these tumours should be differentiated from other orbital sarcoma invading the gland, and from lymphoid growths such as are found in chloroma and lymphadenoma.-Mr. A. W. ORMOND discussed the case.

The following cases and specimens were shown:-Mr. S. Stephenson showed a case of Tubercle of the Choroid, shown originally on Oct. 17th, 1907.

Mr. BISHOP HARMAN showed three cases: 1. Abnormal Congenital Pigmentation of one Eye. 2. Retinitis Nævus. 3. The Diaphragm Test (finished models of the instrument and its accessories).

Dr. RAYNER D. BATTEN showed an Orbital Frame for Eye-glasses, and its adaptation for a ptosis prop.

Mr. A. H. PAYAN DAWNAY: Opacities of the Cornea of an unusual character.

Mr. M. L. HEPBURN exhibited a case of Hæmorrhages of the Macula.

Brighton and Sussex Medico-Chirurgical SOCIETY.—A meeting of this society was held on Dec. 3rd, Mr. C. J. Jacomb-Hood being in the chair.—Dr. E. Wethered showed a case of Ataxic Paraplegia, with a malignant growth of the palate engrafted on an old tertiary syphilitic scar.—Dr. C. F. Bailey exhibited three cases of Rodent Ulcer treated by means of X rays with satisfactory results.—Mr. A. J. Hutchison showed a microscopic specimen of Aspergillus Niger from an ear. The patient had come to him with the ear tightly packed with epithelial débris. When this was removed the walls of the meatus were seen to be much inflamed. Cheesy matter again formed, in which aspergillus was found. Spirit of wine dropped into the ear, diluted at first and gradually increased in strength up to pure spirit, seemed to be the only satisfactory treatment.—Mr. R. F. Jowers showed two Appendices which he had removed. The first was from a man aged 30 years. It was of unusual size and showed a fæcal calculus in situ at the proximal end. The patient recovered. The second specimen was one of intussuscepted appendix which was removed from a man aged 48 years, a heavy drinker. He was admitted to hospital after a third attack of appendicitis. The appendix appeared to be only about one and a-half inches long, and was directed inwards from the cæcum. Within the cæcum and corresponding in position to the proximal end of the appendix could be felt a rounded tumour of the size of a chestnut, with a dimple on it corresponding to the cæcum. Dense adhesions existed where the appendix disappeared into the bowel. The cæcal wall was divided close around the appendix and the latter removed, the opening into the cæcum being closed with a double row of continuous sutures. The patient made a good recovery.—Mr. H. H. Taylor showed a case of Albuminuric Retinitis. - Dr. Williams showed a case of Ulcerating Scleroderma. —Dr. C. H. Benham read notes of some cases treated by Vaccine Therapy. -Dr. Walter Broadbent read a paper on Aortic Regurgitation. He remarked that Corrigan in 1832 wrote his classic account of aortic regurgitation and stenosis, but mitral regurgitation and stenosis were not really differentiated till 40 years later.

Rheumatism was the principal cause of aortic regurgitation, but nearly 25 per cent. of the cases were due to syphilis. Women suffered from it less than men, because their Aortic disease was only half as vascular tension was lower. In rheumatic cases the valves common as mitral disease. were puckered, but the intima of the aorta was smooth; in syphilitic cases portions of the valves were destroyed, and the wall of the aorta was affected for an inch or more above the valves; in atheromatous cases the valves were stiff but not destroyed, and the whole arch of the aorta was athero-The heart might be exceedingly large in rheumatic cases. Of physical signs the most striking was the visible pulsation of the carotids and other vessels, and one of the most important was the absence of the second sound in the neck when there was much destruction of the valves. He discussed the causation of the pulsus bisferiens, and mentioned the great difference between the systolic and diastolic blood pressures. He also went fully into prognosis and treatment.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of this society was held on Dec. 2nd, Dr. T. H. Bickerton, the President, being in the chair. - Dr. N. Percy Marsh read a paper upon Modern Methods of Infant Feeding, and introduced the subject by pointing out the importance of maternal nursing as a factor in the reduction of the present high infantile mortality. He then described the differences, both qualitative and quantitative, which exist between human and cow's milk, and the importance of the enzymes in nutrition and the consequent desirability of avoiding their destruction He recommended by the employment of sterilisation. pasteurisation at 155°F. for the destruction of bacteria and described Freeman's apparatus which he used for that He strongly advocated the percentage method of feeding, especially in those cases of malnutrition in which the assimilative capacity of the infant had been impaired by previous improper methods. The details of percentage feeding were described, firstly when employed through the agency of milk laboratories, and, secondly, the home methods as advocated by Holt, in which by the use of "top milk" containing 10 per cent. or 7 per cent. of fat variations to suit the requirements of any particular case could readily be made. Cases illustrating the various methods employed were described, and in conclusion he stated his belief that percentage feeding was far and away in advance of any method which he had, in an experience extending over many years, previously adopted.—The paper was discussed by the President, Dr. F. Heatherley, Dr. O. T. Williams, cussed by the President, Dr. F. Heatherley, Dr. C. I. Whitans, and Dr. H. Armstrong, and Dr. Marsh replied.—A very interesting exhibition of cases was then held, medical cases being shown by Dr. R. J. M. Buchanan, Dr. A. Gordon Gullan, and Dr. Nathan Raw; surgical cases by Mr. F. T. Paul; diseases of children by Dr. Marsh, Dr. V. C. De Boinville, Dr. Peter Davidson, and Mr. R. C. Dun; ophthalmic cases by Dr. Charles G. Lee, Dr. K. A. Grossmann, Mr. Edgar Stevenson, and Mr. Hugh E. Jones; ear cases by Mr. E. M. Stockdale; and skin cases by Dr. F. H. Barendt, Dr. G. G. Stopford Taylor, and Dr. R. W. Mackenna.

Rebiews and Notices of Books.

Fifty Years of New Japan. Compiled by COUNT SHIGENOBU OKUMA, late Prime Minister of Japan, and edited by MARCUS B. HUISH, Vice-Chairman of the Japan Society. London: Smith, Elder, and Co. 1909. Two vols. Pp. 646. Price 25s. net.

JAPAN, for every sort of reason, political, ethnological, and sentimental, is of the greatest interest to all our citizens, and Mr. Marcus Huish has done a real service by editing this excellent and authoritative work of Count Okuma and his fellow contributors. These handsome volumes tell the story of the growth of Japan since its formal entry upon a sensationally rapid career from powerless and prejudiced insularity to its present position as a first-class power. It is 56 years since the old feudalism of Japan fell and the islands sprang into the new life of a united nation, since which time by a wisely selective adoption of the political institutions of

Western civilisation the empire has progressed to a point which arouses not only the admiration but the apprehensions of some other products of that civilisation. These volumes have been compiled by Count Okuma, who has been both Prime Minister and Minister for Foreign Affairs in Japan, with the assistance and coöperation of the highest authorities on the various subjects, and they narrate the history of a kingdom and a constitution in their making with a happy blend of breadth and particularity. The vast scope of the work is due to the statesmanlike qualities of the compiler; the accuracy of detail follows upon the fact that the foremost contemporaries of the rejuvenated nation have written chapters upon the departments in which they have exceptional knowledge and experience. The work was originally published in Japan last year as a record of the 50 years subsequent to the opening up of the country to foreign intercourse—namely, from 1854 to 1904, and most of the contributors in the first instance only brought their facts up to the time of the Russo-Japanese war; but in the English edition the information is carried as near to the present date as possible by the use of recent statistics and all other available information.

We do not make any attempt to review this work either as a most interesting history or as a valuable contribution to the science of sociology. That it is both will be obvious to the most casual reader, but we can only call attention here to the interesting section dealing with the development of the science of medicine in Japan. Professor Kazutami Ukita in the eighth chapter of the second volume makes the first definite mention of medical science in Japan, saying that the art of healing was from olden times in great repute in the country, "being called the art of benevolence—and a skilled physician was considered equal in merit to a good statesman," which is rather an apt confirmation of Mr. H. G. Wells's scheme in "A Modern Utopia," where he definitely places members of the medical profession among the samurai. Professor Ukita tells the story of Ryotaku Moeno, popularly known as Rankwa (which means Hollandisation), the father of Japanese medicine, whose determination to become a physician led him to learn Dutch. How this man met Gempaku Sugita, who had been born in a house of hereditary surgeons, and came to translate the Tafel Anatomia into Japanese is an extremely interesting story. These two, with a third named Junan Nakagawa, became a centre for the study of Dutch in Japan and must be regarded as the real founders of medicine in Japan. But their date was 50 years before the opening up of Japan; all that their work and the work of their pupils and derivatives could effect was to prepare the soil for Western influence by eliminating some of the gross superstitions of Chinese practice, China being the original source of aboriginal Japanese medicine. But from the time that Japan consented to open her ports, Japanese medicine on a Western basis, with information derived almost entirely from the Dutch, flourished extensively, and the Chinese pathology, which was found wanting when tried by actual dissection, fell into disuse.

Professor Ukita's tale of medical and hygienic development in Japan is here taken up by Professor Tanémichi Aoyama, Dr. Ukabu Fujikawa, and Professor Hiizu Miyaké, who write with great detail and clearness. The first two writers show that the beginning of the healing art in Japan, as in other countries, was intimately associated with magic and divination, but it is interesting to note that even at the time of the mythical ages in Japan that country possessed a system of treating diseases in which bleeding and the use of hot springs figured. This balneotherapy was probably founded on right lines, but during the first century B.C. the influence of Korean civilisation produced a change in the methods of treatment, and subsequently on the introduction

of Confucianism and Buddhism the Japanese medical art became intimately associated with philosophy and religion. With the introduction of Chinese medicine a medical school was founded containing departments which in some respects corresponded with the divisions with which we are familiar in our own medical schools to-day, though special departments for the study of shampooing and acupuncture sound somewhat strangely to the modern ear. The students, who were brought up at State expense, studied seven years for internal medicine and five for pediatrics or surgery. The Chinese school flourished in opposition to the Dutch until just before Commodore Perry's famous visit, after which intercourse with America and England, and later with Germany, confirmed the Japanese in the study of Western medicine. Medical education has now attained to a considerable degree of perfection in Japan. There are at present, besides the medical college of the Imperial University of Tokyo, two other colleges of medicine at Kyoto and Fukuoka. There are also eight medical schools, five of which are maintained by the Government. According to the latest returns, the medical practitioners number over 36,000, of whom 15,000 have studied Chinese or Old Dutch medicine, while some 7000 have received the latest medical education in schools and colleges. Those who have studied in private schools and under individual doctors have to pass an examination held twice a year before they are allowed to commence practice. There are over 10,000 practitioners of this class. The steady progress of the country in the art and science of medicine has been assisted by the fact that graduates from the universities in Europe and America are given licences to practise without examination.

In hygiene, both public and domestic, and in nursing, military, civil, and private, the debt of the Japanese to England and America is freely acknowledged, while the completeness with which the Japanese have seized upon such modern ideas as medical and hygienic associations, public laboratories and bacteriological institutes, children's hospitals and hospitals for the segregation of infectious cases, can only be qualified as marvellous.

This is a most interesting and valuable book.

LIBRARY TABLE.

Whitaker's Almanack, 1910. London: 12, Warwick-lane, E.C. Pp. 989. Price 2s. 6d.—Hazell's Annual, 1910. Edited by HAMMOND HALL. London: Hazell, Watson, and Viney. Pp. 608. Price 3s. 6d. - Who's Who. 1910. Pp. 2162. Price 10s. Who's Who Year Book. Pp. 154. Price 1s. The Writers' and Artists' Year Book. 1910. Pp. 124. Price 1s. net. The Englishwoman's Year Book. Pp. 382. Price 2s. 6d. net. London: Adam and Charles Black.-The Year Book of the Scientific and Learned Societies of Great Britain and Ireland. London: Charles Griffin. Pp. 356. Price 7s. 6d.—Regularly with the approach of Christmas these year-books reach our office, and there are no books that we can commend more cordially to the notice of our readers who desire to keep themselves acquainted with current affairs. "Whitaker's Almanack" is now 42 years old, but it shows no sign of declining vigour. On the contrary, besides its usual features, which, as we are told on the title-page, comprise "the astronomical and other phenomena," this year time is taken by the forelock and the "vast amount of information respecting the Government finances, population, commerce, and general statistics of the British Empire" which the work rightly claims to give, comprises a detailed account of the changes which will occur in Customs and Excise, licences and stamps, taxes and death duties, should the present Budget become law. The retrospect of the past year is particularly full and includes a survey of most of the chief regions of human

activity. Under the Scientific Summary reference is made to cancer research, consumption, eugenics, hypnotism, the Pasteur Institute, the Radium Institute, rat extermination, the ultra microscope, and the Whisky Commission. Other leading articles deal with naval and army reform. old age pensions, aeronautics, social progress, Poor-law relief, secondary education, and public and private wealth. An adequate summary of the existing condition of foreign countries is given. In a word, "Whittaker" is as indispensable as ever .- "Hazell's Annual" has attained its first quarter of a century, and has marked the occasion by the introduction of several new features. The index has been improved both as to type and completeness, and a number of signed articles upon important current topics are presented, amongst which is one upon Radium by Sir Oliver Lodge. There is a fair review of scientific progress during the past year, including medicine and surgery, which, though it refers to the International Congress of Leprosy, makes no mention of the International Congress of Medicine at Budapest. The rest of the Annual contains its usual amount of carefully compiled information. -Of "Who's Who" there is no new thing to be said, but we will repeat that it is a necessary book of reference to all who require to keep in touch with men and affairs. It is a valuable compendium of biographies, in many cases contributed by the subjects who comprise nearly all the public people in this country, with a few foreigners added. The task of editing such a volume so as to please everyone's sense of proportion is obviously impossible, and the old fault remains that the less obvious an individual's claim may be to inclusion the longer may be his autobiography. The book has grown to 2162 pages, and has as a companion volume "Who's Who Year Book," which is made up of tabular lists of people in official or other prominent positions, and other useful information printed in a readily accessible manner. - "The Writers' and Artists' Year Book "will be found of service by the ever-increasing body of people who desire to supplement their incomes by occasional journalism, as well as to professional writers, containing as it does the information necessary for the disposal of all kinds of literary and graphic wares.—"The Englishwoman's Year Book "is of especial interest to mothers exercised in their minds upon the problem of "Unmarried Daughters," which has been so recently brought forward for public debate in the Times. It contains a clear summary of the means of entry, and to some extent of the prospects, of the many professions and callings now open for women. The index has been enlarged, and amongst the new articles are those on the position of women in European countries, copyright, research work, and science. There is a section describing the medical charities and convalescent homes available for women and children.— The scope of the "Year Book of the Scientific and Learned Societies of Great Britain and Ireland" is indicated by its title. It is compiled from official sources and contains full information concerning the bureaus of all the learned societies in this country, with a brief account of their work during the past year.

New Year's Diaries and Calendars.—A New Year's gift which is always acceptable to a medical man is a good pocket or desk diary, since if he cannot find anybody to give him one he will have to obtain it for himself. We are able again to commend in this respect both the productions of Messrs. John Walker and Co. and the well-known Letts's Diaries published by Messrs. Cassell and Co. Messrs. Walker make a special feature of neat and convenient pocket cases containing note-books of various dimensions, and especially useful is the arrangement of the pages devoted to the owner's personal accounts. Even the financial ignoramus, who is not uncommon in the medical profession, can hardly muddle his annual budget if

he adopts one of these little books. The same firm's calendars for the waistcoat-pocket are also neat. Letts's Diaries are probably known to most of our readers and are issued in the usual styles at a moderate cost. We can recommend especially the cloth-bound No. 10 Diary, which is of a handy size and contains a deal of useful information in the preface. In the same series Messrs. Cassell issue a small and compact medical diary reduced to its simplest form. Many of these publications of both firms carry with them a coupon insuring their holder against accident. Amongst the best medical diaries we have seen is that of Messrs. John Wright and Sons (Bristol), which has reached its seventeenth edition, and the chief feature of which is the ingenious insertion of half-leaves by which the record of a whole month's visits to 40 patients can be seen at one "opening" of the book. At the same time such comparison requires the utmost neatness of entry, and we should advise practitioners to look upon all pocket account-books of this class as useful note-books only, or at most, as day-books, and not be tempted to let them replace the ledger as a record of their professional transactions which may assume much importance in the event of the sale of a practice or of a legal dispute.

Months of the Year. By the Rev. PEMBERTON LLOYD. London: W. H. and L. Collingridge. 1909. Pp. 307. Price 5s. net.—The object of the reverend author in writing this book is so good that he somewhat disarms criticism from a literary point of view. A great admirer of rural England, and a profound believer in the value of the influences of the country upon the population, he has written a desultory book round the months of the year, telling the main characteristics of the plants and flowers that grace each season. Interspersed with this information are talks about the church festivals as they occur, and about the sports peculiar to the periods, the whole compost being permeated through and through with quotations from a wide range of reading. The author is a convinced and vehement believer that the salvation of England lies in the revivifying and reorganising of village life. Moreover, as a good clergyman he is confident that this village life-happy, contented, and dignified in its peace and culture as he would have it-must centre round the Established Church. Unfortunately the forces of sociology and political economy make many of us find the cry of "back to the land" one which cannot be shouted vehemently; while still more certain is it that if a clerical element is insisted upon in any such movement unanimity is lost. We do not think that this book, which is evidently the result of much labourlabour which the author has enjoyed, will bring him many adherents to his views, but apart from that he is to be congratulated on having incorporated in his pages so much pleasant and diversified reading.

JOURNALS AND MAGAZINES.

The Proceedings of the Royal Society of Medicine. Vol. III., No. 1. November, 1909. London: Longmans, Green, and Co. Price 7s. 6d. net.—Even though the Royal Society of Medicine is not satisfied with its house, the publication by which the scientific world judges it continues to be of a quality that does credit to it. In carefulness of editing, in type, paper, and illustrations, the first number of the new year shows no departure from the high standard set by its predecessors. A large part of it is occupied by the presidential addresses of the different sections, most of which have appeared, in abstract at least, in these columns. Dr. Leonard Williams's thoughtful address to the Balneological and Climatological Section, entitled "To Redress the Balance," comes first by alphabetical right, and in the same section Mr. J. J. Eyre writes on the Hygiology of Naples. The remaining presidential addresses reported

are by Dr. Samuel Sloan on Electro-Therapeutics in Gynæcology, in the Electro-Therapeutical Section; by Dr. James Niven on Poverty and Disease, a suggestive discourse, in the Epidemiological Section; by Dr. H. Macnaughton-Jones on Pain Associated with Disorders of the Female Genital Organs, in the Obstetrical and Gynæcological Section; by Mr. William Hern on the Relation of Dentistry to Other Branches of Medicine and its Bearing upon the Public Health in the Odontological Section, to which Mr. A. Hopewell-Smith contributes a paper on Infective Disease of the Jaws Associated with Absorption of the Teeth; by Mr. Rickman J. Godlee on Prognosis in Inflammatory Diseases of the Lungs and Pleura, commonly treated Surgically, in the Surgical Section; by Dr. F. W. Mott on the Present Position of the Neuron Doctrine in Relation to Neuro-Pathology in the Pathological Section, which is followed by a report from Mr. S. G. Shattock on a case of Rhabdomyoma of the Urinary Bladder. The Section for the Study of Disease in Children is occupied by clinical reports, following upon a paper on Subacute Liver Atrophy and Liver Pathology in Childhood, by Dr. A. Dingwall Fordyce. The Clinical and Dermatological Sections are also filled with case reports. In the Medical Section is Dr. Robert Maguire's paper on the Treatment of Oxalate Calculus which we published recently. In the Surgical Section is Dr. William B. Coley's paper on the Treatment of Inoperable Sarcoma by Bacterial Toxins, which aroused much interest at the time of its delivery; and in the Therapeutical and Pharmacological Section a discussion is opened by Sir T. Clifford Allbutt, followed by Professor William Osler on the Teaching of Therapeutics in Hospital Wards.

Looking Back.

FROM

THE LANCET, SATURDAY, Dec. 24th, 1831.

EXTRAORDINARY CIRCUMSTANCE.

To the Editor of THE LANCET.

SIR,—As your pages are frequently devoted to the communication of interesting subjects, not exclusively connected with physiology, I should feel obliged by your insertion of the following well-authenticated narrative, which, if it cannot be satisfactorily explained, may serve as a caution against rash vows, and that impious dissatisfaction which some express at the providential dispensations of that God, who governs all events with unerring wisdom.

The wife of a Mr. Higgins, a farmer of Baltonsborough, near Glastonbury, Somerset, having brought him three daughters in succession, and no son, he was so disconcerted at the repeated disappointment, that he vowed, should his next child be a daughter, he would never speak to her. On the approach of his wife's fourth confinement, he repeated this vow. To his great joy, his wife gave birth to a son, and nothing occurred to lessen his satisfaction, until the child began to speak. To his astonishment and distress he then found, that, while the boy would readily address his mother and sisters, and, indeed, any female, nothing could induce him to utter a word to his father, or any male person. This singularity continued during the whole of his father's life (30 years); entreaties, threats, or promises, were of no avail, and the unhappy man frequently bewailed, with tears, the distressing consequence of his rash vow.

On the death of Mr. Higgins, which happened about two months since, the young man, to the astonishment of all who knew him, began to speak fluently to males as well as females, although for thirty years previously he had never been heard to utter a word to any one of the former sex. Mr. Higgins had no other son; he is in good health, and is ready, as are his mother and sisters, and many other respectable persons, to attest the truth of this narrative.

I am, Sir, your obedient servant, Warminster, Dec. 9th, 1831. JOHN HOARE, M.R.C.S., &c.

The Editor of THE LANCET added the following cautious comment:—"We insert this communication as we received it, but offer no comment on its contents."

THE LANCET.

LONDON: SATURDAY, DECEMBER 25, 1909.

THE ANNUS MEDICUS 1909.

It is, perhaps, an arbitrary custom which leads us year by year to carry out a medical stock-taking at Christmas time, for if Science has no frontiers she assuredly knows no limitation of months or years. That Medicine has advanced during the last 12 months we have no doubt, though the time is too early to pick upon any given piece of recorded work and point to it as the beginning of a new principle or the embryo of a method of treatment with which great things will be wrought. task is to record rather than to criticise. Perhaps, indeed, the present stock-taking has left out of notice some innovation big with future hope, for a survey of such a nature, whatever pains be spent upon it, must necessarily fall short of completeness, but we are encouraged to continue the custom of our predecessors and to add another chapter to the history of modern medicine that has been compiled in these pages and in its present form for 40 years, nearly half the lifetime of THE LANCET. Year by year the chapters have grown longer, and space forbids us to make each of them more than an expanded index, but it is, we trust, a discriminating index. Each year, too, the record of medical events, not strictly scientific, becomes longer, as medicine and hygiene enter more prominently into the counsels of the nation and into the daily consideration of our countrymen, as is abundantly evident in this story of the Annus Medicus for 1909.

MEDICINE.

Tuberoulosis.

The principal medical event of the year, which we notice in a separate section, was the Sixteenth International Medical Congress held at Budapest. At that congress, which is fully noticed in another section, no definite pronouncement was made in regard to the treatment of pulmonary tuberculosis, and such would have, perhaps, been premature. The employment of tuberculin in small doses has been further adopted, the remedy being given either by the mouth or hypodermically, and the time of administering it being regulated by the temperature chart. Considerable success is claimed by this method, but the time that has elapsed since it was introduced is too short to allow of any definite conclusions being formed. The results, however, are decidedly encouraging, and more extended trials are certainly desirable.

Important suggestions have been made in respect to the prophylaxis of pulmonary tuberculosis. Two interesting official papers have been published—one, the report of the British delegates to the International Congress on Tuberculosis at Washington, and the other a memorandum by the medical officer of the English Local Government Board, which is intended to supplement the Public Health (Tuberculosis) Regulations, 1908. The delegates to the Washington Congress lay stress in their report upon the coördination

between public and charitable organisations, and it is doubtless desirable to make more use in this country of the several organisations which already exist. It may not be always practicable or desirable to institute dispensaries for the tuberculous, as has been done in more than one continental country, but it is an easier matter to adapt existing dispensaries to the necessity of the situation. The memorandum of the Local Government Board is intended primarily for the use of Poor-law medical officers who are now required to notify cases of tuberculosis coming under their care. The general scheme of the memorandum is one which we welcome, because many points, not all, for which we have contended in THE LANCET for many years are fully accepted. The absolute necessity is urged of differentiating between the acute infectious diseases and tuberculosis in the matter of infectivity, and the fact is emphasised that the infectivity of the latter is low and not improbably only operative under certain conditions of deprivation, overcrowding, or other eminently unwholesome circumstances. The emphasis laid in the memorandum upon the importance of doing nothing which will deter the patient from following his occupation is excellent. "Above all," it says, "the investigation must not pursue inquiries in a manner, or give information, that may prevent a consumptive patient from continuing to earn his livelihood." As a result of all the steps proposed the medical officer of the Local Government Board looks forward to a quicker decline in the death-rate from tuberculosis than has hitherto been experienced, although, he adds, "results cannot be measured with accuracy except after the lapse of a considerable number of years." The Tuberculosis Prevention (Ireland) Act encountered a good deal of opposition in its passage through Parliament, and was considerably modified in the process, but its operations are bound to be beneficent to the country.

The subject of tuberculosis in children is rightly attracting considerable attention. In a paper read before the Washington Congress, and subsequently published in our columns 1 Dr. THEODORE SHENNAN recorded some interesting statistics obtained as the result of an investigation of the post-mortem records of the Royal Edinburgh Hospital for Sick Children. 1085 cases came under review, of which 413 died from tuberculosis. These cases were examined in two series, the first containing 105 and the second 308 cases. 68 per cent. of the children were under five years of age. The lymphatic glands were tuberculous in 97 cases (92.4 per cent.) in the first series and in 243 cases (78.8 per cent.) in the second series. The mediastinal glands were more often affected than the abdominal glands, and dissemination took place more frequently, apparently, from the former group. Tuberculosis of the mediastinal glands was commonly unaccompanied by primary tuberculosis of the lungs, but was frequently accompanied by recent tuberculosis of these organs, in many cases evidently secondary to the gland tuberculosis. Primary ulceration of the intestines, in the absence of any previous excavation of the lungs, was frequently found. It was usually accompanied by caseation of lymphatic glands, mediastinal or abdominal, or both simultaneously. tables drawn up by Dr. SHENNAN refer to children of the poorer classes, and it would be interesting to know in what respects, if at all, statistics dealing in a similar manner with children of the better classes would disagree with those given in the communication under consideration. Dr. J. ALLAN also published an article insisting on the importance of the early recognition of tuberculous mediastinal glands in children, so that by appropriate treatment the progress of the disease may be checked or cured. In the Address in Medicine delivered before the British Medical

¹ THE LANCET, Jan. 30th, 1909, p. 315.

Association at Belfast, Dr. R. W. PHILIP touched in a masterly manner on many points in connexion with the outlook of modern medicine on tuberculosis. He pointed out that the physician and the sanitarian had joined hands, and had been aided not a little by educated social workers who recognised the vast part played by tuberculosis as an agent of national devitalisation and impoverishment. He likewise drew attention to the frequency of tuberculous infection in childhood, and laid stress on the relatively airless conditions of home and school life, especially among the children of the poor. He pointed out that the ratio of increase of pulmonary tuberculosis is greater about the time the child goes to school; also that one morbid influence seems constant throughout the progressive stages of the child's life-namely, the comparative withdrawal of the developing organism from the natural and healthful stimulus of the open air.

The question as to the presence of tubercle bacilli in the blood in tuberculosis has again engaged the attention of bacteriologists. Dr. R. C. ROSENBERGER, Assistant Professor of Bacteriology in the Jefferson Medical College, published the results of his investigations in the American Journal of the Medical Sciences for February. He came to the conclusion that in all forms of tuberculosis there is bacterizemia. He found that even in cases undergoing recovery the bacilli could be demonstrated in the blood, though in small numbers. The importance of these observations is obviously great, but though they appear to have been carefully made, the sweeping conclusion that the tubercle bacillus is always present in the blood in tuberculosis will not be accepted without confirmation.

Typhoid Fever.

Lieutenant-Colonel D. SEMPLE, R.A.M.C. (retired), and Captain H. S. MATSON, I.M.S., have carried out a series of investigations in order to ascertain the effect of heat and chemical agents upon antityphoid vaccines. Briefly stated their results are as follows: 1. The sterilisation of antityphoid vaccine can be efficiently accomplished by the addition of 0.5 per cent. carbolic acid. 2. Heating a vaccine in order to sterilise it introduces a harmful and unnecessary element which acts in two ways—(a) it diminishes its immunising properties; and (b) it curtails its keeping properties. In the experiments recorded by these observers the deleterious effects of heat are clearly shown. 3. Antityphoid vaccine sterilised by the addition of 0.5 per cent. carbolic acid retains its immunising properties unimpaired for two years at least. This is proved (a) by the fact that animals and men treated with a two years old vaccine prepared by this method show the same blood changes as those treated with a fresh vaccine similarly prepared; and (b) by the fact that animals treated with a two years old vaccine prepared by this method withstand the same amount of a virulent typhoid culture when given intraperitoneally as those treated with a fresh vaccine similarly prepared. 4. Animals inoculated with antityphoid vaccine sterilised by the addition of 0.5 per cent. carbolic acid attain a higher degree of immunity (as proved by blood changes and the resistance to lethal doses of a virulent typhoid culture) than similar animals inoculated with a vaccine sterilised by heat (60° C. for 20 minutes, or 53° C. for one hour) and the subsequent addition of an antiseptic (carbolic acid 0.5 per cent., or lysol 0.25 per cent.). 5. An antityphoid vaccine sterilised by heating for 20 minutes at a temperature of 60° C., and the subsequent addition of 0.5 per cent. carbolic, has considerably deteriorated after being kept for two years, as proved by the blood changes and effects of lethal doses of a virulent typhoid culture in animals inoculated with this vaccine. 6. Pure carbolic acid to the extent of 0.5 per cent. would appear to be the best agent with which to sterilise bacterial vaccines, and the

authors consider that its general adoption would obviate any necessity for heating.

Dr. A. CASTELLANI has experimented with attenuated live cultures in typhoid fever. He maintains that the use in man of the live typhoid fever vaccine prepared according to his method (heating of non-virulent broth cultures at 50°C.) is not dangerous. He considers that it induces a higher degree of immunisation than the ordinary vaccines consisting of dead cultures. Though both inoculations may consist of live vaccine without danger, the routine method of antityphoid vaccination which he recommends, and which he now uses, is the inoculation of a half cubic centimetre of the usual dead vaccine (Wright), followed in a week's time by the inoculation of one cubic centimetre of live vaccine. He also states that mixed vaccines may be prepared by using dead or live attenuated cultures of typhoid and dysentery, or typhoid, paratyphoid, and dysentery.

Dr. S. T. IRWIN and Dr. T. HOUSTON published in our columns an interesting account of a "typhoid carrier" successfully treated by the inoculation of typhoid vaccine. The apparent success of this case suggests that vaccine-therapy may furnish, in some cases at least, an effective means of dealing with these carriers of infection, whose existence certainly furnishes a new and difficult problem in epidemiology. The important question of typhoid "carriers" is discussed under the section devoted to Public Health.

Cerebro-spinal Meningitis.

Dr. W. Dow has conducted an investigation into the leucocytosis of epidemic cerebro-spinal meningitis. He found that in the epidemic form cases are always accompanied by a leucocytosis, whether the attack is acute, abortive, mild, or chronic. The character of the leucocytosis is practically the same in all instances, both in adults and in children, and he considered that it is the result mainly of an increase in the number of the polymorphonuclear cells. Nevertheless, he says, a lymphocytosis may be very occasionally observed in infants and in young children. There is a relative decrease of the large mononuclear elements alike in fatal and non-fatal cases, though it is less marked in the chronic type. In acute fatal cases eosinophile corpuscles are always absent, although present in varying degree in all the other groups. Myelocytes were never observed in any of the films examined. Blood platelets were always present in the blood of all the cases examined, sometimes in large numbers. No marked difference was noted in the frequency of occurrence of these elements in the fatal and non-fatal cases respectively. As regards diagnosis, Dr. Dow is of opinion that the leucocytosis is only of value in excluding typhoid fever. From the point of view of diagnosis, he thinks that the absence of eosinophile corpuscles in the acute stage of the disease may be considered of grave significance, but it does not necessarily mean that a fatal issue will immediately ensue, as the case may eventually become chronic.

A communication of considerable interest was made during the year by Dr. D. J. MORGAN in a pamphlet embodying an account of an outbreak of "spotted fever" which occurred in Swansea during 1908. The whole number of cases with which he dealt amounted to 63. It has been generally supposed that infection in cerebro-spinal meningitis is carried by the air and that the germs are inhaled by patients, the throat, nose, and tonsils being the portals of entrance. Dr. MORGAN'S observations do not bear out this supposition. Indeed, he found that cases of apparent direct infection were rare, only three instances occurring in which more than one member of a household suffered. The distribution would seem to be more like that of enteric fever than of immediately contagious diseases, such as scarlet fever or measles. and Dr. Morgan suggests the alimentary canal as the portal of entry, supporting his view on the severity of the abdominal

symptoms encountered, on the occurrence of necrotic areas in the liver, and on the constant enlargement of the abdominal lymphatic glands seen after death. An interesting question with regard to treatment was also raised. Dr. Morgan was struck by the extraordinary divergence in the rate of mortality among cases treated respectively at home and in the isolation hospital at Swansea. Whereas 93 per cent. of the former cases died, in the hospital the death-rate was only 44 per cent. He attributed this remarkable difference to the fact that cases in the hospital were treated by lumbar puncture as a routine measure, whereas when home treatment was carried out this proceeding was sometimes objected to.

Leprosy.

The Second International Scientific Conference on Leprosy held at Bergen in the autumn of this year, afforded a valuable opportunity of taking stock of the present state of opinions held regarding the various aspects of this disease. It is now generally held that Hansen's bacillus is the specific microbe of leprosy. It has, however, been impossible as yet to find a medium in which it can invariably be cultivated outside the human body. The disease is contagious from person to person but the precise way in which contagion takes place has not been demonstrated. The possibility of indirect contagion by fleas, lice, bugs, and the itch parasite cannot be ignored. Some observers claim to have found the specific microbe in the bed bug, and that demodex is sometimes present in the sebaceous follicles of the nose, and that in these same follicles the leprosy bacillus is found, but these observations require corroboration.

Dr. J. M. H. MacLeod emphasised the importance of recognising the possibility of the association of leprosy with other diseases in the same individual and at the same time. Many mistakes have occurred from failure to recognise this possibility, and from regarding every symptom in a leper as being due to the lepra bacillus. The association of leprosy and tuberculosis has been frequently noted in the case of the lungs, and yet there has been a tendency to overlook this possibility elsewhere. Before regarding the caseation with Langerhans's giant cells, which has been described in the spleen, lymphatics, and skin as manifestations of leprosy, Dr. Macleod maintains that it is essential to eliminate by inoculation experiments a mixed infection with tuberculosis.

Sleeping Sickness.

An important step was taken in May last in connexion with the investigation of this disease. A Sleeping Sickness Bureau was established in London, comprising representatives of the Foreign and Colonial Offices and of the Royal Society, to collect and to distribute information respecting this malady. This bureau has already issued some valuable reports edited by Dr. A. W. G. BAGSHAWE, the director of the bureau. In the first the chemo-therapy of trypano. somiasis was dealt with in an exhaustive fashion. It states that practically all patients suffering from sleeping sickness are now treated by atoxyl or some chemically allied substance, either alone or in combination with other drugs. The effect of the administration of atoxyl is to banish the trypanosomes from the blood and the glands. Unfortunately, all the parasites are not killed, for usually a few remain attenuated in virulence and acquire tolerance of the drug. It is therefore necessary to follow up the atoxyl treatment by the use of other trypanocidal drugs, among which may be mentioned mercury and antimony. In the second report the diagnosis of human trypanosomiasis is dealt with, and the exploration of the body fluids, the blood, the gland juice, and the cerebro-spinal fluid, to find the parasite, is discussed in detail. The important subject of gland palpation is likewise considered. Dr. BAGSHAWE also delivered an address

before the Society of Tropical Medicine and Hygiene, limiting himself to the consideration of work carried out during the past 12 months, especially such as had an immediate bearing upon prevention or cure, and made some practical remarks on the administration of the arsanilates. This address was published in our columns on Oct. 23rd.

The report of the German Commission on Sleeping Sickness, appointed in 1906 to proceed to East Africa with a subsidy from Imperial funds to cover the cost of the expedition, was also received. Numerous investigations were made as to whether or not man was the only host of the trypanosoma gambiense. The results were, as a whole, in the negative, and it was concluded that the glossina prefers luman blood for its food, but when this is not available it falls back upon the blood of the crocodile for its nourishment, at least in the region of the Victoria Nyanza.

Diseases of the Heart.

Dr. ALEXANDER MORISON, in delivering an address before the Esculapian Society of London on Cardiac Motion as Revealed by the Vivisection of Disease, raised a number of important physiological and pathological questions. His remarks were founded on the case of a patient who was under his care at the Great Northern Central Hospital suffering from sarcoma of the heart. a condition is rare, and from a clinical point of view there were many features of unusual interest, but Dr. Morison utilised his observations by drawing from them suggestive scientific deductions. For instance, the necropsy revealed the fact that the right side of the heart was so involved in the growth that the circulation had apparently to be carried on almost entirely by the left chamber. The aspiratory and propulsive aid of the right chambers was practically extinguished, and the left side of the heart was acting for a considerable period independently of the right. This in itself is an important observation, for the possibility of this occurring in a heart which has not been bisected is denied by many observers, and the clinical occurrence of hemisystole, or asynchronism of systole in the ventricles while in anatomical union, is denied by those who take this view. One of the most significant features of the clinical aspects of the case was the absence of the usual indications of back pressure, and therefore the blood must have been propelled with sufficient force to insure the nonappearance of congestion or cedema, and considering the extensive invasion of the right side of the heart by the neoplasm the only conclusion to be arrived at was that the left ventricle proved equal to the work thrown upon it.

In delivering the Wightman lecture Dr. GEORGE CARPENTER chose as his subject Congenital Heart Affections, especially in Relation to the Diagnosis of the Various Malformations. He drew attention to the different views which have been held as to the causation of the most prominent symptom—cyanosis. He said that in many cases the explanation is suggested, not that the lungs cannot oxygenate properly, but that they are prevented from dealing with a sufficient proportion of the total quantity of venous blood throughout the body by reason of various defects in the pulmonary region, perhaps combined with weakness of the heart muscle. Cyanosis appeared to depend in some cases not upon defective aeration from defects in the lungs, but rather upon the conformation of the heart, which by reason of faulty construction and physical weakness is placed at a mechanical disadvantage, and is not adapted to deliver a sufficient quantity of venous blood to the lungs to be aerated. Dr. CARPENTER did not think that this would explain all cases, for in some the lungs are not healthy and display considerable microscopical alterations. So wide and so tortuous were the thickened lung capillaries in the case of atresia of the pulmonary artery which he examined that those in the alveoli admitted six or more red corpuscles abreast. Changes such as these, permeating as they did the whole of the lung structure, were not conducive to proper aeration. It would appear, then, that diffuse and not localised structural alterations of the lung tissues are favourable to the production of cyanosis. There are thus two factors in operation—the difficulty of getting the blood to the lungs to be aerated, and the difficulty of aerating the blood when it arrives there should it so happen that the lungs are not in a position to undertake the operation by reason of their structural defects.

Sir T. CLIFFORD ALLBUTT, in opening the discussion on Angina Pectoris at the Section of Medicine of the meeting of the British Medical Association at Belfast, discussed the evidence on which the various theories as to the nature of angina pectoris are based, and explained his own views on the subject. He suggested that the supra-sigmoid portion of the acrta with its investments was the actual site of the change which leads to the disease. Clinical observations had led him to suspect that this region was peculiarly susceptible to changes of blood pressure. He laid special stress upon the investments of the aorta and their involvement in the lesion, and even suggested that the Pacinian bodies which are found in that region might be concerned in the process. He pointed out that recent observations have shown that the pain in intestinal colic and in other forms of visceral pain is not due to the contraction of the non-striped muscle but to the dragging upon the mesenteric or other attachments. He therefore entirely repudiated any suggestion of the cardiac origin of the pain in angina. He believed that there existed morbid susceptibility of the supra-sigmoid region of the aorta and its investments, and the increase of pressure produced a dragging upon these investments, leading to a summation of stimuli which affected the corresponding spinal segment and led to the referred pains so characteristic of this disease. The sudden death he characterised as accidental and due to vagal inhibition, analogous to, and comparable with, the sudden death which occasionally occurs from blows on the testicle, from operations upon the generative organs or upon the root of the lung. In other words, he regarded this special region of the aorta to which he attributed the anginal paroxysm as so sensitive that it might lead to sudden and immediately fatal cardiac arrest from vagal inhibition.

The paper led to an interesting debate in which Sir CLIFFORD ALLBUTT'S views were criticised from several sides, and after the report of the meeting had appeared in THE LANCET the discussion was continued in our correspondence columns, Sir RICHARD DOUGLAS POWELL, Dr. E. H. COLBECK, Dr. NATHAN RAW, and Dr. A. P. BEDDARD all advancing arguments against the attribution of the pain in angina pectoris to diseases in the suprasigmoid aorta. These letters, together with Sir CLIFFORD ALLBUTT'S replies, make an interesting addition to the literature of a muchdebated subject.

Diseases of the Nervous System.

Dr. Ernest Jones delivered an address in April before the Hamilton Medical Society, Ontario, on Modern Progress in Our Knowledge of the Pathology of General Paralysis. He considered that the term "general paralysis," instead of being rather indefinitely applied to a vague group of allied states as was formerly done, must now be restricted to a perfectly definite and sharply marked-off disease having both anatomical and clinical differential features of the most characteristic kind. Reflection on the specific and highly differentiated nature of these changes at once makes it evident that in studying the etiology and pathogenesis of them a similarly specific cause will be found. What that cause is has for

some time been surmised, as the mass of converging evidence drawn from diverse sources and following diverse lines of argument has pointed in only one direction. Dr. Jones indicated that this surmise has within the past few years been most strikingly confirmed by the study of the cerebro-spinal fluid, which showed, on the one hand, that an increase in proteid and a pronounced lymphocytosis occurred in no diseases except syphilis and the affections of tabes and general paralysis that are presumably a sequel of this, and, on the other hand, that highly peculiar substances, the so-called antibodies, are present in every case of general paralysis and in no other affection except syphilis.

On Sept. 18th we published "The Schorstein Lecture" on abscess of the brain in association with pulmonary disease. This lecture consisted of a thesis for the degree of Doctor of Medicine of the University of Oxford as advanced by the late Dr. Schorstein himself. He showed that the chief associations between lung disease and cerebral abscess occur in bronchiectasis and in empyema, which together formed more than three-fourths of all his cases. He also pointed out that cerebral abscess is the second most common cause of death in bronchiectasis

The Vaccine Treatment of Aone.

Dr. ALEXANDER FLEMING drew attention in our columns (April 10th, p. 1035) to the etiology of acne vulgaris and its treatment by vaccines. He first showed the invariable existence of pathogenic bacilli in the comedones; the organisms were cultivated with difficulty on artificial media, but in many cases a pure culture was obtained. Such a culture proved capable of producing a folliculitis on the forearm of a susceptible person. In five days definite pustules appeared, and when the pus from them was examined only the acne bacillus could be seen. Sir ALMROTH WRIGHT showed in 1902 that carefully prepared vaccines derived from the infecting organisms produced a definite beneficial effect. FLEMING'S chief contribution to the subject was the showing that a vaccine prepared from the acne bacillus alone, or in certain cases in combination with a staphylococcus, was capable of effecting a remarkable improvement in the condition. In most cases of acne a stock vaccine of the acne bacillus gave extraordinary results when employed in suitable doses; an excessive dose was followed by a negative phase and the outbreak of a fresh crop of pustules; when the dose was sufficiently reduced improvement followed. In some it appeared to be necessary to prepare a vaccine from the acne bacillus present in the individual patient, but Dr. FLEMING considered such a course to be exceptional.

The etiology of acne vulgaris has for many years been much discussed, but no unanimity has yet been attained. Professor Gilchrist of Baltimore has demonstrated the existence of a bacillus in the early lesions of acne, and in many cases it has been present in a pure culture. The specific character of this bacillus has been denied by many dermatologists in the British Isles, but some recent vaccine experiments have thrown some fresh light on the subject. A few years ago Sir Almroth Wright showed that a staphylococcus vaccine in many cases effected a great improvement in acne when the opsonic index was low; but the staphylococcus vaccine was not successful in all cases, and now Dr. A. Fleming has shown that in such cases a vaccine prepared from the bacillus found in acne is often very effective, while in some others a mixed vaccine is required.

Lupus erythematosus is usually a chronic affection, but from time to time cases occur in which the disease appears in an acute form, and Mr. J. E. R. McDonagh has recorded one of these which he observed in St. Bartholomew's Hospital. The patient was a girl, aged 15 years, who was attacked by the acute form of the disease, and some six months later developed a general peritonitis and purulent

pericarditis followed by death. The pus from both the peritoneum and from the pericardium showed and grew the pneumococcus. Lupus erythematosus is rare in childhood, and for that alone the case deserves publishing, but also the presence of the pneumococcus in this fatal case confirms what is generally recognised, that fatal cases have followed tuberculosis or pneumonia. Most dermatologists are inclined to look upon the disease both in its acute and chronic forms as due to a toxemia.

Mr. RANDAL HERLEY has recorded a case of wound diphtheria occurring in a boy, 18 years of age, who struck his hand on a shovel. Typical diphtheria bacilli were found in the wound which developed. Recovery followed the application of local antiseptic measures and the use of diphtheria antitoxin internally. A swab from the throat was examined with a negative result.

The use of intramuscular injections of insoluble preparations of mercury in syphilis is still under discussion in this country, though elsewhere it is considered of the greatest value. A paper on this subject by Dr. G. PERNET led to an interesting discussion. No one can doubt the efficacy of these injections; the only question is their safety. Much depends on technique, but those who have used them regularly value them greatly.

The Roentgen Ray Treatment of Ringworm.

Soon after the discovery of the Roentgen rays it was found that the rays had the power of causing temporary loss of hair, and when they were employed in ringworm it was found that in certain cases the new hairs which grew after the throwing out of the old hairs were quite free from the disease. Investigation has shown that the X rays have no bactericidal power, and therefore have no direct action on the fungus of ringworm; they merely cause a rapid and complete epilation of all the hairs, whether diseased or healthy, of the part exposed to their influence. The method of actually applying the treatment has now been placed on a firm basis. The essential principle is the accurate adjustment of the dose of the rays so that the desired effect, the removal of the hairs of the area treated, should be produced with unfailing certainty but so that no excess of rays can be administered. In this way the dermatologist can be certain of not producing any permanent alopecia of the scalp and of not causing any X ray burn. The results obtained have been most encouraging.

Lectures of the Year.

We published in THE LANCET as usual the official lectures delivered before the Royal College of Physicians of London. The Lumleian lectures were delivered by Dr. NORMAN MOORE on Rheumatic Fever and Valvular Disease. Hitherto the condition of the joints has been considered as the principal element in rheumatic fever; Dr. NORMAN MOORE, however, insisted that endocarditis is not to be regarded simply as a frequent complication, but as the essential and invariable feature of the affection. He maintained that endocarditis was always present, and that in most cases, but not in all, it produced some permanent alteration in one or more valves. In proof of this assertion he stated that if the heart in a mild case of rheumatic fever is only auscultated at the beginning and end of the disease the sounds may sometimes seem to be unaltered, and it might therefore be assumed that they had been normal throughout, but if the heart were examined daily changes in its sounds would, in his experience, always be discovered. He considered that this fact, taken in conjunction with the evidence of the frequency of definite valvular diseases as a result of rheumatic fever, and of a history of rheumatic fever in cases of valvular disease belonging to the first half of life, justified the belief that those variations in sound might be taken as evidence of the presence of endocarditis, even though

no permanent valvular lesion might ultimately be produced. Dr. A. E. RUSSELL was the Goulstonian lecturer, selecting as his subject "Some Disorders of the Cereoral Circulation and their Clinical Manifestations." He first drew attention to syncopal attacks which might ensue when there was a diminution in the volume of blood passing through the brain, and then proceeded to argue that tne fundamental factor underlying both the ordinary faint and the epileptic fit was cerebral anæmia. He also stated that the difference between the two was one of degree rather than of kind. The Bradshaw lecture was delivered by Dr. JAMES ALEXANDER LINDSAY, who chose as his subject "Darwinism and Medicine." He contended that a general survey of the relation of Darwinism to the science and art of medicine was likely to be salutary in many ways. It would tend to breadth of view, to a philosophic appraisement of the factors which medical men had to deal with, to a recognition of the great underlying laws and secular processes which are related to the art of medicine. Dr. W. S. LAZARUS-BARLOW gave the Croonian lectures on Radioactivity and Carcinoma: an Experimental Inquiry. From the results of his observations he believed that in radioactivity there was a possible isolution of the phenomena of malignant disease. It would suffice to explain the irregular mitoses of malignant new growths; it would explain the lessened formation of pepsin and trypsin in carcinoma, for it had been shown that the activity of these enzymes was much diminished by radio-active influence. It would also explain the curability of some superficial cancers, for in many microbic diseases it had recently been proved that the agent producing a disease might be prepotent in elaborating the remedy. The Milroy lectures, on Disinfection and Disinfectants, were delivered by Dr. R. TANNER HEWLETT; the FitzPatrick lectures, on Greek Medicine in Rome, by Sir T. CLIFFORD ALLBUTT; and Dr. G. H. SAVAGE was the Harveian orator, choosing as his subject "Harvey: Experimental Psychology and Hypnotism.'

SURGERY.

Appendicitis.

Appendicitis has continued through another year to furnish us with surgical developments. In children, very young children, it is not common, though it is difficult to say what is the youngest child on whom an operation has been performed for appendicitis. Two cases recorded in THE LANCET are here deserving of mention. Dr. T. WILSON PARRY has reported the case of a child, 16 months old, who recovered after operation, and a case in a child still younger, just 11 months old, was operated upon by Mr. JOSEPH CUNNING. Cases much younger than this are to be found in the literature. In the cases collected by J. P. C. GRIFFITH was one in which the child was only 6 weeks old, but J. HARRIS operated on a child who was only 41 hours old, and the child recovered. Little has been added towards the solution of the problem of the mode of causation of appendicitis. METCHNIKOFF considers that intestinal worms are often the cause of the disease, but though worms of various kinds have on many occasions been found within the appendix it is generally impossible to show that they have borne any causal relation to the origin of the disease. However, BRUMPT and LECENE have reported a case in which an appendix removed during an attack of acute appendicitis contained a mass of about 50 thread worms, while some of the thread worms were found fixed to the mucous membrane. and one was even found embedded in the wall. In this case there can be no doubt that the worm had penetrated the appendical mucous membrane, and it is almost certain that the worms had given rise to the disease. A case of some importance was reported by Mr. ALBAN H. G. DORAN,

in which a urachal cyst closely simulated an appendicular abscess, and many surgeons have met with cases in which inflamed uterine appendages have resembled, or even been mistaken for, an inflamed appendix.

The discussion as to the best time of operating in appendicitis still goes on, and it cannot be said that at present there is any probability of its being finally settled. Those who have had the most experience of the operation are still inclined to think that it is not essential in every case to perform immediate operation, but it is generally agreed that in a case where any doubt exists as to the mildness of the attack an immediate operation is attended with much less risk than is an expectant treatment. Dr. F. J. SMITH has described a very unusual form of appendicitis in which the only symptoms present were profuse diarrhoa, abdominal pain, and headache, and it was not possible for more than a week to recognise that any inflammation of the appendix was present, but by that time there had occurred a perforative peritonitis which led rapidly to a fatal issue. Mr. G. R. TURNER delivered an important lecture on the desirability of early operation in appendicitis, in which he advocated strongly early operation, and he illustrated his argument by some striking cases. He claimed that in the hands of a surgeon accustomed to abdominal work the early operation is easy and safe. Since 1904 he has removed the appendix in all the cases he has operated upon except five, and four of these five were abscess cases.

Mr. H. S. CLOGG has contributed an article to our columns in which he maintained that in all cases when an appendicular abscess is orened the appendix should always be removed. He described many complications which occurred in the cases where the appendix was left. We concur, on the whole, with Mr. CLOGG's contentions, but it appears to us to be unwise to lay down an absolute rule; much must depend on the exact condition met with by the surgeon in the individual case

Mr. P. H. V. Hammersley recorded a case of appendicitis in a lady in which the attacks of appendical pain were accompanied by hæmaturia and the hæmaturia ceased when the inflamed cystic appendix was removed. Mr. W. Burrough Cosens also reported a case of a boy, three years of age, who was operated upon for acute appendicitis with abscess. A fortnight after the operation he passed much blood with the urine, and the hæmorrhage continued off and on for five weeks. Mr. Albert Carless has met with this association of appendicitis with hæmaturia on several occasions. It is difficult to explain the connexion between the two conditions, but the report of several cases in which the two have coexisted in the same patient points to the probability that their concurrence was not merely a coincidence.

Appendicostomy.

In opposition to the general tendency to remove the appendix freely even when it does not exhibit any manifestations of disease, as has been recommended by some surgeons, there are a few surgeons who consider that the appendix may have some important functions as yet unknown to us, and therefore they advise that its removal should not be performed except when disease renders it necessary. There are others, again, who consider that in addition to any unknown functions which nature may have conferred upon the vermiform appendix it possesses possibilities of value which can be utilised by the surgeon. Mr. C. B. KEETLEY, whose loss we have so recently to deplore, was one of the most strenuous advocates of the potential value of the appendix, and we published in THE LANCET a characteristic paper from him which he read before the Surgery Section of the Royal Society of Medicine. In this he drew attention to the fact that he had demonstrated the value of the operation of \

appendicostomy in the treatment of cases of inveterate constipation, for the opening so formed could be utilised as a channel by which drugs could be introduced into the large bowel. In this paper also he showed that the operation of appendicostomy was of equal value in many other morbid conditions of the large intestine and also of the lower part of the ileum. The operation has been extensively employed, especially in the United States of America, in the treatment of dysentery and other affections of the colon; its value also as a means of administering nutritive injections in place of enemata must not be forgotten. In this country the operation for appendicostomy has not been received with enthusiasm, and therefore at the present time it cannot be said that we have sufficient material on which to base a decided opinion as to the value of the operation. Those who have had most experience of it agree in stating that the operation itself is simple and free from troublesome complications, though few go so far as Mr. KEETLEY in suggesting that appendicostomy should be performed even in cases of acute inflammation of the appendix. Mr. GEORGE HEATON has recorded a case in which he did appendicostomy for membranous colitis in a woman, aged 35 years. with satisfactory results.

Vesico-appendical Fistula.

Dr. R. CADWALLADER has recorded a very rare condition—a permanent fistula between the appendix and the bladder, so that some of the contents of the bowel were able to find their way into the bladder. He operated on the case, and recovery followed. Dr. W. W. KEEN had previously reported a similar case.

The Appendix in a Hernial Sac.

Mr. A. B. GRIFFITH has drawn attention to a rare condition. The patient, who was under the care of Mr. E. W. ROUGHTON, had a left inguinal hernia. Mr. GRIFFITH performed a radical cure, and when he opened the sac it was found to contain the vermiform appendix firmly adherent to the inner wall. Inguinal hernia on the right side not rarely contains the appendix, but only a few cases have been recorded in which it has been found in a left inguinal hernia.

Mr. OWEN RICHARDS of Cairo has also recorded two cases of the presence of an appendix in a left inguinal hernia, but in neither did the appendix form the sole occupant of the hernial sac.

Mr. T. H. KELLOCK has reported a case of a child two years and four months old, in whom the hernial sac of a right inguinal hernia was found to contain an incarcerated appendix, and in the appendix was a pin. Curiously no suppuration was caused, though the wall of the appendix and the wall of the hernial sac had both been perforated by the pin.

Herniotomy at the Extremes of Life.

Mr. H. W. Webber of Plymouth has reported two cases of hernia of some interest on account of the age of the patients. One patient was a man, 93 years old, who suffered from strangulated inguinal hernia. The operation was performed under local anæsthesia and recovery followed, though some weeks later the patient developed a cough and died. Mr. Webber's other case was even more interesting, for it was a case of umbilical hernia in a child two hours old, or perhaps it might be more correctly described as a case of partial ectopia viscerum. Several other abnormalities of development were present, for on each side there was a supernumerary auricle and on each hand an extra digit, while the palate was cleft. The bowel was returned and the umbilical opening was closed, but the child died two days later.

A few years ago we reported a case of a child, six weeks old, who was successfully operated upon for strangulated inguinal hernia, but as the child was only a seven months child the operation really took place a fortnight before the child should have been born. We think that in all probability this is the earliest case of a successful treatment of a strangulated hernia.

Epiploitis after Radical Cure of Hernia.

Now a-days we are accustomed to absolutely uneventful convalescence after operations for radical cure of hernia, but occasionally complications occur which demonstrate the necessity for unceasing vigilance in the performance of this common operation. Dr. C. GREENE CUMSTON has described a case in which epiploitis followed a radical cure. The patient was 24 years old, and his right inguinal hernia contained only a large mass of omentum. This was resected and tied with kangaroo tendon. On the day after the operation the abdomen was distended and the patient complained of pain. The temperature did not rise till the ninth day, when it was 102° F., and the abdomen became still more distended. A swelling was felt on the right side, reaching from the margin of the ribs to the iliac fossa; constipation became obstinate, and epiploitis was diagnosed. Ice bags were placed on the abdomen and a pill containing 2 centigrammes of colloid silver was given four times a day. The temperature came down slowly, and seven weeks after the operation the patient was discharged in perfect health. There can be no doubt that this epiploitis was septic in origin, but the infection was mild and did not go on to suppuration.

Hornia through the Foramen of Winslow.

Hernia through the foramen of Winslow is fortunately rare, but cases are described from time to time. Mr. WALTER H. HAW of Knysna, Cape Colony, has described a case in a little coloured boy, five years old, who was brought to him in a dying condition; in fact, he only lived half an hour. At the necropsy it was found that the cæcum, the appendix, and part of the ileum had passed through the foramen of Winslow; reduction was impossible until the small omentum had been cut through. It is worthy of mention that 53 round worms were removed from the cæcum and appendix; the latter was much dilated and of the diameter of the thumb.

Hernia of the Ilio-pelvio Colon.

Mr. H. BETHAM ROBINSON delivered an interesting clinical lecture on Hernia of the Ilio-pelvic Colon; he reported 11 cases of this condition, illustrating its several varieties, and he pointed out the great importance to the surgeon of the arrangement of the peritoneum over both the iliac and the pelvic colons, and also the great differences that may result from variations in the length and course of the iliac colon.

Radical Cure of Hernia in Childhood.

Mr. WILLMOTT EVANS contributed an article in which he maintained that in children suffering from inguinal hernia mere removal of the sac was all that was needed in performing a radical cure, and that recurrence never occurred.

Volvulus in Connexion with Hernia.

Mr. J. F. Dobson of Leeds recorded two cases of volvulus in connexion with hernia, and Mr. R. Lawford Knaggs of Leeds recorded four; in some of these cases the twist occurred within the hernial sac and was readily recognised, but in others the rotation took place within the abdominal .cavity, and then the condition was shown by the fact that gentle traction on the bowel withdrew from the abdomen intestine as deeply congested as that previously herniated, while it was seen that the cause of the congestion lay higher than the neck of the sac. These cases of volvulus in connexion with hernia are rare, and the cause may be readily overlooked unless the surgeon is aware of the condition.

Mr. WILLIAM BILLINGTON of Birmingham described a remarkable case in which the whole of the small intestive. | had operated within nine months; of these, 10 affected the

together with the cæcum and ascending colon, had undergone rotation, so that the swollen cæcum formed a palpable swelling on the left side. The abdomen was opened six days after the commencement of symptoms, and after emptying the excum through an opening made into it, it was possible to replace the bowel in its original position, and recovery followed. Such an extensive twisting of the bowel can only be possible where the mesentery is abnormally long.

Resection of Bowel.

Mr. W. Sampson Handley recorded a case of extensive resection of gangrenous ileum. The patient was a woman, 29 years old, and she suffered from severe abdominal pain, with symptoms of obstruction. When the abdomen was opened it was found that a mass of the ileum had passed through a hole in the mesentery of the ileum, whereby it had become strangulated. The gangrenous portion of the ileum, 33 inches in length, was resected close to the ileo-cæcal valve and the ileum was implanted into the cæcum. An uninterrupted recovery followed. Mr. G. P. NEWBOLT of Birmingham read a paper at the Belfast meeting of the British Medical Association on 24 cases in which he had resected bowel, and the paper led to a valuable discussion on the methods to be employed in resection of intestine. Opinions were fairly divided between resecting the gangrenous bowel in strangulated hernia at once and postponing the restoration of the continuity of the intestine to a later stage.

Mr. H. M. RIGBY described two cases, in each of which a double resection of intestine was ultimately required. Recovery ensued in both cases.

Duodenal Fistula and Perforation: Pylorectomy.

Mr. LAWFORD KNAGGS of Leeds has described a case of duodenal fistula which he cured by operation. The patient, a girl 17 years old, developed an abscess on the right side of the abdomen. When it was opened about an ounce of pus was evacuated, and it was thought that it had formed under the sheath of the psoas muscle. A drainage-tube was left in and it was later found that the discharge had a peculiar odour, but there was no bile or fæces. The fistula contracted, but still much discharge continued, and charcoal was found on the dressings about four hours after being taken by the mouth. She left the hospital and was readmitted three months later in the same condition. The abdomen was opened and very many adhesions were seen in the neighbourhood of the duodenum, and a depression was found on its posterior wall, probably an ulcer. A posterior gastroenterostomy was performed, and then the pylorus was enfolded by two rows of Lembert sutures parallel to its long axis, so as to convert the pyloric end of the stomach into a solid roll. After the operation the sour odour disappeared at once from the discharge, and no more particles of food were seen. The sinus did not close finally till 18 months later.

Hepato-omental Bands Constricting Stomach.

Mr. GEORGE A. HAWKINS-AMBLER of Liverpool has recorded a case in which adhesions between the great omentum and the liver constricted the stomach, so as to give rise to severe abdominal pain occurring sometimes before and sometimes three or four hours after meals. In hospital she suffered but little, yet the pain returned when she resumed work. At the operation the bands of adhesion were divided between catgut ligatures, and some other bands behind and below the stomach were also severed. No sign of disease could be detected in the stomach. Recovery was rapid and complete.

Perforation of Stomach and Duodenum.

Mr. James Grant Andrew of Glasgow described 13 cases of perforation of the stomach and of the duodenum on which he stomach and 3 the duodenum. Mr. GRANT ANDREW discussed the symptoms and signs present in his cases, and the mode of operation performed. Of the 10 cases of gastric perforation, 6 recovered, but all the duodenal cases died. The series is undoubtedly of interest and the discussion of the details of the cases is of value.

Pulorectomu.

Mr. Sinclair White of Sheffield has recorded an unusual sequel to pylorectomy. The operation was performed for malignant disease and the patient did well for three weeks, but at the end of that time severe abdominal pain appeared with vomiting; his general condition was so bad that the abdomen was opene dagain through the healed wound; several quarts of clear fluid escaped, and on bacteriological examinano evidence of the presence of organisms in it was obtained. The parts concerned in the operation were found to be soundly healed and there was no evidence of peritonitis, but about eight feet of the upper end of the small gut and its mesentery were of a bright pink colour. No cause for it could be found. The abdomen was drained suprapubically for a few days and the patient recovered. It is difficult to suggest any simple explanation of this curious condition.

Intussusception.

Intussusception of the colon simulating a simple prolapse of the rectum is rare, and therefore a case exhibiting this condition described by Mr. ALEXANDER DON of Dundee was of especial interest. The patient was a woman, 44 years old, who after a purgative felt a mass protruding from the anus while at stool. When seen the next day a sausage-shaped swelling nearly 10 inches long protruded from the anus, and at its apex was a polypoid mass. The condition was considered to be a prolapse of the bowel, and after tying and removing the polypoid mass Mr. Don attempted to return the bowel; as this attempt was unsuccessful the abdomen was opened and it was found that the mass consisted wholly of the colon. The intussusception was readily reduced, but as the affected bowel and its mesentery were of doubtful vitality they were fixed outside the abdomen, and on the following day the bowel was opened and the necrotic mass was removed. At a subsequent operation the continuity of the bowel was restored. The polypoid growth was found to be a simple villous papilloma.

Mr. HAROLD STIFF has reported a case in which a carcinoma of the excum caused intussusception; the growth was removed with part of the excum through an incision in the transverse colon and an uneventful recovery followed.

Surgery of Gall-bladder and Pancreas.

Mr. HUGH LETT has described two unusual conditions of the gall-bladder. In one, a woman, aged 72 years, had severe pain in the right hypochondrium, and a rounded swelling could be felt in the region of the gall-bladder. When the abdomen was opened it was found that the swelling was a distended gall-bladder, fixed by recent adhesions. The gall-bladder was tapped and a black fluid composed of altered blood and a little bile was drawn off; it was then discovered that the gall-bladder had been rotated so as to twist the cystic duct. There were four and a half turns from left to right. The gall-bladder was excised; the patient died 12 hours after the operation. In the second case a woman, aged 37 years, had three gall-stones removed, and the gall-bladder was drained by Mr. JONATHAN HUTCHINSON, but 21 months later pain was felt in the right hypochondrium, where there was a rounded swelling. At the operation it was found that carcinoma had appeared in the gall-bladder; this was removed and recovery followed.

Abscess of the Pancreas.

Mr. SETON S. PRINGLE of Dublin has reported a case of great interest in which an abscess of the pancreas was

opened. The patient, a man, aged 46 years, for 10 days had abdominal pain, gradually growing worse, and ultimately becoming acute; he was then admitted into hospital. The upper two-thirds of the abdomen were dull, the dulness extending into the flanks. At the operation a large abscess was found at the site of thepancreas. This was drained, but the patient died 12 days later. Very few cases have been published of operations for abscess of the pancreas, and the death-rate is very high; 5 deaths occurred in 14 cases according to MAYO ROBSON'S statistics.

Foreign Bodies in the Stomach.

Mr. BILTON POLLARD has described an ingenious method which he has devised for the removal of foreign bodies from the stomach without incising the stomach wall. A girl, aged 15 years, swallowed a two-shilling-piece, which lodged in the stomach. The abdomen was opened and the coin seized by the operator between his finger and thumb. An assistant passed a special pair of flexible forceps by the mouth into the stomach; the coin was adjusted in the grip of the forceps, care being taken to avoid the inclusion of the mucous membrane; and the assistant then withdrew the forceps with the coin. The forceps resembles Toynbee's ear forceps, the blades springing apart when uncontrolled. Mr. G. P. NEWBOLT and Mr. R. A. Jones have recorded a case of hair-ball in the stomach in a woman, 22 years old, who had severe dyspeptic symptoms. There was a history of swallowing hair and the diagnosis was confirmed by operation, a mass of hair 7 inches long and 3+ inches broad being removed. Recovery followed after a severe attack of gastritis.

1leosigmoidostomy.

Mr. C. W. Mansell Moullin was the first to perform ileosigmoidostomy for the relief of inveterate constipation, for his earliest case was in 1900. He has now performed the operation seven times, and in all the cases the relief has been very great; there was no mortality. He considers it essential that the new opening should be free, not less than 4 inches in length, and the ileum must not be divided; he holds that division of the ileum means breaking the continuity of peristalsis and leaving the excum and the greater, part of the colon as a blind receptacle, without any possibility of any stimulus reaching it through the bowel on the proximal side.

Colon.

Mr. CHARLES RYALL has devised a new method of attempting to secure sphincteric control after colostomy. His method consists in passing the upper segment of the colon through loops of muscle fibres of the rectus, formed by separating bundles of fibres, or double loops can be made on each side. In a case of acute ulcerative colitis in a man, aged 40 years, Mr. Heaton performed a execostomy so as to divert the fæces from the inflamed colon. The large bowel was irrigated daily with quantities of warm boric lotion, and ten days later a weak solution of silver nitrate was employed instead. The colitis subsided and the opening into the execum was closed three months later.

Torsion of the Spleen and Spleneotomy.

We have published two cases of acute torsion of the splenic pedicle. In one, under Dr. IAN MACDONALD and Dr. W. A. MACKAY of Huelva, the patient was a multipara who had had malaria, and attacks of severe abdominal pain occurred; a diagnosis of moveable kidney was made. As the severity of the symptoms increased a laparotomy was performed and a spleen with two twists of its pedicle was found and removed. In spite of an intercurrent attack of pneumonia the patient recovered. The other case was under the care of Mr. Peter Paterson of Glasgow, and the patient was a girl, 16 years of age, who had had attacks of abdominal pain for five months previously, and in the abdomen a large

smooth rounded tumour was felt. When the abdomen was opened it was found that the pedicle of the spleen had undergone four complete twists, and the vessels were completely thrombosed. The spleen was removed successfully.

Splenectomy for Ruptured Spleen.

Cases of removal of a ruptured spleen are by no means rare, but two recorded during the year are worthy of note. In one under Mr. D'ARCY POWER, and reported by Mr. T. S. LUKIS, a boy, 7 years old, was said to have had a wheel of a wagon weighing 2 tons pass over the abdomen; the child was much collapsed at the time, and the operation was not performed till 42 hours after the injury, when the spleen was found badly ruptured, but all hæmorrhage had stopped Splenectomy was performed and the child recovered. In the other case Dr. J. CRAWFURD RENTON of Glasgow removed the spleen from a boy, 14 years old, who had been run over by a van. The boy was not admitted to the hospital till 24 hours after the injury. The extreme anæmia of the patient, the restlessness, the quick pulse, and the rigidity over the left half of the abdomen all pointed to some severe intra-abdominal injury with hæmorrhage. abdomen was opened and it was seen to be full of blood. The spleen was found to be ruptured, and it was removed after ligature of its pedicle. Later some sterile fluid was evacuated from the abdomen and also from the right pleura, and later still a pneumococcal empyema developed on the same side. After the pus was let out complete recovery followed. In Dr. RENTON'S case differential blood counts were made at intervals for more than a year. The most striking feature was the gradual increase in the relative number of the lymphocytes, and even a year after the accident they were still increasing.

Esophagoscopy.

The value of direct esophagoscopy has seldom been more strikingly demonstrated than in a case under the care of Mr. Herbert Tilley. An infant only four days old had swallowed the teat of a "comforter," stuffed with cotton-wool. Mr. Tilley was able by means of a small bronchoscope to remove the wool and also the teat from the esophagus with a slender pair of laryngeal forceps. The child was none the worse for the exploration and he was able to take the breast a few hours later.

Surgery of the Blood-vessels.

The surgery of the blood-vessels is advancing, and it is now acknowledged that suture of a wounded vessel of any great size is the best treatment. A novel and daring operation has been performed by Dr. J. P. MURPHY of Chicago. A woman, 41 years of age, developed thrombosis of the left iliac artery, which was giving rise to dry gangrene of the limb. Dr. MURPHY exposed the femoral artery immediately below Poupart's ligament and opened it; it was found to be completely thrombosed. With delicate forceps a bifurcated clot 12 inches long was withdrawn from below upwards, and then fresh arterial blood came from below. A finger controlled this hæmorrhage and Dr. MURPHY withdrew some clot from the proximal side, but no blood flowed, and several instruments were passed in vain; but at length bright blood flowed. The wound in the artery was then sutured and the circulation was in part re-established. Four days later amputation was performed 4 inches below Poupart's ligament and the flap survived. Mr. Donald J. Armour and Mr. E. ARCHIBALD SMITH have recorded a remarkable attempt to prevent the spread of gangrene in the leg of a man 69 years old. The femoral vessels were exposed a little below the apex of Scarpa's triangle, and they were cut across and the upper end of the artery was sutured to the lower end of the vein, and similarly the lower end of the artery was

joined to the upper end of the vein; further, the internal saphenous vein was tied in order to prevent "short-circuiting." The operation was done under lumbar anæsthesia, and the patient bore it well. Unfortunately gangrene spread upwards to the thigh, and a fortnight after the anastomosis the leg was amputated a hand's breadth above the knee-joint.

Prevention of Hamorrhage in Amputation of the Hip.

At the present time the chief danger in amputation of the hip is from hæmorrhage, and the method introduced by McBurney of New York is probably the best mode of preventing the loss of blood. It consists in opening the abdomen and compressing digitally the common iliac vessels while the limb is being removed. We have published two cases of the employment of this method. In one Mr. E. W. ROUGHTON was the operator and in the other Mr. T. P. LEGG, and in both a successful result was obtained.

Anastomosis of Nerves.

Mr. C. A. BALLANCE has recorded a case of facial palsy treated by facio-hypoglossal anastomosis, in which a junction was also made between the spinal accessory and the distal segment of the divided hypoglossal nerve in order to prevent permanent lingual paralysis and atrophy. The patient was a woman, 25 years old, and the facial palsy was due to unhealed disease of the temporal bone. The double union was made as mentioned, and recovery was very satisfactory.

Mr. A. H. Tubby contributed a valuable paper on the Treatment of Distal Paralysis by Nerve Anastomosis to the International Medical Congress at Budapest, in which he described the eight cases in which he had operated; two of these were for paralysis due to traumatism, and six were for infantile paralysis. In only two of the whole series could it be said that no clinical signs of regeneration were apparent even after four years, but in one of these operative exploration showed that the external popliteal nerve was being regenerated centrifugally.

OBSTETRICS AND GYNÆCOLOGY.

The Modern Position of Obstetric Medicine.

In his address in Obstetrics at the British Medical Association meeting in Belfast Sir JOHN BYERS considered the modern position of obstetric medicine and surgery and suggested the lines of advance along which progress may be expected in the future. After calling attention to the gradual but steady diminution in the morbidity rate which at the present time is taking place in all lying-in hospitals, Sir John Byers pointed out that this result has been obtained by a recognition of the fact that labour is a natural process—in the great majority of cases requiring no interference, by the thorough application of the most minute surgical cleanliness, and by the observance of CREDE'S teaching that even the simplest internal manipulation may cause septic infection. The death-rate from the septicæmia of childbirth is still one of appalling magnitude when we consider the results obtained in lying-in hospitals, but that there is hope for the future may be gained from a perusal of the figures quoted by Sir John Byers. In indicating the lines of possible and probable progress he laid stress on the more thorough practical training of students and pupil midwives, the need for studying the public health aspect of obstetric medicine, and the importance of the intimate association of the physiological chemist and the pathologist with the obstetric physician.

The Centenary of Ovariotomy.

The present year is one of much interest to gynæcologists, since it marks the centenary of the first operation for the removal of a cyst of the ovary performed by EPHRAIM McDowell in December, 1809. The occasion was celebrated

especially at the annual meeting of the American Gynecological Society in New York, at which the President, Dr. J. RIDDLE GOFFE, delivered an eloquent address on the Father of Ovariotomy. As Dr. Goffe pointed out, McDowell was not only the pioneer of ovariotomy, but he performed the operation with a technique which but for the absence of aseptic precautions differed little from that employed by most surgeons at the present day. Of the 13 cases operated upon by McDowell, 5 died and no less than 8 recovered. He made a short incision for exploratory purposes, followed by a long median or extramedian incision, in both cases avoiding the umbilicus; he practised transfixion of the pedicle, and he sewed up the abdominal wall with interrupted sutures. To an American, too, belongs the honour of being the second surgeon in the world to perform the operation of ovariotomy; this was Dr. NATHAN SMITH, professor of surgery at Yale University, who removed an ovarian cyst successfully on July 5th, 1821. The beneficent results of the pioneer operation of the American surgeon are almost impossible to estimate. PEASLEE calculated that in the 30 years preceding the year 1870, 30,000 years of life had been saved to women by the performance of this operation, and if this was so up to that date what must be the number of years of life saved since then as a result of the thousands of ovariotomies which have been performed successfully all over the world?

Scopolamine-Morphine Narcosis during Labour.

Two important papers on this subject have appeared during the past year, one by Sir HALLIDAY CROOM and one read at the International Medical Congress by Professor KRÖNIG. The latter, in considering the utility of scopolamine for producing drowsiness during labour, said that in women who were sensitive or of nervous temperament or neurasthenic a tedious and painful labour often brought about long-continued and not unimportant states of nervous exhaustion. In those cases it was desirable to reduce the woman's suffering to a minimum by a method which was not injurious to either her or the child. Since STEIRBUCHEL had recommended the scopolamine-morphine treatment for this purpose Dr. Gauss has been working in Dr. Krönig's clinic with specially introduced systems of testing the state of consciousness at any given time, and has greatly improved the methods for the production of the narcosis in question. On the basis of a clinical material amounting at the present time to 2000 deliveries it might be stated that the production of drowsiness by scopolamine was free from darger to both mother and child, and accomplished the object in view by either completely abolishing or else reducing to a minimum the pains of parturition. Sir HALLIDAY CROOM read a paper before the Edinburgh Obstetrical Society on his experience of scopolaminemorphine narcosis during labour. He gave the results of its action on 63 cases in private and in hospital. He believed the best dose was 1-100th grain of scopolamine and 1-6th grain of morphine, and he usually administered it towards the end of the first stage of labour when the pains were coming regularly every few minutes. Occasionally a second dose of scopolamine of 1-200th grain was necessary, but he found it advisable not to repeat the morphine. With these doses the pain of the uterine contractions was markedly diminished and in some cases abolished altogether, and the patients slept soundly in the intervals between the pains and after the completion of labour. Further, the memory of the pains was in most cases strikingly blurred. and many of the patients awoke with no recollection whatever of them. He had found no ill-effects from the drugs upon the mother except a little tendency to postpartum hæmorrhage, but occasionally the children were born

sleepy and required to be revived. In no case was the child's condition serious and none were stillborn. He believed that the treatment was most suited for nervous primiparæ, and particularly in private practice, but emphasised the necessity of using the drug in a freshly prepared form. In the discussion on KRÖNIG's paper GAUSS admitted that investigations made by him with HOLZBACH proved that the secretions, and especially the urine, of the children born after such narcosis contained scopolamine. The children are often born in a condition of oligopnœa with some pallor, and lie quite still with limbs which, though relaxed, respond to stimulation. The oligopnœa rapidly passes off, and this method of inducing narcosis does not, according to him, increase the number of stillbirths nor the infantile mortality during the early days or during the first year of life. The method is not one to be used indiscriminately, and the patients should be under the care of, and closely watched by, a competent physician.

Rupture of the Uterus.

The treatment of cases of rupture of the uterus is still a subject upon which there is a great deal of difference of opinion among obstetric physicians. An important paper was read at the June meeting of the Obstetrical Section of the Royal Society of Medicine by Dr. T. W. EDEN in which he recorded three cases of rupture of the uterus treated by supravaginal abdominal hysterectomy, of which two recovered. He advised that all cases of severe rupture should be treated by abdominal section and removal of the uterus, because (1) it is the only certain way of controlling hæmorrhage; (2) the uterus has frequently been infected previous to the operation; (3) if the uterus is left and the patient recovers the risk of repeated rupture in a subsequent pregnancy is high. Laparotomy and suture of the rent had been shown to yield a higher mortality than hysterectomy, and, for the other reasons stated, was not to be recommended. In cases of extreme urgency it might be wiser, after opening the abdomen to control hæmorrhage. simply to pack the rent from above into the vagina and to remove the uterus a day or two later by the vaginal route. At the same meeting Dr. A. L. H. SMITH recorded the results of 10 cases of rupture of the uterus occurring among 10.989 deliveries at the General Lying in Hospital during the last 20 years. Of these nine died and only one recovered. Most of the speakers who took part in the discussion held the view that no hard-and-fast rules could be laid down for the treatment of these cases, but that each one must be treated on its merits. When possible no doubt hysterectomy is the ideal treatment for this class of case, but, unfortunately, in the majority of instances the patient is not in a condition to bear either vaginal or abdominal hysterectomy.

A very remarkable case of rupture of the uterus by contrecoup in a woman not in labour was recorded by Dr. JOHN PHILLIPS. The woman, a healthy VI.-para, when seven months pregnant fell some 12 to 14 feet on to her buttocks. 10 days after the accident abdominal section was performed and a ragged tear was found in the anterior wall of the uterus in its lower portion, while the fœtus together with nearly the whole of the placenta and membranes had passed through the cleft and were lying free in the abdominal cavity. These were removed and the edges of the tear pared and sutured. The patient made a good recovery and 10 months later was very well. The interesting features in the case are two: the fact that the patient did not develop any peritonitis and the method of production of the rupture. No doubt the condition was caused, as Dr. PHILLIPS suggests, by the impact of the fœtus against the anterior wall of the uterus.

¹ THE LANCET, May 8th, p. 1320.

The Treatment of Contracted Pelves.

With the gradual lowering of the death-rate after the operation of classical Cæsarean section, together with the development of pubiotomy and the introduction of suprasymphyseal Cæsarean section, our methods of treating cases of contracted pelves are gradually, but surely, undergoing a change. At the same time it must be remembered that increasing experience is again bringing to the front the teaching of some of the greatest masters of obstetrics. teaching which of late years there has been a great tendency to forget-namely, the extreme importance of allowing, whenever possible, spontaneous labour to occur in a case of contracted pelvis. In a most interesting paper read before the Glasgow Obstetrical and Gynæcological Society Professor F. SCHAUTA laid great stress upon this point, and showed that in his clinic, considering labours at full term only, nearly 80 per cent. in cases of contracted pelves ended spontaneously. Not only did they end spontaneously but this termination gave better results for the mother than any other, and better results for the child as compared with any other method of treatment, with the exception of Cæsarean section. In cases of contracted pelves where labour took place in a lying-in hospital under the best possible surroundings he recommended the following lines of treatment. With a conjugate of above 8 centimetres (3) inches) there is a possibility of spontaneous delivery and therefore expectant treatment should be adopted. In cases with a conjugate under 8 centimetres (3) inches) Cæsarean section should be performed, and in cases with a conjugate of 8-84 centimetres (31-32 inches) hebosteotomy is to be considered. This operation with a conjugate of 8-81 centimetres (31-32 inches) would be an alternative to spontaneous labour, with a conjugate of 71-81 centimetres (3-31 inches) an alternative to Cæsarean section. The choice would be deter. mined by the size of the head, the character of the labour pains, and the general condition of the patient. These methods should be regarded as typical, and all other methods, such as the induction of premature labour, craniotomy, version, and the application of forceps to the head above the brim, as atypical, and only to be undertaken in special circumstances. These conclusions will be received with some hesitation by many English practitioners, but they are interesting as the matured views of an obstetrician of great experience and of much eminence. and as indicating the trend of modern treatment in these cases. Even in this country at the present day the indications for Cæsarean section are becoming wider and wider, and while hebosteotomy has made but little headway obstetricians are returning to the teaching of SMELLIE and HUNTER, and are at last abandoning the dangerous method of applying forceps to the head above the brim. induction of premature labour still holds its own in England, but there are not lacking signs that among the more enterprising Scotch and Irish schools of obstetricians it is losing the favour it once had in the treatment of contracted pelves. We may well anticipate for the future the more widespread adoption of hebosteotomy and Cæsarean section, the abandonment of craniotomy, except on the dead child, and the much more frequent performance of Cæsarean section when it can be performed as an operation of election.

Suprasymphyseal Casarean Section.

This operation, introduced by FRANK and modified by SELLHEIM, is still upon its trial, but seems likely to take a recognised place as a method of performing Cæsarean section in the future. It aims at exposing the lower uterine segment by an incision above the symphysis pubis without opening the peritoneal cavity, or with the suture of the peritoneum so as to shut the symphysis peritoneum so as to shut the symphysis peritoneum so as to shut the last 200 cases the mortality had fallen to 10 per cent., and Wertheim hoped in the future for an absolute cure of 30 per cent. It must be borne in mind, however, that some authorities still maintain that an extended vaginal hysterectomy will give equally good results in early cases, but it is the experience of all operators that early cases often

off the peritoneal cavity. The extraction of the child follows by a longitudinal section through the lower uterine segment. The operation possesses a special value in cases where the contents of the uterus are already infected, and in doubtful cases where the classical operation is contra-indicated can no doubt be performed with much less risk.

Histology of Fibro-myomata of the Uterus.

An interesting paper upon this subject was published during the past year by Dr. FLORENCE E. WILLEY, who, as the result of the examination of a large number of small fibro-myomata of the uterus, comes to the conclusion that these tumours arise as irregular patches of proliferation of muscle cells of the uterine parenchyma, which have no special relation to the vascular system. The cause of this proliferation is unknown, but the absence of growing tumours before puberty and after the menopause suggests some relation to the activity of the sexual organs. The view held by most writers that fibro-myomata originate by proliferation of the cells forming the coats of arteries or capillaries, and that the muscle fibres are arranged concentrically around a central vessel, is not a correct one, and Dr. WILLEY found no evidence to support it.

Chorion-epithelioma of the Ovary.

A very interesting example of this condition has been recorded by Dr. J. S. FAIRBAIRN, and in his paper he mentions two other similar cases from DOEDERLEIN'S clinic. The cases all occurred in multiparous women in the childbearing period of life and without any history of a preceding cystic mole. There was some disturbance of the menstrual function, but abdominal pain was the chief symptom. The tumours presented the characteristic appearances, both macroscopically and microscopically, of chorion-epithelioma, and there was no evidence of any teratomatous structures or of any immediately antecedent gestation. In one case there were metastases in the vagina, and these in a second case were in the other ovary, but there were not any in the case described by Dr. FAIRBAIRN. The entire absence of any evidence of a preceding ovarian gestation or of a teratoma of the ovary leads Dr. FAIRBAIRN to attribute the origin of these very rare tumours to the deportation of villi from a normal placenta to the ovary and the subsequent development of a chorion-epithelioma in this situation.

The Treatment of Operable Caroinoma of the Cervix.

The best operation to perform for this disease is still a matter upon which a good deal of difference of opinion exists among gynæcologists. In this country the extended abdominal operation with which the name of Professor WERTHEIM is usually associated is making considerable headway, and as it appears to be based on sound surgical principles and to give the best ultimate results, without doubt it will be practised more and more in the future. In inexperienced hands the immediate mortality is still very high, but this has been the case in the evolution of most extensive operations, and not so many years ago the extended operation for the removal of a cancerous tumour of the breast had a mortality which at the present day has been reduced almost to the vanishing point. The latest results published by WERTHEIM are most encouraging. He has now operated by his method in 487 cases, of which in 200 the operations had been performed more than five years ago. In these 200 cases there had been a mortality of 24.5 per cent. and an absolute cure of 19.3 per cent. In the last 200 cases the mortality had fallen to 10 per cent., though the operability had risen to nearly 60 per cent., and WERTHEIM hoped in the future for an absolute cure of 30 per cent. It must be borne in mind, however, that some authorities still maintain that an extended vaginal hysterectomy will give equally good results in early cases.

remain without recurrence no matter what operation is performed, and no single operator has so far equalled WERTHEIM'S percentage of absolute cure.

Physiology of the Oraries and Uterus. The Growth of the Ovaries after Double Oöphorectomy.

In a paper on conservative surgery in regard to these organs Dr. E. W. SCOTT CARMICHAEL described the results of some experiments carried out along with Dr. F. H. A. MARSHALL. There was a general agreement as to the ovary being an organ of internal secretion; its functional activity was, however, supposed to depend on the presence of the uterus, and a substance called "uterin" had been spoken of as maintaining the uterus in functional activity without the presence of ovarian tissue. Dr. CARMICHAEL and Dr. MARSHALL removed the entire uterus in four very young rabbits, which were allowed to attain full growth, and when they were ultimately killed it was found that the ovaries had developed normally. These experiments therefore showed that the growth and development of the ovaries were not dependent on the presence of the uterus, the results being in direct contradiction to those of ZWEIFEL, ABEL, and MENDL and BURGER. It followed from this that the removal of the uterus along with diseased ovaries was a very different matter from removal of the ovaries with a diseased uterus. Conservative operations on the uterus, analogous to the conservative treatment of ovarian tissue, were consequently unnecessary save where safety to the patient demanded them.

In a paper read before the Pathological Section of the Royal Society of Medicine Mr. S. G. SHATTOCK demonstrated that in the young rabbit when double oöphorectomy was performed without the use of ligatures and without disturbing the remainder of the generative organs in any way the result was to produce overgrowth of the uteri (which, in the rabbit, are two) as compared with those of an animal of similar size, whether it had been impregnated or not. He said that gynæcologists were divided in opinion as to the predominant influence of the human ovary on the growth of the other reproductive organs, but his individual opinion was that a fully developed condition of the uterus was an indication that one or both ovaries had at some time or other been in a state of functional activity. He believed that in both sexes the external sexual characters were due to the formation of an internal secretion acting on the vascular supply of the organs through the nervous system.

OPHTHALMOLOGY.

Ophthalmia Neonatorum and Irachema.

Some useful statistics on the incidence of ophthalmia neonatorum have been published by WHARTON and SYDNEY STEPHENSON. The report of the Committee on Preventable Blindness appointed at the International Conference on the Blind in 1908 adds further weight to the cognate recommendations of the committee of the British Medical Association on Ophthalmia Neonatorum and of the committee of the American Medical Association previously issued. It may be confidently expected that some practical advantage will accrue from these authoritative statements and suggestions, and that the devastations of the disease, resulting so often in blindness, will be checked. Of more purely scientific interest are the cases of metastatic gonorrheal conjunctivitis published by McKEE and others.

Another contagious disease of the conjunctiva having widespread disastrous results is trachoma. No further steps to prevent its introduction and propagation in England by alien immigrants can be recorded, but some advance appears to have been made in determining its cause. The bodies originally described by PROWAZEK and HALBERSTÄDTER, working in Java, have been further Arguments are adduced for regarding them as the specific organism of the disease, but it would be premature to adopt this view, and until successful culture and inoculation experiments have been carried out it will be wise to withhold a definite opinion.

Cataraot.

Interest has centred during the past year in the campaign in favour of extraction of cataract in the capsule, led by the indomitable Major HENRY SMITH, I.M.S., of Jullundur in the Punjab. The failure of Major SMITH'S colleagues in other parts of India to confirm his brilliant results is now ancient history, but he is still undaunted and even has commenced to cast ridicule upon his opponents. A solid phalanx of his supporters, composed, it is true, chiefly of his own pupils, appeared at the Indian Medical Congress at Bombay. Perhaps the most important contribution to the discussion was the paper by Captain A. E. J. LISTER, I.M.S., on the after-effects of vitreous escape, which was published in a recent number of THE LANCET. From this it would appear that escape of vitreous may entail relatively little deleterious result. The extraordinary infrequency of the complication in the hands of Major SMITH and his supporters as compared with other operators of at least equal status still remains unexplained.

Glaucoma.

SCHREIBER and WENGLER have produced secondary glaucoma experimentally by the injection of electrolytically precipitated iron into the anterior chamber of rabbits. The plasticity of the coats of the eye in these animals led to the production of an artificial hydrophthalmia as the result of the blockage of the filtration angle. A further case of buphthalmia in association with neurofibromatosis has been reported by KOMOTO. The number of such cases now on record precludes the view that the association is fortuitous, but the etiological relationship is extremely obscure. The operative treatment of chronic glaucoma is so unsatisfactory that many surgeons are engaged in devising new operations or modifications of old methods with a view to obtaining more gratifying results. Cyclodialysis has not gathered many supporters in this country, and most attempts have been directed towards obtaining permanent filtration through the scar of the operation. HERBERT'S and LAGRANGE'S operations are still sub judice. DUFOUR advocates GAYET's methods by section of the eyeball from without inwards in certain cases of difficult iridectomy, a method also recommended by BROOKSBANK JAMES in a modified form with the object of providing filtration.

Optic Neuritis.

The significance of papillodema or choked disc in cases of intracranial disease is a subject of perennial discussion. More attention than usual has been attracted to it recently owing to the publication by PATON of classified records derived from the National Hospital for the Paralysed and Epileptic. It has undoubtedly been the general opinion of most clinicians that optic neuritis commences first and is usually most severe on the same side as the intracranial tumour. These records do not bear out this view, but in spite of the large number of valuable cases collected and collated, further and more exhaustive investigations must be undertaken before the localising value of the neuritis can be considered definitely disproved. The marvellous effect in relieving intracranial pressure by trephining upon the papillædema, the rapid subsidence of the swelling, and the restoration of vision have been the subject of papers by E. VON HIPPEL, DE SCHWEINITZ and HOLLOWAY, RISIEN RUSSELL, and others. The result is so striking that there is less room for difference of opinion on the efficacy of this palliative treatment, and its bearing upon the causation of the condition must be given preponderant weight in the investigated by GREEFF, MIJASCHITA, and many others. discussion of any theory of the pathogenesis of papilloedema.

The Effect of Light on the Eye.

Much attention has been devoted of late to the action of spectral rays upon various parts of the eye, and particularly to the relative part played by ultra-violet rays. Sun-burn, snow-blindness, and ophthalmia electrica have long been recognised as due to this agency. Less certain is their influence in producing erythropsia, and it is emphatically denied by BEST. Experimentally the effects of ultra-violet rays have been investigated by HESS, BIRCH-HIRSCHFELD, SCHANZ and STOCKHAUSEN, and others. The detrimental qualities of these rays have, perhaps, been over-estimated, and there is now a tendency to attribute more of the results to rays of the visible spectrum. At the same time there is ample evidence that excess of rays of short-wave length in ordinary illuminants is deleterious, and it is fortunate that ordinary glass globes form an effectual barrier to the passage of most of them.

During the year a society called the Illuminating Engineering Society has been started to study and discuss the physical and physiological problems of illumination. It consists of oil, gas, and electric light engineers, architects, physicists, physiologists, and so on—all, indeed, who are in any way interested in the subject. The opening meeting was held recently, when an address was delivered by the first President, Professor Silvanus Thompson.

Vaccines and Serum Diagnosis.

The uncertainty of the interpretation of the results and the occasionally disastrous effects of Calmette's conjunctival tuberculin reaction have led to its falling into general disrepute. It has given place to von Pirquet's skin reaction of allied nature, which is being vigorously investigated and may afford a valuable means of diagnosis. The opsonic index, too, has fallen somewhat in favour owing to the relatively enormous error of experiment which attends its application in most cases. It has not succeeded in establishing its value as a control of treatment, but the use of tuberculin as a therapeutic agent still retains its place. The rôle of autocytotoxins in the causation of intra-ocular disease offers a promising field of experimental investigation. The researches of ZUR NEDDEN on the production of retinal changes by nephrotoxins have led Golowin to claim priority for himself and his pupils. He has drawn attention to their work in such various fields as albuminuric retinitis, iridocyclitis, sympathetic ophthalmia, and so on.

Therapeutics.

The light treatment of tubercle of the conjunctiva is advocated by LUNDSGAARD of Copenhagen, who brings forward successful illustrative cases. The value of zinc ionisation in the treatment of rodent ulcer has been demonstrated, and the application of the method to diseases affecting the eyeball is being carried out by WIRTZ and The more superficial diseases, such as those involving the cornea and sclerotic, offer the most promising cases for this mode of treatment. Penetration of the therapeutic agent by ionisation is so superficial that little effect can be expected upon such diseases as irido-cyclitis, &c. Atoxyl, used widely in the treatment of trypanosomiasis and other diseases, is not without danger to the eyes. Clinical examples of optic atrophy due to it have been recorded by COPPEZ and others, and this condition has been produced experimentally. Bile salts have a deterrent effect upon the growth of gonococci in vitro; Löhlein finds that they may be used locally to the conjunctiva with advantage. The operative procedures for glaucoma have been discussed elsewhere. MULES'S operation has received some discussion, notably by WEBSTER Fox of Philadelphia. He advocates delayed implantation of a gold globe in cases where the eyeball has been previously removed, a modification of the operation introduced by ADAMS FROST. ELSCHNIG and his

pupil WALDSTEIN prefer to use spheres made of elder pith for such purposes, on the ground that the interstices between the fibres become filled with granulation tissue.

WHARTON has published statistics of 50 cases of extraction of particles of metal from the interior of the eye. The ring magnet, introduced by MELLINGER, to replace HAAB'S, VOLKMANN'S, and other giant magnets for the extraction of magnetisable foreign bodies, has been criticised by various surgeons. It has been adopted by PERCIVAL at Newcastleon-Tyne, who points out the disadvantage of the upright posture of the patient—a criticism which applies to the older form of HAAB'S magnet. SCHIRMER cites other disadvantages, and it is doubtful whether it will succeed in replacing its rivals.

Opportunity was afforded ophthalmic surgeons for seeing and handling new instruments for diagnosis and treatment at the London Ophthalmic Exhibition held in March. This purely trade exhibition serves a distinctly useful purpose, and its success will doubtless ensure its annual repetition.

Literature.

The past year has not been distinguished by the publication of any book of outstanding merit in ophthalmology. The German handbook by various authors, edited by Professor AXENFELD, though good in parts, is not likely to displace those already in the field. The exhaustive treatise issued as the second edition of the handbook-a strange misnomer!-by GRARFE and SAEMISCH is still far from completion after a spasmodic course extending over more than ten years. In point of time the French Encyclopædia. edited by Professors LAGRANGE and VALUDE, easily outstrips the rival German publication. Begun in 1903, it is rapidly approaching completion. It is not so exhaustive as the GRAEFE-SAEMISCH handbook, but both occupy useful places in ophthalmic literature; neither can be disregarded by ophthalmologists. As a work of reference the German treatise is much superior. Professors WILBRAND and SAENGER continue to issue volumes of their monumental "Neurology of the Eye," a work indispensable both to neurologists and ophthalmologists, but marred by a tendency to diffuseness and the inclusion of matter generally regarded as extraneous to the subject.

DENTAL SURGERY.

Perhaps the most interesting feature to record in the year just closing is the jubilee of the institution by the Royal College of Surgeons of England of the Diploma of Licentiate in Dental Surgery. To celebrate this event, the Council of the Royal College entertained at a dinner a large number of distinguished members of the dental profession on Dec. 2nd. The bond between the dental profession and the Royal College of Surgeons has been further strengthened by the transference to the latter body of the unique collection of specimens forming the museum of the Odontological Section of the Royal Society of Medicine.

The principal subjects which have attracted the attention of the dental profession during the past year are the administration of anæsthetics by dental practitioners and the question of State service of dentistry. The latter question was very ably dealt with in a paper by Mr. LAWSON DODD. In reviewing the question of the policy of the profession with regard to the work of preventive dentistry, he states that it is clear that the first aim should be the extension and multiplication of the facilities for the care of the teeth to the mass of the population, and especially to the elementary school children, and he favours, like others, the establishment of dental clinics. In Germany the authorities are already acting on these lines and in no less than 50 of

¹ British Dental Journal, June, 1909.

the cities and towns dental clinics have already been established with most excellent results. The Cambridge clinic, which was the first to be established in this country, has already accomplished most useful work.

The administration of anæsthetics by dental practitioners has been vigorously discussed during the year. The Bill promoted in the early part of this year, which strove to prevent any but fully qualified medical men from administering anæsthetics, was met by strenuous opposition on the part of dental surgeons, whose point of view has now been definitely accepted by the General Medical Council. It is interesting to note in connexion with this question that the Royal College of Surgeons of England have during the year decided that in future all candidates for the Licence in Dental Surgery shall undergo a course of instruction in the practical administration of anæsthetics used in

An International Dental Congress was held in Berlin in the month of August. Over 2000 people were present, and the Congress proved of great scientific value.

Unfortunately, the list of deaths to be recorded is a long one. In the early part of the year Mr. T. H. G. HARDING passed away. He was one of the first students to enter the Royal Dental Hospital, and for some years served on the staff of the hospital. The dental profession in Ireland has been robbed of one of its most distinguished members by the death of Dr. R. T. SLACK. Commencing his professional life as a physician, he was early overtaken by deafness. He subsequently studied dentistry, and with others formed the Dental Hospital in Dublin. We have also to record the death of Mr. BREWARD NEALE, a Past President of the British Dental Association, and of Mr. A. W. HARLAN of Chicago, well known to the dental profession in this country by his many contributions to current literature. He founded the Dental Review in 1887, and was secretarygeneral to the Second International Dental Congress of Chicago. The death of SAMUEL LEE RYMER has removed from our midst one of the few remaining practitioners who took part in the controversy in the early days between those who favoured a dental diploma being granted by the Royal College of Surgeons and those who were in favour of a separate college of dentists.

Papers.

One of the most valuable papers published during the year was that by Mr. ASHLEY DENSHAM, 2 entitled, "A Review of the Progress of Dental Science and Literature from the Earliest Ages." According to this author the earliest references to odontology are to be found in Egyptian times, and a large number of dental diseases are mentioned in the "Ebers Papyri." These records were commenced about 3700 B.C. and ended in 1550 B.C. In the paper is a résumé of the accounts given by HIPPOCRATES of dental and oral diseases, and the writer dwells very fully on the documentary evidence that dentistry was practised amongst the Romans. The paper, as we have remarked, is a most valuable contribution to the history of dentistry. Another paper 3 bearing on the rise and progress of dentistry was read by Mr. THEODORE SHENNEN. This author dealt with the operative side of dentistry and illustrated his remarks with pictures of instruments taken from various museums.

In an address before the International Dental Congress Mr. J. H. MUMMERY ' gave a very lucid account of Professor MILLER'S contributions to dental science, dwelling more especially upon his experimental investigations on caries and erosion of the teeth and also his investigations into the question of immunity from caries.

In a paper before the International Medical Congress in Budapest Mr. KENNETH W. GOADBY stated that with regard to the etiology of dental caries he has found that in mouths where dental caries is not present organisms capable of fermenting lactose are less frequently present than in those in which caries is present. In mouths where caries is present the lactose fermenters are invariably present, a point which he thinks must have a bearing on the etiology of

In a communication on the eruption of the teeth Mr. W. W. JAMES 5 drew attention to the intimate connexion, which exists between the developing tooth and the oral epithelium. The chief function of this band of epithelium, he considers, is to guide the tooth to its position in the gum, the path of eruption of the tooth being prepared by degeneration of the epithelium. The tissues, which are apparently very dense over the tooth, become loosened and rarefied by the ramifications of the epithelium, and partly by the changes in the zone of epithelium. Mr. JAMES inclines to the view that the growth of the teeth plays an important part in the process of eruption, but he does not consider that it is sufficient to account for the whole process.

Mr. HOPEWELL-SMITH, 6 under the title of "Some Leaves from a Pathological Notebook," gives an account of several cases of pathological interest. In one case of erosion which is very fully described he considers that the lesion was due to faulty metabolism of the gingival labial tissues. Under the title of "A Case of Infective Disease of the Jaws associated with the Absorption of the Teeth,"7 this author gives a detailed account of some curious pathological changes affecting the molar teeth of an adult.

Mr. H. P. PICKERILL 8 has given the results of his experimental investigation into the antiseptic value of filling materials and has shown that the two filling materials which possess the greatest antiseptic properties are copper amalgam and oxysulphate of zinc. Mr. H. SIMMS 9 has also reported his experimental investigations into the action of formalin and has shown that formalin is a most valuable asset in the treatment of septic conditions of the teeth. Many papers have appeared on translucent cements, and there is very little doubt that this material has proved a useful adjunct to the fillings already used. It is, however, open to considerable improvement.

The indifferent results which may follow the extraction of teeth in process of regulation have been referred to by Mr. A. C. LOCKETT. 10 His paper is well illustrated and is certainly worthy of the attention of those who incline to the view that extraction is the best remedy for crowded conditions of the teeth.

In the domain of prosthetic dentistry Mr. D. M SHAW 11 has drawn attention to the question of swaging by hammer and the press. This paper is a good example of the way in which dental questions are now being treated and discussed on scientific lines.

A case in which a misplaced lower third molar was situated in the ascending ramus of the mandible near the sigmoid notch was reported by Mr. J. J. Andrews. 12 Suppuration had occurred in the tooth sac, and it was only by means of radiography that its presence was noticed.

Proceedings of the Royal Society of Medicine, Odontological Section, vol. ii., April, 1909.
 Dental Proceedings, July, 1909.
 British Dental Journal, Oct. 15th, 1909.

 ⁵ Proceedings of the Royal Society of Medicine, Odontological Section, vol. ii., June, 1909.
 6 British Dental Journal, Sept. 1st, 1909.
 7 Proceedings of the Royal Society of Medicine, Odontological Section, vol. iii., November, 1909.
 8 British Dental Journal, vol. xxx., p. 22.
 9 Proceedings of the Royal Society of Medicine, Odontological Section, vol. ii. p. 90

vol. ii., p. 99.

Dental Proceedings, June, 1909.
 Ibid., May, 1909.
 British Dental Journal, April, 1909.

Literature.

Of the new books published during the year attention may be drawn to "An Atlas of Skiagrams Illustrating Development of the Teeth," by Professor J. SYMINGTON and Mr. J. C. RANKIN. This is the first effort made to deal with the question of development of the teeth by means of radiography. and the method adopted holds out every prospect of success. A work worthy of attention is "Anatomie de la Bouche et des Dents," by Dr. DIEULEFE and Dr. HERPIN. It is interest. ing to note that these authors describe the torus palatinus as the "torus palatinus sagittalis," and they describe two forms, the one long and narrow, and the other wide anteriorly and posteriorly. They consider that it is a growth of progressive nature and therefore disagree with the view held by some anatomists that it is a racial characteristic. A useful work on Operative Dentistry, by various authors, has been published in America under the editorship of C. N. JOHNSON. Other works worthy of notice are :- "Our Teeth, How Built Up, How Destroyed, How Preserved," Mr. R. D. PEDLEY and Mr. F. HARRISON; "Dental Surgery Notes," Mr. E. B. DOWSETT; "An Atlas of Dental Extraction," Mr. E. Wallis; and "The Principles and Practice of Operative Dentistry," by Mr. J. L. MARSHALL (third edition).

AN.ESTHETICS.

Legal Aspects of Anæsthesia.

The advisability of securing legislative enactment regulating the use of anæsthetics has been discussed at some length in the columns of THE LANCET and elsewhere. It was pointed out at meetings held by the Medico-Legal Society that the public at present are not protected from unqualified and ignorant persons who undertake the responsible duties of an anæsthetist. Deaths both from the use of general and local anæsthetics have occurred in such circumstances Several Anæsthetics Bills have been promoted which, while differing in detail, have all agreed in making it a penal offence for unqualified persons to give anæsthetics, except in cases of emergency. It has been also urged that every death under an ansisthetic shall be notified to a coroner, and medical men should be forbidden to certify the cause of death until an inquest has been held. The chief ground of controversy has been whether or not dentists having no medical qualification should be exempted from such penal clauses. The necessity for more efficient education in anæsthetics and making it compulsory that some instruction in anæsthetics should be given before granting a diploma to practise has been strongly urged. Meetings in the Section of Anæsthetics of the Royal Society of Medicine 1 and the Medical Society,2 reports of which have appeared in our columns, have been held, at which this subject has been considered. At these discussions the same lack of unanimity was revealed which has been shown in the letters bearing upon this question, which have appeared in the correspondence columns of THE LANCET and elsewhere. A Committee of the General Medical Council has reported to that body upon the proposed legislation, and the Council on Nov. 27th recommended that the conclusions appended should be transmitted to the Lord President of the Privy Council: (1) That the Council deal with the educational part of the matter by "recommendations" to the licensing bodies and deprecate further legal enactment; (2) that it is desirable that the use of anæsthetics be restricted to medically qualified persons, but that dentists be allowed to employ certain anæsthetics which are to be scheduled; and (3) that it is inexpedient to create a new penal offence by rendering it illegal to sign a death certificate when the patient dies

after the use of an anæsthetic. The Council proposes to leave the decision of what constitutes "adequate practical instruction" in the uses of anæsthetics to the licensing bodies. The whole matter remains for the present in a condition of uncertainty as to the ultimate fate of the proposed Anæsthetics Bills. It has been urged as a reason for forbidding signing of death certificates before inquests on persons dying when an anæsthetic has been given that all such deaths should be recorded and be accessible for scientific investigation. This is no doubt important, but, as the President of the General Medical Council has pointed out, notification of these deaths could be made compulsory as in the case of infectious diseases. Sir VICTOR HORSLEY 3 has advanced reasons in favour of dentists administering ansesthetics; and, further, the Royal College of Surgeons of England has enacted that in future all candidates applying for the L.D.S. qualification shall receive adequate instruction in the use of anæsthetics. To meet this res lution the Royal Dental Hospital of London has instituted ints school a chair for a lecturer on anæsthetics, and has appointed an expert anæsthetist to discharge its duties. This school, at the same time, has arranged for the practical training of its students in the use of nitrous oxide gas for dental operations. Germane to this subject is the question of the legal responsibility of medical men as regards the employment of anæsthetics. Mr. A. D. COWBURN, who is atonce a medical man and a barrister-at-law, has dealt with some aspects of the matter in a paper read before the-Medico-Legal Society.4 He points out that, except in casesof gross carelessness or inefficiency, to make medical menliable for legal pains and penalties upon their losing a patientunder an anæsthetic would damage humanity at large. Indeed, it may be said that the general trend of opinion is at present opposed to the promotion of any further legislation which would involve fresh legal embarrassments to medical men and force them unnecessarily into the notoriety of coroners' courts, where they may be subjected to ignorant and unfair treatment.

General Anæsthetics.

ZUR VERTH³ attempts to apply to the human subject the knowledge gained by Dr. ZEIGLER'S experiments on rabbits and the methods introduced in Professor von BIER'S clinic by Dr. KLAPP. If the circulation is limited by tight bandaging of the limbs the amount of anæsthetic required to produce surgical narcosis is lessened and its danger proportionately diminished. This argument is, however, open to discussion, as our present knowledge enables us to say that the tissues of the body are damaged not by the actual quantity of anæsthetic so much as by the height of its tension in the blood and the tissues and by the concomitant cutting off of oxygen.

Dr. CRILE compares nitrous oxide and oxygen in general surgery with ether, and extols its use as less injurious to the recuperative powers of the tissues. Mr. J. F. TREWBY discusses the causes of obstruction to respiration during the use of continuous "gas" anæsthesia. He points out that the oro-pharyngeal aperture is always obliterated before the naso-pharyngeal, and that even moderate cyanosis causes overdistension of the veins of the neck and of the tongue and may lead to serious consequences.

Chloroform.

Dr. PAUL M. CHAPMAN⁸ has recorded a further series of cases in which he has successfully used Dubois's chloroform inhaler, which limits the percentage to 2. His experience

Brit. Med. Jour., Oct. 23rd.
 The Lancet, May 8th, 1909, p. 1325.
 Münchener Medicinische Wochenschrift, No. 46.
 Cleveland Medical Journal, June.
 Brit. Med. Jour., July 24th.
 The Lancet, Jan. 9th, p. 91.

Proceedings of the Royal Society of Medicine, January, pp. 37-47.
THE LANGET, Oct. 30th, p. 1283.

confirms that of all others who have adopted dosimetric chloroform methods, and is that perfect and safe narcosis can only be attained when some regulating inhaler is employed. Dr. N. H. Alcock, who has introduced an inhaler which is stated to give accurate percentages of chloroform, discusses the whole question of dosimetry in a fair and useful manner, and comes to the conclusion that the percentage method is the best, although he transcends the 2 per cent. limit and advises 2.5 per cent. or even 3 per cent. being used during the induction of anæsthesia. Although the paper fails to give full credit to the early workers in the field of dosimetric chloroformisation, it is of especial value as confirming what was proved by SNOW, PAUL BERT, and the Special Chloroform Committee of the British Medical Association. The use of such percentages as 2.5 and 3 during the induction period is rightly said to be dangerous unless adopted at the end of the second degree of narcosis, and then only with the utmost caution. Dr. ALCOCK emphasises the importance of reckoning with the unknown necessities of the patient under the adverse conditions incident to the surgical operating theatre, and makes out a strong case in favour of the use of a rigid percentage administration, even when such conditions exist. Many of the phenomena to which he refers as being somewhat bewildering are in fact recognised by anæsthetists as fairly common and are now explicable by the exhaustive work of EMBLEY and MARTIN as being vagal effects, and as such fraught with the utmost danger unless the strength of the vapour inhaled is kept at or below 2 per cent. No reference to these experiments apparently falls within the scope of Dr. Alcock's paper.

Shook during Anæsthesia: Heart Massage.

The treatment, prophylactic as well as remedial, was the subject of a discussion opened by Dr. DUDLEY BUXTON 10 before the Section of Anæsthetics of the Royal Society of Medicine. He pointed out that shock arose through lowered blood pressure and he dealt with the causes of this. Chloroform in large doses or high percentages lowers blood pressure through its action on either the nerve centres or heart muscle. Loss of blood, the proceedings of surgery, and ultimately inadequate oxygen supply lead to the same result. Adequate but low percentages of chloroform with the constant use of oxygen and attention to posture and maintenance of body temperature had in his practice greatly lessened shock as an after-effect of chloroform inhalation during grave surgical operations. Although this method has not been successful in many of the reported cases its value has been proved. Dr. V. B. ORR¹¹ contributed a valuable paper epitomising our knowledge of the subject to the proceedings of the Royal Society of Medicine, Section of Anæsthetics. He further details a successful case, and a similar recovery due to heart massage is narrated by Dr. E. H. STARLING. In the discussion upon the subject emphasis was justly laid by DUDLEY BUXTON upon the importance of differentiating between the various causes of heart failure and the early adoption in suitable cases of heart massage. Lectures dealing with

Artificial Respiration

have appeared in our columns by Dr. ARTHUR KEITH. 12 Although mainly directed to the question of resuscitating the drowned, much of what is said is applicable to forced respiration required in failure of respiration under anæsthetics. The value of the Schäfer method is recognised, although Dr. KEITH does not regard it as free from danger in rough hands.

Peroral Intubation

by Kuhn's method 13 supplies a valuable addition to the

armamentarium of the anæsthetist. Cases arise which are difficult to tracheotomise without loss of time, and for these and others when the venous hæmorrhage, due to cyanosis, offers especial dangers peroral intubation is most useful. It is also a far less serious procedure quâ sequelæ than a hasty operation upon the larynx or trachea. The dangers of anæmia in connexion with chloroform are dealt with by Dr. R. T. SUTHERLAND in the Intercolonial Medical Journal " and in our columns. 15

Ether.

In the communications upon this anæsthetic which have appeared during the year fresh advocates for a dosage and drop method have come forward. Dr. Boldt 16 inveighs against the indiscriminate use of strychnine in connexion with its administration; Dr. M. F. GOLDBERGER 17 extols spraying ethyl chloride and ether upon gauze covered by towelling fixed in a wire mask; and an editorial article of great value 18 reviews our knowledge of the uses of the gas and ether sequence and advises morphine and atropine to be given before the anæsthetic to lessen the amount required and to minimise the secretion from the mouth and lungs. The work of Dr. J. J. A. VAN KAATHOVEN, of Miss ALICE MACGRAW, and of A. OTTE 19 deserves attention. Dr. B. WRIGHT's research on "ether pneumonia" at the Johns Hopkins Hospital and the conclusions of R. REYBURN and C. RITTER all point to the fact that the allegations against ether are in fact only true when excessive and undue quantities of the anæsthetic are inhaled.

Scopolamine and Morphine.

Sir J. HALLIDAY CROOM 20 has given his experience of this method of obtaining analgesia during labour, but concerning the whole matter further information will be found in the Obstetrical Section of this revue. JOSEL A. BERNUTI 21 gives details of 600 cases. E. ZADRO 22 publishes his experience of 770 cases in which these drugs were injected before a general anæsthetic was employed. By employing very small doses ZADRO considers the method can be rendered safer, and its use, he avers, minimises the dangers consecutive upon prolonged operations upon patients under general anæsthetics, since less is required and less stimulation of the secreting glands occurs.

Delayed Poisoning following Chloroform Inhalation.

Two important researches have been undertaken to elucidate the effects of inhaling large and repeated doses of chloroform. Dr. John Howland and Dr. A. N. RICHARDS have investigated the question of "The Metabolism and Pathology of Delayed Chloroform Poisoning."23 After reviewing the literature they give details of their own research, which is really one involving the use of considerable quantities of chloroform, and no adequate attempt was made to observe whether pathological changes follow the employment c: chloroform when given in such a manner that only enough is inhaled to induce and maintain anæsthesia. This in no way detracts from the great value of the work Dr. HOWLAND and Dr. RICHARDS have done, but invalidates any application ef their conclusions beyond the definite state of poisoning by chloroform. Their experiments supply a strong reason for restricting the quantity of chloroform given, but do no furnish proof that chloroform, as such, necessarily cause the serious toxic conditions which they describe.

Brit. Med. Jour., Feb. 6th, p. 325.
 THE LANCET, March 27th, 1909.
 THE LANCET, Nov. 27th, 1909.
 THE LANCET, March 18th (p. 745), 20th (p. 825), and 27th (p. 895).
 THE LANCET, Jan. 23rd, p. 251.

¹⁴ Intercolonial Medical Journal, Jan. 25th.

¹⁴ Intercolonial Medical Journal, Jan. 25th.

15 THE LANCET, May 22nd, p. 1467.

16 Medical Record, New York, May 29th.

17 International Journal of Surgery, March.

18 Therapeutical Gazette, January.

19 Ibid., April.

20 THE LANCET, May 22nd, p. 1459, and Journal of Obstetrics and Gynacology of the British Empire, July.

21 Medicinische Klinik, April 4th and 11th.

22 Wiener Klinische Wochenschrift, April 1st.

23 Journal of Experimental Medicine, New York, March, pp. 344-7-

conclude that death occurred by acid intoxication or by the accumulation of products (amino-acids) of cell digestion, nor solely as a result of the excessive amount of protein lost—i.e., of tissue disintegrated. As they point out, starvation will produce as great a loss of protein and yet not prove fatal. "We are driven," they say, "to the quite indefinite and unsatisfactory view that death is due to the presence of toxic substances of an unknown nature" due to abnormal metabolism or failure on the part of the organism to neutralise toxic substances normally formed. They describe in careful detail the pathological changes found in the hepatic, lobules, the heart, and muscular tissues. Dr. G. H. WHIPPLE and Dr. J. A. Sperry 21 communicate a similar research upon this subject, finding that the symptoms of overdosing with chloroform in dogs are quite similar to those observed in man. The pathological lesions described are corroborative of those given by Dr. HOWLAND and Dr. RICHARDS, who point out that the pathological lesions described are by no means constant. Although patients are constantly inhaling unmeasured and unstinted quantities of chloroform, yet a very small percentage show even the slightest symptom—albuminuria, bilious urine, and so on-pointing to chloroform poisoning. The same symptoms and pathological changes have been recorded also in cases when chloroform has not been inhaled, so that we are compelled to believe there must be many factors, as yet unrecognised, active in the pathogenesis of this metabolic perversion. Dr. M. S. PEMBREY and Dr. E. I. SPRIGGS,25 in a paper dealing with the relation of acidosis to the carbon dioxide of the blood in diabetic coma, throw a sidelight upon acidosis which occasionally exists among the symptoms grouped under the misleading title of delayed chloroform poisoning. We know that the normal carbondioxide excretion is affected in chloroform poisoning and that that toxemia commonly is associated with glycosuria, but how far these pathological similarities can be admitted as evidence of a causal nexus is at present uncertain. Three deaths associated with chloroform poisoning are recorded 26 by Dr. T. C. SOMERVILLE; they are of the usual type, but with the exception of the first patient the surgical procedure may have been a factor in the case. A further alleged instance of delayed poisoning after chloroform is reported in our columns by Dr. A. A. WEIR. 27 Vomiting was absent in this case. Recovery under a mixed treatment of alkalies and glucose ensued. A point about the case was that the boy had taken chloroform upon a previous occasion without detriment. An extremely interesting paper upon acid intoxication by Dr. T. G. MOORHEAD 25 points out that failure in the metabolism is not always due to carbohydrate starvation, the factor upon the importance of which von Noorden insisted, but may be due to toxins generated in the alimentary canal or to a poison of the primary bacterial disease existing in the case. The absence of oxygen, it would appear, must be present as an active cause of the fatty changes in the tissues. VON JAKSCH has classified the conditions in which acid intoxication appears as (1) febrile; (2) diabetes; (3) malignant growths; (4) starvation; (5) certain psychoses; (6) dietetic; and (7) post-anæsthetic. Under the last heading it is important to recognise the possible coincidence of starvation and undue deprivation of oxygen. A. SIPPEL 29 has examined the records of 40 articles recording cases of post-operative acidosis, and has found that in them the surgical procedures interfered with the normal progress of the systemic blood current. From this he is led

to believe that the interference with the blood-supply is instrumental in the formation of toxins, and they promote acidosis. It may be noted, he remarks, that ROSENFELD'S researches upon the glycogenic function of the liver indicate that interference with glycogenic production predisposes to imperfect fat metabolism. SIPPEL advises that in all cases the glycogenic capacity of the liver and the amount of urea produced should be examined antecedently to the inhalation, and that before the operation as well as afterwards carbohydrates should be freely given. Dr. T. S. GITHENS deals in a long article 30 with the literature of this subject. He points out the dangers of starvation before operation, and extols the free ingestion of glucose. It must be admitted that the condition called delayed chloroform poisoning has been shown by recent research to be due to many causes, often hard to dissociate; of these, anæsthetics may or may not be an active or at least a determining cause, but the symptoms so often are consequent upon other circumstances and arise without anæsthetics being used that the phrase is misleading and should not be employed.

The Status Lymphaticus and Anæsthetics.

Various causes have contributed to force this subject into great prominence. Several deaths have taken place under anæsthetics, the cause of which was stated to be lymphatism. A prosecution for manslaughter has been undertaken against hairdressers who had employed a substance, tetrachloride of carbon, once used as a general anæsthetic. The lady who was shampooed died, and the defence advanced the view that the fatality was due to status lymphaticus, their contention being supported by the findings at the necropsy and the evidence of an expert pathologist. This view is strongly urged by Mr. R. E. HUMPHRY,³¹ and he advances very cogent reasons. Dr. S. H. DAUKES 32 reports a case of sudden death due to the persistent thymus. The circumstances of the death might have sustained a charge of manslaughter in the absence of a necropsy. The importance of recording such cases is obvious, for had the woman been under an anæsthetic, poisoning or overdosage would probably have been accepted as the cause of death. Mr. W. H. RAW 33 describes a similar case. Dr. DONALD J. MUNRO³¹ discusses the pathology of lymphatism, and points out its clinical characters. He has met with 15 cases which he regards as having been more or less markedly subjects of lymphatism. With nitrous oxide he has found the slightly "lymphatic" patient takes unusually large quantities to become unconscious, but the anæsthesia is very prolonged and profound. We assume that Dr. MUNRO means longer than the extended induction and increased quantity of gas inhaled would account for. He believes some persons who fall into the category covered by the term lymphatism are not rendered anæsthetic by even enormous quantities of nitrous oxide. Mixtures containing chloroform may cause dangerous symptoms, and chloroform is most likely to induce serious sequelæ. Dr. MUNRO'S experience is not in accord with some other observers who have stated that small quantities of general anæsthetics cause unconsciousness in the lymphatic state. He regards ether as less dangerous than chloroform, but admits that HENSLEY has recorded an ether fatality in status lymphaticus; however, severe hæmorrhage appears to have complicated this case. That the anæsthetic is not always fatal is exemplified by the evidence at an inquest upon a child who ultimately died under chloroform in a London hospital.35 This child was said to have undergone ten previous operations under an anæsthetic without mishap.

²⁴ Johns Hopkins Hospital Bulletin, September. See also THE LANCET, Nov. 27th, p. 1608.

25 THE LANCET, June 19th, p. 1741.

<sup>THE LANCET, June 19th, p. 1741.
THE LANCET, July 10th, p. 81.
THE LANCET, Sept. 4th, p. 710.
Practitioner, September, p. 377.
Archiv für Gynäkologie, vol. lxviii., No. 1.</sup>

<sup>Therapeutic Gazette, June.
The LANCET, Dec. 4th, p. 1703.
Brit. Med. Jour., Jan. 2nd, p. 16.
The LANCET, July 10th, p. 99.
The LANCET, Nov. 13th, p. 1469.
Brit. Med. Jour., May 20th, p. 1331.</sup>

Mr. R. E. HUMPHRY 30 has published important communications dealing with status lymphaticus and believes he has met with several undoubted examples of this serious condition. He submits the following symptoms and physical signs as most important in forming a diagnosis in these difficult cases: 1. The existence of a persistent thymus is evidenced by a lowering of the upper border of the superficial cardiac dulness with or without fulness in the episternal notch. As he has pointed out, dulness to percussion over the manubrium is often absent, and if present may be due to other causes than hyperplasia of the thymus. 2. Uniform prominence of the lingual papillæ, especially the circumvallate and the nodules between them and the epiglottis. 3. Symmetrical enlargement of the thyroid. 4. Distant and muffled heart sounds and absence of the defined click usually heard as the valves close; a soft, weak, ill-sustained pulse. 5. Hyperplasia of the faucial, lingual, and pharyngeal tonsils associated with the presence of post-nasal vegetations. The enlargement of the liver and spleen, although confirmatory, is not to be relied upon. Dilatation of the pupils is sometimes present. A further discussion of the subject took place in the Section of Ansesthetics of the Royal Society of Medicine consecutive to the report of a death made by Mr. H. B. GARDNER. 37 There seems little doubt that deaths due to lymphatism while associated with the inhalation of an anæsthetic may be wrongly attributed directly to drug toxemia. Mr. HUMPHRY has pointed out that such fatalities frequently occur during light anæsthesia, either at the commencement of inhalation or at its close, when sutures are being inserted, and are possibly due to excitement, fear, or slight perception of pain, or even to the supervention of womiting. Whether such persons really run a greater risk than others who are poorly developed and suffer from an ill-nourished nervous system and poor circulation seems open to doubt. This was pointed out in the discussion and the practical deduction was made that such persons were more readily overdosed than the normal patient and more intolerant of asphyxial complications. Mr. R. W. S. WALKER records a further case (THE LANCET, Dec. 18th, p. 1816) of sudden death due to status lymphaticus. Operation was postponed on account of the infant's condition, and in the interval the death occurred.

Spinal Analgesia.

It would appear to be impossible at present to arrive at any clear view concerning the safety of this method. Opinions as discordant as they are obviously honest continue to flood the columns of medical literature. It is deplorable that while the whole subject is in a welter of confusion the lay press should be furnished with utterly inaccurate pronouncements about "new anæsthetics" and "perfectly safe procedures" as well as illustrations purporting to depict surgeons performing operations upon patients who have been stovainised and whose faces, we are reminded, are wreathed with smiles. The banality of all this is evident to the medical profession, but the public takes such matters quite seriously and believes the statements without reservation. At a meeting of the Medical Section of the Royal Society of Medicine Professor Jonnesco of Bucharest delivered an address explanatory of his method of securing spinal analgesia. He claimed to be able to produce analgesia from the crown of the head to the soles of the feet. The dangers of high injections are those arising from bulbar paralysis, and this the speaker asserts can be completely removed by simultaneous injection of small

doses of strychnine together with stovaine. His method >> has been described before the German Society of Surgery (Berlin) and the International Society of Surgery (Brussels), in THE LANCET, and at full length in the Clinical Journal by Mr. CANNY RYALL, and more recently by himself in the British Medical Journal. The solutions are prepared at the time of injection and stovaine is preferred, although novocaine also finds favour with M. JONNESCO. dose is varied according to the site of puncturei.e., the high puncture between the first and second dorsal spines, the low puncture between the last dorsal and first lumbar vertebræ. The exact amount of analgesic is determined by the age. The sitting position is adopted for the puncture, followed by the dorsal decubitus, with the head more or less depressed according to the height it is desired to carry the analgesia. M. JONNESCO thinks pricking the cord is harmless; he avers that his method has no contra-indications, and goes so far as to say that general spinal anæsthesia is absolutely safe. He speaks from an experience of 412 cases in which he has employed his new method, although he and his assistants have used spinal injections for a little over a thousand patients. The assertion that the intrathecal injection of minute quantities of strychnine will obviate poisoning of the medullary centres is startling when we recall the most recent study of the pharmacology of strychnine. We recently described a demonstration given by M. JONNESCO at the Seamen's Hospital.39 Three patients were injected, aged 32, 62, and 14. One case was held to be quite successful, and cervical glands were removed, one was partially successful, and one needed chloroform for the performance of the operation. Failure must not be accepted as a proof that the method is valueless, but it may be submitted that it must be considered as a warning against excessive zeal. The number of deaths following the low puncture prove that M. JONNESCO'S statement of the harmlessness of any intrathecal method is not fully justified by the known facts. Mr. McGavin 10 publishes, with Mr. G. Williams, a report on 250 cases in which stovaine-glucose solution was employed. The paper is a model of scientific caution, and although the results given are extremely good the authors are careful to avoid exaggeration and undue generalisation. One death occurred from uramia, and one from heart failure, in which case two injections were made, but these fatalities were considered not to be due to stovaine. Failures numbered 6 per cent., and various complications are recorded, such as sickness, headache, air-hunger, relaxation of the sphincter ani, with some pyrexia. Distinct motor paralysis occurred, as is usual, although M. JONNESCO was understood to affirm that in his high injections sensory rather than motor nerves were affected. It is not a little significant that at both the Surgical Congresses at Paris and Berlin those surgeons who have enjoyed the widest experience did not hesitate to speak of intrathecal injections as fraught with the gravest dangers. both because they so frequently led to the most tragic aftereffects, such as persistent paraplegia, bladder and rectal troubles, and because the death-rate was higher than that involved in the use of general anæsthesia. Thus BRAUN contends that the method exceeds general narcosis in danger. VON BIER, who has reported two deaths, advises the supersession of intrathecal injection by local analgesia, or by intravenous injections by a method noticed below. He also recommends, where it can be suitably employed, that it be associated with the preliminary use of scopolamine and morphine in order to obviate the subjective distress fel;

⁸ THE LANCET, Jan. 9th (p. 133) and Dec. 4th (p. 1703); Journal of Medico-Psychological Association, July, 1909; cf. also THE LANCET,

Dec. 26th, 1908.

M Proceedings of the Royal Society of Medicine, Section of Anasdhetics, December.

THE LANCET, Nov. 27th; Brit. Med. Jour.. Nov. 13th.
 THE LANCET, Nov. 27th, p. 1607.
 Practitioner, vol. lxxxiii...p. 165.
 Zentralblatt für Chirurgie, No. 91.

by the patient. BORCHARDT reports a death, and HOLLÄNDER mentions a case of a healthy subject in whose bony spine the injecting needle was broken, necessitating the performance of a laminectomy in order to remove the impacted fragment. TUFFIER, one of the most enthusiastic advocates of the method, has announced that he has wholly relinquished its use in abdominal sections, and now restricts it to low pelvic operations. HARTMANN, DELBET, and BEURNIER have recorded five deaths, while NÉLATON, GUINARD, REYNIER, and LE DENTU have given a formidable list of accidents and most serious sequelæ. To such evidence it is difficult to reconcile M. JONNESCO'S statement that the method is "absolutely safe." More than one death before operation have been recorded in the press in England alone during the year, so that the wiser and saner course seems to be, while admitting the extreme value of this procedure in suitable cases, to acknowledge its limitations and undoubted dangers. the discussion upon this subject at the annual general meeting of the British Medical Association held this year in Belfast Mr. J. CHIENE reported some successful cases and eulogised the merits of the method, while Mr. A. E. BARKER and Dr. Dudley Buxton pointed out the necessity for caution and less flamboyant praise. Admitting its utility, it was urged that the most experienced had met with a high death-rate and with sequelæ far more serious than had occurred when general anæsthetics were employed. Dr. J. W. STRUTHERS 12 furnishes a useful résumé of the subject and emphasises the fact that most of the advocates, while extolling spinal analgesia because its use is declared to abrogate shock by blocking the conveyance of nerve stimuli up the cord, yet have recorded a considerable number of cases in which collapse has occurred, and others in which more or less heart failure was present.

There is far from unanimity as to which drug is best if cocaine, admittedly most dangerous, is excluded. Dr. C. N. LE Brocq 43 has investigated the pharmacology of this subject and has arrived at the following conclusions. Arranged in order of their toxicity in frogs the analgesics are: alypin, cocaine, stovaine, nirvanine, β -eucaine lactate, tropacocaine, novocaine. They kill by paralysing the respiratory centre. Mammals are affected slightly differently, so that taking cocaine as unit of toxicity, these bo dies stand as follows: alypin, 1.25; nirvanine, 0.714; stovaine, 0.625; tropacocaine, 0.5; novocaine, 0.49; B-eucaine lactate, 0.414. However, some of these drugs are more irritating than others, stovaine, β -eucaine lactate, and tropacocaine being more so than cocaine, novocaine is less irritating, and so, although more toxic than some others, its non-irritating properties place it above them in value. It should be remarked that the toxicity of alypin is denied by some experimenters. P. HARDRUIN met with one death due to bulbar intoxication in 10 cases; K. Borszeky in 300 cases, with 8.7 per cent. failures, 1.3 per cent. incomplete analgesia, and several cases of serious collapse, so serious that he condemns the use of the method outside hospitals. OELSNER in 575 cases had 54 failures, one death possibly due to the anæsthetic, and six cases of serious collapse. BIRNBAUM reports a case of death due to the method, which took place nine days after the injection, and CIMAGLIA and LINDERSTERN mention some most grave sequelæ. Captain J.W. HOUGHTON,44 R.A.M.C., reports 34 successful cases of spinal analgesia practised in Sierra Leone. He used tropacocaine, omitting glucose, as a 5 per cent. solution has a specific gravity of 1.0106 and cerebro-spinal fluid has a specific gravity of 1.007. In two cases the operation had to be completed under chloroform as they were very prolonged, and so exceeded the

time during which the analgesia persisted. He institutes a comparison between tropacocaine and stovaine. Professor HOLLÄNDER in an article in the Deutsche Medizinische Wochensohrift 45 discusses the disadvantages and merits of the the method and reference is made to the maintenance of the tonicity of the intestinal muscle said to be lost after chloroform narcosis. It may be remarked that SHERRINGTON has shown that intestinal muscle is never paralysed by chloroform used in therapeutic doses. In their enthusiasm for new methods many of the advocates appear to overlook the accepted facts in the pharmacology of general anæsthetics. W. THOMASCHEWSKI 46 furnishes particulars of the results obtained in the Military Medical Academy at St. Petersburg: 104 cases—5 per cent. failures, 5 per cent. imperfect analgesia; no serious complications are mentioned, some collapse in one case, and headache with retching occasionally followed, and 60 per cent. showed transient albuminuria. Tropacocaine was employed, the dose varying between 0.05 and 0.09 gramme, and the operations were only on the pelvis and below. The cases were carefully selected. AVRAMESCO of Bucharest 47 points out that the aim of rachistovainisation is to anæsthetise the roots of the nerves and not the cord, and he describes the necessary technique. Mr. H. TYRRELL GRAY has described 48 his experience in 200 cases of spinal analgesia at Great Ormond-street Hospital for Children. He speaks in warm praise of the method for children, urging that its adoption has made surgical results more favourable. The paper supplies valuable information. The writer appears to accept a less gloomy view of the dangers of spinal injection in the case of children than is usually held. No death due entirely to stovaine occurred in the series here recorded. There is, however, a report 49 of an inquest on a fatality at this hospital which occurred under spinal analgesia. The infant was 16 months old and stovaine admittedly produced respiratory failure. An instructive table of the complications and sequelæ is furnished in Mr. GRAY's paper in our columns. Although he is greatly in favour of the procedure, he has taken obvious pains to present all aspects of the method he has employed and has succeeded in presenting a strong case to support his contentions. The actual number of cases is too small to establish the safety of the method, which at present seems to have a terribly high mortality. As was hinted at the discussion upon the subject at Belfast, to institute any useful comparison between the safety of spinal analgesic methods and that of general anæsthesia we must be careful to select as efficient exponents of chloroform anæsthesia as are those who adopt the intrathecal injection method.

Intravenous Injection: Local Analgesia.

Professor BIER'S 50 recognition of the dangers of spinal analgesia has led him to supplement local analgesia by a method of intravenous injection with inclusion of the analgesic within a circumscribed area by means of constricting bands. The limb is exsanguined by Esmarch's tourniquet, two rubber bandages are placed one on each side of the site of operation, a superficial vein is opened under local analgesia, and the analgesic selected is slowly injected into the vein. Novocaine with adrenalin is employed, and in the case of nervous persons its use is preceded by the injection of scopolamine and morphine. Dr. J. M. HILZROT 51 has tried this method with success and regards it as superior to the usual infiltration analgesia. Dr. C. M. PAGE and Dr. S. G. MACDONALD 52 describe the technique and cite nine

 ⁴⁸ Edinburgh Medical Journal, September.
 43 Brit. Med. Jour., March 27th.
 44 Journal of the Royal Army Medical Corps, October

⁴⁵ Quoted in THE LANCET, Feb. 6th, p. 433 45 Quoted in The Lancer, Feb. 6th, p. 433.
46 Deutsche Medizinische Wochenschrift, Dec. 18th, 1908.
47 The Lancer, Feb. 27th, p. 637.
48 THE Lancer, Sept. 25th, p. 913, and Oct. 2nd, p. 991.
49 Brit. Med. Jour, vol. ii., p. 578.
50 THE Lancer, April 3rd, p. 1022.
51 Annals of Surgery, October.
52 THE Lancer, Oct. 16th, p. 1135.
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cases of its successful employment. W. A. V. OPPEL 53 has performed experiments to ascertain the toxicity of cocaine when injected into the arterial circulation, and concludes that the danger varies inversely to the width of the capillary bed. Thus the lethal dose in the aorta is twice that of the femoral artery, and eight to ten times that of the superior vena cava. Without giving definite indications for the use of the method, he considers it may have some, although a narrow field of, utility. C. RITTER'S 54 experiments upon the production of anæsthesia by intravenous injections, although not as yet of practical application to the surgery of man, are of interest. 10 cubic centimetres of a 1 per cent. cocaine solution injected into a superficial vein of a dog produces complete analgesia with muscular relaxation persisting for from 15 to 30 minutes.

Professor BRAUN 55 gives an important article on the use of local anæsthetics in hospital practice. In the service of R. H. ZWICKEN, of 1529 operations 398 were done under local analgesia, novocaine and suprarenin being employed.

When we say that this outline of the work which has been recorded during the year concerning local analgesia is necessarily not perfect, it will be gathered that the subject has been reinstated into a position of primary importance.

PUBLIC HEALTH.

There is the semblance of a paradox surrounding the statement that the greatest progress in the public health world during 1909 has been made outside its immediate limits, but the position can be expressed in another and less paradoxical fashion by saying that during the past year the confines of public health have been in actual practice so much extended that the extensions threaten for the moment to absorb and dominate the whole. It is as if a borough, say, with a population of 100,000 had so extended its limits as to comprise a total population of a quarter of a million, or as if the flood-gates of a river had been opened so wide that the precise contour of the main stream below had for a time been rendered difficult of determination. responsibilities and duties of medical officers of health have undergone great extension with successive legislative enactments, the fact still remains that a large proportion of the annual reports of the average medical officers of health is taken up with considerations as regards certain of the infectious diseases, whereas but a small section is devoted to the general well-being of the population. And thus, regarding the Report of the Royal Commission on Poor-law as being concerned with future developments only, it comes about that by far the more important public health event of the year 1909 has been

The Medical Inspection of School Children.

From the several more or less illustrative annual reports of school medical officers which we have from time to time noticed in our columns it will have been seen what an excellent start has been made owing to the tactful attitude of the Board of Education and the law-abiding character of the English people. In some instances the beginning has been but small and delayed, but, generally speaking, the local education authorities have thrown themselves into the work with a zeal which is of happy augury for future developments. No very hard and fast routine practice has been adopted as regards the appointment of the officers who carry out medical inspection. In some cases the work is being actually performed by medical officers of health, in others the medical officer of health acts as the supervising official, while the actual work of inspection is performed by specially

35 Beitrage zur Klinischen Chirurgie, Band lxii., Heft 3.

appointed medical officers or by the district medical officers of health. In other cases, again, the medical officers of health have been entirely excluded from both the supervisory and inspectorial duties. The most satisfactory method is probably that by means of which the medical officer of health acts as the supervising authority, as it is by this means that there is most likely to be proper coordination and cooperation between the health authorities. But in some cases where a whole-time medical officer of health can be obtained by fusing together several appointments there is obvious advantage in having the actual inspectorial work carried out by the medical officer of health. In fact, the medical inspection of school children can be made use of for increasing the number of whole-time medical officers of health. Several valuable memoranda have been issued by the Board of Education during 1909, and amongst them may be specifically mentioned an outline scheme for teaching hygiene and temperance to the scholars attending public elementary schools, and a joint memorandum by the medical officers of the Local Government Board and Board of Education upon administrative measures, which we noticed in our columns on Nov. 22nd.

The Problem of the Medical Treatment of School Children.

When the medical inspection of school children was begun the question of the treatment of the affected children, especially in rural districts, seemed an almost insoluble one. But experience is fortunately tending to show that after all the problem may not prove very difficult if full advantage be taken of existing institutions and if the principle of coördinating all the possible channels of assistance be properly held in view.

Although the bulk of the children in whom some defect is discovered are not at present treated, the defects are being dealt with in a fashion which goes far to warrant the conclusion that in the not very distant future the majority of the cases will obtain treatment in some fashion or another. Already general practitioners are accounting for a considerable number of the cases, while the hospitals of provincial towns are being found not unwilling to deal with cases occurring in the neighbourhood of the towns. In London the London County Council is receiving more assistance from the hospitals than was at one time anticipated. In certain instances school clinics are being provided, and the now very general provision of a school nurse is enabling pressure from time to time to be put upon neglectful parents and minor ailments to be dealt with. In certain districts glasses are being arranged for at a cheap rate, and it is found that under these conditions the parents are less slow to provide them for their children than when the usual rates obtain.

We may here recall the fact, which we announced in our issue of Dec. 4th, that as the result of correspondence between the Havant board of guardians and the Local Government Board the guardians have fixed a fee of £2 for the operative treatment of enlarged tonsils and adenoids by the district medical officer in the Havant union.

The Reports of the Poor-law Commission.

In its potential aspects, this report, looking now on the two as one, must be regarded as of first-class importance from a public health point of view, seeing that one of its incidental objects is to facilitate the early treatment of disease, and thus to prevent, so far as practicable, the prolonged and often fatal illnesses which result from neglect of medical advice. We have already dealt with this classical report and its various appendices in a series of special articles, and for a summary of the Commission's conclusions reference may be made thereto. But it may be pointed out that even if only a portion of the recommendations be acted upon the indirect health effects must be enormous. The prevention of the effects of poverty by

Munchener Medicinische Wochenschrift, No. 35, August 31st.
Berliner Klinische Wochenschrift, Sept. 13th.

insuring against unemployment and by the establishment of labour bureaus and other agencies would in itself be a public health step of the first magnitude; and if there be also brought about the cooperation and coordination of the numerous agencies already engaged in philanthropic work far greater use will be made of all existing institutions than is at present the case. It is, however, of supreme importance that in any legislation or administration procedures based upon the Commission's report the purely philanthropic element shall not bulk too largely. It is easy by the reckless distribution of outdoor relief to create poverty, dependence, and parasitism, as well as to lower the wages of those who are endeavouring to maintain themselves without recourse to the rates; and similarly, the workhouses may be made so attractive that the inducements to return to work may be wanting. But this danger has been appreciated by the Commissioners and to some extent guarded against. In so far as the medical profession is concerned there is much in the report to be grateful for, and tributes of praise have been paid to the self-denying work of district medical officers throughout the country. Still, it is clear on all hands that there is much room for improvement in the existing condition of affairs and the proposal that domiciliary medical assistance is to be conditional upon the maintenance of a healthy dwelling and good habits should, if rigidly enforced, lead to very great improvement in the homes of the poorer classes. And, finally, the fact that the Commission has realised and advised that the Poor-law medical officers of the Local Government Board should be increased in number so as to provide for the periodic inspection of both indoor and outdoor relief arrangements shows that in the future the services of medical men will be much more ntilised than heretofore. The Commissioners have evidently looked with rather wistful eyes at the vast organisation which has existed in Germany for so many years whereby there is compulsory insurance against sickness, invalidity, and old age, but they found the subject too vast to study in detail. This is, we think, a regrettable feature of the report, since the proposed extension of the compulsory system in Germany is in itself proof of the vast success of the measure, and could it have been adopted in this country with modifications little fear would have remained of the danger of the growth of parasitism which is clearly recognised both in the Majority and Minority Reports.

The Control of Imported Foods.

The enormous importance of protecting the 45,000,000 of our population from the introduction of unwholesome food can only be properly understood when it is appreciated that the bulk of our meat-supply alone is received from abroad. Important as is the control of much of our home produce, it is absolutely essential, if we are to be protected from more or less wholesale misrepresentation, that the greatest circumspection should be exercised as regards all our food imports, seeing that many of them reach our shores in such a condition that the determination of their unwholesomeness is an exceedingly difficult matter. Thanks, however, to the powers conferred by the Public Health (Regulations as to Foods) Act, 1907, the Local Government Board has by means of the several valuable Orders which have been issued developed a system of inspection of imported foods which must ultimately render our control of such foods very thorough. These Orders have placed a considerable burden upon the sanitary staffs of our principal seaports, where special inspectors have been appointed to act under the direction of the medical officers of health and to carry out the wide powers which the regulations have conferred upon port sanitary authorities. The important services which these authorities are thus rendering, not only to their own districts, but also to the whole country, deserve | and if the open-air treatment of infectious disease proves a

recognition. Unsound meat and canned goods, and a large variety of other articles have been discovered and refused admission or destroyed; the importation of meat foods treated with preservatives and meat in the form of scraps has been checked, while the regulations have enabled foods which, for one reason or another, require special examination-e.g., pork from China-to be passed only after careful and detailed inspection. It is a tribute to the care with which the regulations have been drafted, and also to the tactful work of the health officers concerned, that food importers themselves are more often the first to recognise their value and to assist the sanitary authorities in their administration. While our present laws governing the inspection of meats, milk, and food generally leave much to be desired, sanitary authorities are evidently finding it practicable to increase their efficiency in these matters under existing powers; and reports from various districts testify to the greater attention which is being devoted to these questions as well as to those relating to adulteration of food and the Sale of Food and Drugs Acts. The Local Government Board has materially contributed to this result during the year by the inquiries of its inspectors of foods, whose reports have contained the results of valuable investigations into the wholesomeness of canned meats, the use of preservatives in cream, the fumigation of foods with formaldehyde, and similar matters. It cannot, however, be said that in respect of rural districts and the smaller urban districts there is, as regards home-grown meat and other foods, such adequate control as could be wished for, and the annual reports of medical officers of health of such districts might profitably contain more information upon this important subject. The disposal of the carcasses of animals which have died a natural death is always a mysterious matter, and more vigilance in this connexion, as also in the visitation of slaughter-houses, is urgently called for. It is regrettable that the agitation or a purer milk-supply has not resulted in the passage of a satisfactory Milk Bill through Parliament, but we must hope that the next report of the Royal Commission on Tuberculosis will galvanise public health authorities to renewed activity.

Isolation Hospitals.

In certain hospitals, and notably in the case of Nottingham, the experiment is being tried of treating cases of infectious disease by the open-air method, and hospital administrators are awaiting the results of experiments upon a sufficiently large scale with great interest. Notwithstanding the attacks made on isolation hospitals within recent years there are no good grounds for believing that the demand on the part of the public for the continued provision of these. institutions, at any rate in urban districts, is likely to undergo material reduction, although there are indications that the rôle of the isolation hospital may in future need some modification.

Investigations into the behaviour of infectious disease in other countries and comparison between different towns at home have compelled epidemiologists to recognise the fact that isolation hospitals do not hold the position as controllers of infectious disease which was at one attributed to them. In addition, the study of epidemics has taught us that infectious disease spreads largely through the media of unrecognised cases, and that consequently it is difficult, if not impracticable, to entirely circumvent infection by dealing with recognised cases alone. But, nevertheless, the isolation hospital has a very definite position in the administrative machinery of public health, and the time is approaching when there will be very few localities without some provision of this kind. Unfortunately, the cost per bed in the case of some of the more elaborate institutions has been so great as to act as a deterrent to small local authorities,

success it may perhaps be possible very materially to reduce the cost of these establishments.

Tuberculosis.

The Royal Commission which is considering the relation of human to bovine tuberculosis is still sitting, and until it finally closes its books and presents its last report we must remain in ignorance as to the amount of human tuberculosis which is to be regarded as being probably of bovine origin. But in the meantime the investigations which are being made in connexion with the milk supplied to our large towns are showing what a very large percentage of such milk contains the tubercle bacillus, and as a consequence how frequently tubercle bacilli of bovine origin are being introduced into the intestinal tract of children as well as of adults. To a certain extent it is to be feared that the absence of a final pronouncement by the Royal Commission referred to is leading to all our efforts being directed solely against the tubercle bacillus contained in the sputum of recognised cases of "open" tuberculosis, and the question which remains for discussion is whether some disappointment may not be realised when critical epidemiologists and statisticians unite in investigation as to the results which have followed efforts made solely on these lines. Already we find critical persons asking whether the escape of the unrecognised cases of tuberculosis may not render it as difficult to demonstrate in the future the result of certain administrative methods in connexion with tuberculosis as it has been to show statistically the effect upon the prevalence of scarlet fever of the operations of notification, disinfection, and isolation. But it is impossible to doubt the value of the work which has for so many years been carried out in certain of our large towns in connexion with tuberculosis.

At the same time a very great deal depends upon how far the administrative machinery which is being devised is utilised towards encouraging persons affected or threatened with pulmonary tuberculosis to seek medical advice at the earliest practicable moment; and encouragement or the reverse in this sense is mixed up in very intimate and dominant fashion with the use or abuse which is made of the knowledge obtained through notification, whether of a voluntary or compulsory character matters little. If such knowledge has the effect of leading to the workers losing their employment or to their finding it difficult to procure fresh employment when they are discharged from sanatoriums administrative measures may defeat their own ends by leading to delay in seeking medical advice as well as to the suppression of the truth in directions which will at once occur to anyone familiar with the difficulties of obtaining a livelihood. This danger has been foreseen and, so far as practicable, discounted by the eminently moderate memorandum of the medical officer of the Local Government Board of England and Wales,1 which, under the heading, "Procedure in Official Investigations," points out that, "above all, the investigators must not pursue inquiries in a manner or give information that may prevent a consumptive patient from continuing to earn his livelihood." It is this sentence which is largely the key to the whole administrative position. The compulsory notification of pauper cases of pulmonary tuberculosis has been in operation during 1909, but it is not until the annual reports of medical officers of health for the past year reach us that any idea of the results can be formed. The experience gained by a few years of this practice should prove of considerable value. Compulsory notification of this disease has also been introduced for a limited period into the city of Glasgow, and the experience of this large population will subsequently be available to compare with that of Sheffield and Bolton.

Useful work has been carried out during the year through

the medium of the Tuberculosis Exhibition of the National Association for the Prevention of Tuberculosis and the conferences held in different parts in connexion with such exhibition.

Sanatoriums for Pulmonary Tuberculosis.

Encouraging progress in the provision of additional accommodation for early cases of pulmonary tuberculosis has been made during 1909, although, so far as we are aware, no local authority has as yet followed the example set by the city of Birmingham and provided an institution on its own account. But other local authorities are watching the Birmingham experiment closely, and when adequate experience as regards the after-results has been acquired they will consider whether the saving of life justifies expenditure in this direction or whether the money may be more usefully spent in improving housing conditions or possibly in the establishment of an antituberculosis dispensary. In the meantime, other local authorities are making experiments on a less ambitious scale by contributing to the funds of existing sanatoriums so as to have a certain number of beds at their disposal, and a similar observation applies to a small number of boards of guardians.

Additions have been made during 1909 to the number of beds at several sanatoriums. The Society for the Prevention and Cure of Consumption in the county of Durham has opened a sanatorium for women at Wolsingham, thus placing to its credit two valuable institutions, the sanatorium for men at Stanhope having for several years done excellent work and to a large extent solved the problem of the provision of a self-supporting sanatorium for the working classes. On the other side of the North of England the Westmorland sanatorium has extended its accommodation so as to provide 52 beds, and, largely through the munificence of Dr. W. S. PAGET-TOMLINSON, who has already done so much for the sanatorium, a home for advanced cases of this disease is, we believe, being provided at a cost of about £5000. This home is to afford accommodation for 20 patients. In the eastern counties a further extension of the children's sanatorium at Holt in Norfolk is, it seems, about to be undertaken. Most of the existing sanatoriums still complain in their annual reports that the cases which they receive are already too advanced when they are admitted, and this same complaint comes both from sanatoriums in connexion with which medical referees are appointed as well as from those There is now a growing possessing no such officers. tendency for the medical superintendents themselves to examine the applicants for admission before they are sent to the sanatorium, a precaution which has, we learn, been adopted in connexion with applicants for admission to King Edward VII. Sanatorium at Midhurst. With the advent of early and suitable cases greater scope is afforded for the exercise of graduated labour amongst the patients. and a great deal of work in this sense is now being undertaken at numerous sanatoriums, the work in some cases being of a nature to fit the patient to obtain other means of livelihood on discharge.

The results of sanatorium treatment cannot, we fear, be accurately assessed until the statistics are presented in such a fashion as to enable the cases of each year to be followed separately throughout succeeding years, and this practice is as yet by no means uniformly adopted. But in the case of the Kelling and the Durham sanatoriums, as well as in certain others, the cases are thus set out, and it is clear that with really early and suitable cases the chances of restoration to work for many years are very great. Critics of these favourable results are wont to suggest that these are the cases which would have recovered in any circumstances; indeed, they would say that in olden times these are the very cases

which would have passed unrecognised until, perchance, the post-mortem table was reached. But although there is theoretically some force in this criticism, we do not think that workers in sanatoriums will be likely to regard it as fairly meeting the facts.

The Housing and Town Planning Act.

We have so recently dealt with this measure in its passage through both Houses of Parliament that orief reference need only now be made to it. The powers which it confers upon the Local Government Board, county councils, and other local authorities are very great, and with these powers wisely administered there should be brought about great improvement in the conditions under which many of the poor are now living, and gradually there should rise up in the environments of existing towns aggregations of houses so arranged as to afford to the occupiers all the essentials of healthy and cheerful living. This enactment will also in effect materially augment the usefulness of county medical officers, who will now have their duties defined for them and possess a sense of security of office. We wonder how long it will be necessary to wait until the same protection is afforded to the district medical officers of health, who, as a matter of fact, need it more than the county officers.

Enterio Fever "Carriers,"

A considerable amount of research work has been carried out in this country during 1909 in connexion with the extremely interesting problem of the so-called "chronic" and "temporary" enteric fever carriers, and two memoranda upon the subject have been issued by the Director-General of the Army Medical Department.2 But we are still very far from knowing the importance of these "carriers" in the causation of either epidemic or endemic enteric fever. The Germans are inclined to attribute a very extensive rôle to these "carriers." and in this country it is clear that occasionally enteric fever convalescents have been responsible for several cases at irregular intervals. It would not seem a very difficult matter to determine what has been the behaviour of enteric fever in towns such as Maidstone, Newport (Isle of Wight), and Worthing since the occurrence of the outbreak of that disease at these places, as presumably the names of all those attacked, as well as the locality of the houses which they have subsequently occupied, could be easily ascertained. Perhaps the medical officers of health of these towns can be induced to investigate the matter. But these "carrier" cases raise some extremely important epidemiological problems apart from the question of the precise amount of enteric fever for which they may be held responsible. It is clear from much of the work done relative to "temporary" carriers that the enteric fever bacilli may be present in large numbers in persons who show no sign of this disease, and this consideration would seem to raise some question as to the pathogenicity of the bacillus itself, and, as Dr. J. C. G. LEDINGHAM has observed, "It may be that we are at the parting of the ways in our conception of The recent finding of the typhoid bacillus in the blood of cases which proved on post-mortem examination to be cases of tuberculosis (BUSSE and others) is perhaps apt to shake our notion of the typhoid bacillus as the causative agent of enteric fever." Events such as these must, as it were, make us pause before we draw inferences as to the influence of these carrier cases, more especially when we are told that perhaps some 3 to 4 per cent. of enteric fever cases are "carriers," that the evidence so far available indicates that "once a carrier always a carrier," and that the several curative agents and methods do not appear materially to affect the situation.

Reflections of this nature suggest the need for the greatest caution in generalising upon an administrative basis upon certain bacteriological findings, and they show the need for the healthy scepticism which was the dominant note of a critical paper read before the Pathological Section of the Royal Society of Medicine by Dr. W. H. Hamer.³ This problem of "carriers" must continue to be investigated not only by the bacteriologist but also by the epidemiologist, and the more frequently the notes of each are compared the less likely shall we be to be led astray.

House Flies as a Medium of Infection.

There has in the past been a good deal of somewhat loose reasoning as to the part which may be played by the domestic fly in promoting the spread of diseases such as enteric fever and diarrhoa, but before it is possible to make any legitimate inferences upon the subject numerous preliminary observations are necessary. This fact has been fully recognised and acted upon by the medical department of the Local Government Board, which during 1909 issued two very helpful memoranda upon the subject. One of these dealt with the methods of distinguishing the more important species of flies found in houses and with the breeding of the common house fly during the winter months, while the second one discussed the lines of investigation to be adopted, the colouring of flies for purposes of identification, and other matters. This investigation, which is being conducted under the general supervision of Dr. S. MONCKTON COPEMAN and with the cooperation of Mr. JEPSON of the British Museum, Professor NUTTALL, and Dr. G. S. GRAHAM-SMITH, as well as with the assistance of several medical officers of health, should eventually afford us an accurate estimate of the amount of disease due to flies, of the means by which the mischief is brought about, and last, but not least, the remedy.

Small-pox.

With the exception of an outbreak in Bristol during the first half of the year, of sporadic cases in different parts of the country, and of occasional ship-borne cases, the country remained practically free from this disease during 1909 in spite of the large increase in the number of exemption certificates. To those who have studied the epidemiology of small-pox, which the public has not, the fact may appeal, but it has to be borne in mind that the presence of a large number of unvaccinated persons does not in itself create small-pox, and that the only real test of the value of vaccination is the manner in which the disease behaves among the vaccinated and unvaccinated when small-pox is present. It is then that amongst children the unvaccinated are stricken and the vaccinated left, and that amongst unrevaccinated adults the severity of the disease is in inverse ratio to the date and thoroughness of the vaccination. If by a stroke of magic the whole population could be rendered susceptible to small-pox there would not, of necessity, follow an outburst of the disease, and therefore then, as now, the unvaccinated might walk unscathed. But if while the population was in this unprotected state an epidemic of small-pox took place the carnage would not improbably be appalling. If, however, the machinery for vaccination were still in existence and the sanitary organisation which to-day obtains were to be utilised to the full, it is probable that the harvest of disease would be less than in former years. The compulsory notification of the disease and the searching out of unrecognised cases, together with the vaccination of all contacts, would doubtless do a great deal to limit the spread of the malady.

The Prevention of Syphilis.

It is difficult to separate the direct and indirect effects of a given disease, as is well illustrated by the confusion which exists in relation to what are termed the primary and secondary causes of death. It is not easy, therefore, to gauge the precise death-roll of a disease such as syphilis, which is not generally regarded as a malady with at all a high fatality rate. But in the Schorstein lecture delivered in October last the lecturer, Professor W. OSLER, painted with the verbal colours which he employs so attractively what may be the real mortality picture of this malady. Although, as the lecturer pointed out, only some 1658 deaths are debited to syphilis in the Registrar-General's last annual report, it may be necessary to raise this figure to over 6000, and thus to elevate syphilis to "sixth place in the hierarchy of diseases due to specific germs." In order to arrive at this total Professor OSLER takes from the statistical Blue-book the 2332 dead from general paralysis, the 584 dead from locomotor ataxia, half at least of the 1983 dead from paraplegia and of the 2279 dead from softening of the brain, as well as, he thinks, a possible fourth of those who pass out under "other diseases of the nervous system."

But to this grand total the lecturer pointed out there must in all probability be added a considerable proportion of those 1140 persons who died in 1907 from aneurysm, an argument which he brought home with convincing clearness by a disussion of the history of aneurysm in the past and by a review of recent work in connexion with the spirochæta of syphilis discovered by SCHAUDINN and the serological investigations of WASSERMANN. Finally, Professor OSLER placed the ravages by death from syphilis at between 6000 to 7000 annually, exclusive of the uncertain number of stillbirths which may be attributed to the same cause, and to these he added "the thousands maimed and killed by the gonococcus-a David among cocci." With the object of reducing this appalling toll Professor OSLER proposes. inter alia, that venereal disease should be grouped with other infectious diseases and every case registered and supervised. But the other steps which he suggests, such as education on sexual matters, a reduction of "the sight of means," and facilities for early and prolonged treatment are, as he clearly recognises himself, more within the realm of practical politics, and possibly our general hospitals might take a greater share in educational propaganda than they have done in the past.

EXOTIC AND TROPICAL DISEASES.

Knowledge respecting exotic and tropical diseases has continued to advance steadily during 1909. At the present time many important researches are being carried out by individual or collective workers, and much light before long is expected to be thrown upon some at least of the more obscure maladies of exotic origin. Already in some of our colonies and dependencies, as well as elsewhere, practical measures, based on previous scientific research, have been put in force with results that are extremely promising. The future of tropical medicine and sanitation seems to be full of hope and encouragement, and more successes in the war against preventable disease in the tropics are confidently expected in the near future. The "conquest of the tropics" for the white race cannot, to all appearances, be much longer delayed. Below we give a brief account of the behaviour of plague, cholera, yellow fever, and other exotic diseases throughout the world during the past year.

Plague in India.

We drew attention in the Annus Medicus for 1908 to the

to say, has been maintained during 1909. Up to the middle of November, the latest figures obtainable at the time of writing, the fatal plague cases in India in 1909 amounted approximately to 125,000. The figures for the first ten months period in 1908 were 135,545, and in 1907 1,100,000. In three provinces, Eastern Bengal and Assam, Baluchistan, and Coorg, no death from plague occurred, and in the North-Western Frontier Province only a single imported fatal case came under notice. The three provinces which had the highest number of plague deaths in 1909 were the same which suffered most in the previous year-namely, the Punjab, Bombay, and the United Provinces of Agra and Ondh.

At the Medical Congress which met at Bombay early in the year an animated discussion took place on the subject of plague. Among the papers read before the Congress may be mentioned the following: Cats as Plague Preventers, by Lieutenant-Colonel Andrew Buchanan, I.M.S.; The Epidemiology of Plague, by Major S. LAMB, I.M.S., Member of the Advisory Committee on Plague Investigation; Antiplague Inoculation, by Major R. F. STANDAGE, I.M.S.; The Recrudescence of Plague, by Major S. BROWNING SMITH, I.M.S.; The Prophylaxis of Plague, by Captain W. GLEN LISTON, I.M.S.; The Carriage of Plague by Sea, by Dr. G. J. BLACKMORE; and the Clinical Significance of Septicæmia in Human Plague, by Dr. N. H. CHOKSY. Among the other experts who took part in the discussion were Major W. W. CLEMESHA, I.M.S., Captain E. F. GORDON TUCKER, I.M.S., and Dr. J. A. TURNER, medical officer of health of the City of Bombay.

Plague in the Far East.

Only scattered cases of plague were reported in the Straits Settlements and in Siam. In French Indo-China the disease was somewhat widely diffused, for there were epidemics in Cambodia, Cochin China, Tonkin, and in the territory of Quang-Tcheou-Wan, which is leased to France by China. Sporadic cases were also certified in Annam. In China plague was epidemic, especially during the first half of the year, in Canton, where it is estimated about 6000 deaths were due to the disease; also at Kang-Thau, Chang Chew, Amoy, and Swatow. In the latter town and district it is calculated that 2500 deaths resulted from plague during the epidemic in the first six months of 1909. Although cases were notified at Hong-Kong in the first nine months of the year the number was comparatively small. There was no outbreak of human plague at Shanghai, but infected rats continued to be found during a considerable portion of the year. Infected rats were also found in Tientsin, though no prevalence of the disease in man was observed. In Formosa plague was epidemic during the first half of 1909, over 1000 cases being certified. In Japan proper plague was prevalent at Kobe more or less throughout the year, and there was also coincident plague among rats. At Osaka and Yokohama some attacks were notified and infected rats were occasionally discovered; as also at Tokyo and Moji, but without the appearance of any human cases at these last-named places.

Plaque in Oceania.

Some sporadic cases of plague occurred during the year in New South Wales at Sydney and Newcastle, and in most of the instances the appearance of human plague was associated with infection of local rats. In Queensland the disease was reported at Mackay, where there was concurrent plague in rats. At Adelaide in South Australia a small group of cases was notified in the early summer; and at Bunbury, a small seaport town in Western Australia, two coloured seamen were reported as suffering from plague in March. In the Hawaiian (or Sandwich) Islands scattered cases of plague occurred at Hilo, Papaikou, and Olaa. These instances were diminution of plague in India. This diminution, we are glad | associated with coincident plague in rats. A single human

case was reported at Honolulu in the person of a Chinaman recently arrived from Hong-Kong.

Plague in America.

There were only two recognised cases of plague in the United States during 1909, both of them occurring in Almeda County in California. The occurrence of these cases is said to have been associated with concurrent plague among the ground squirrels of the locality. In Contra Costa County, also in California, the presence of plague among ground squirrels was bacteriologically proved, but there were no human cases. At Seattle some rats suffering from plague were discovered from time to time during 1909. In South America the disease was widely diffused. In Brazil plague infection was reported during the year at Rio de Janeiro, Bahia, San Luis de Maranhao, Para, and Pernambuco; in Uruguay at Montevideo; and in Chili at Arica, Antofagasta, Iquique, and Magellones. A considerable number of localities in Peru suffered from plague in 1909, including places in the following departments-viz., Arequipa, Cajamarca, Callao, Lambayeque, Libertad, Lima, Moquegua, and Piura. There was an outbreak of plague in the Pescadores islands and at Guayaquil, the capital of Ecuador, and cases were also reported from Babahoyo, Anigra, Tolte, Nisag, and Chunchi. The plague prevalence which was reported at Caracas, the capital of Venezuela, in 1908, did not altogether abate during 1909. A few cases were notified in the island of Trinidad, at Port of Spain, during the summer.

Plague in Africa.

In Egypt the prevalence of plague, which has persisted for the past 11 years, continued during 1909, Alexandria and Port Said being among the towns which suffered; the majority of the cases, however, occurred in the provinces. In July some deaths from this disease were reported in Zanzibar, and in British East Africa at Kisumu and Port Florence. In German East Africa plague broke out at Muansa, where rats were also affected; six other localities had outbreaks among the local rats, but no human cases. The malady was present in Mauritius during most of the year. No plague was reported in South or West Africa during 1909. In Morocco an epidemic suspected to be plague was raging in the early summer at Mequines, a city in the interior, and it is said that hundreds died from the disease. Later in the year a similar outbreak was reported in the neighbourhood of Saffi, to the south of Casablanca. In August several cases of undoubted plague appeared among the Senegalese soldiers in the French camp at Casablanca. In the Azores group, which lie some 900 miles off the west coast of Morocco, the epidemic of plague which began in 1908 continued up to the middle of 1909, when it subsided.

Plague in Europe and the Near East.

On Feb. 1st Dr. THOMAS CARLYLE PARKINSON, who had been engaged in plague research work at the Elstree branch of the Lister Institute, contracted the disease by accidental inoculation, from which he died on Feb. 4th at the early age of 25 years. There was no extension of the infection, this case forming, so far as we are aware, the only instance of human plague which occurred in the United Kingdom during 1909. There was, however, an outbreak of rat plague at Hull during February, limited fortunately to a single dock warehouse; it was soon suppressed by the vigorous measures applied by the authorities, under the direction of Dr. J. W. MASON, the medical officer of health. In Belgium three mild plague cases were landed at Antwerp in April from a ship which was bringing a grain cargo from the River Plate. These cases were associated with plague infection among the ship rats. Two cases alleged to be plague were reported in Holland at Loosduinen in February, but the diagnosis was officially denied. The only other European country in

Russia, where, in the Kirghiz Steppes of the government of Oural, in June and July a small but extremely virulent outbreak was recorded. Plague was reported during the year in several localities in Turkish territory, including Beirut, Alexandretta, Adalia, Jeddah, and Bagdad. A single case occurred at Mecca in January, the person attacked having travelled from Jeddah with the infection upon him. In the Bahrein Islands, off the Arabian shore of the Persian Gulf, cases were notified in May and June; and at Muscat shipborne plague was reported in April. At the Persian port of Bushire an outbreak occurred on a steamer from Bassorah, three persons having died from the disease during the voyage and seven others having been subsequently attacked and treated at the lazaret on shore.

Cholera in Russia.

Cholera continued to be prevalent in Russia during 1909, more especially in St. Petersburg and district. A number of ports in the Baltic Sea were also infected, including Cronstadt, Viborg, Narva, Reval, and Riga. The port and district of Archangel in the White Sea were invaded by the disease, as were also many inland towns and districts in Central and Western Russia. The majority of the grain ports in Southern Russia, which had suffered in 1908, escaped from the ravages of cholera during 1909. Outbreaks were reported at Baku on the Caspian Sea, at several places in Siberia, and at Vladivostock. So far as can be ascertained the total number of cholera attacks notified in Russia up to the end of November, 1909, was about 20,000, and of these nearly 9000 proved fatal. Of this number, over 6000 cases and 2400 deaths occurred in the city of St. Petersburg, where the disease has been epidemic practically without a break for the last 18 months.

Cholera in Europe elsewhere than in Russia.

From Russia cholera was carried on shipboard to certain European ports, including Stockholm, Vardoe (Norway), Elsinore (Denmark), and Rotterdam, but in none except Rotterdam did the infection spread. Several ships arrived at Rotterdam during the autumn from North Russian ports with a cholera case or cases on board, and other vessels pumped out into the harbour water ballast obtained from specifically polluted Russian rivers. In this way the waters of the Maas at Rotterdam became contaminated, and since a number of persons engaged on river craft use this water for domestic purposes some of them contracted cholers. Altogether 34 cases and 15 deaths were recorded in Rotterdam during the autumn. From this port the infection was carried up the numerous canals and waterways into the interior of Holland, scattered cases being notified at Amsterdam, Utrecht, Pernis. Gorinchem, Hoogvliet, Vlaardingen, Middleburg, Breda, Halsteren, Lopik, Hattem, Dordrecht, Tholen, Nithorn, Dirksland, and Jaarsveld. Just over the Dutch border some suspected cases were reported in Belgium territory on board a boat from Utrecht, at Lillo on the banks of the Scheldt, and shortly afterwards an outbreak of cholera comprising 10 cases and 6 deaths occurred at Boom, a town on the River Rupel, a tributary of the Scheldt, ten miles from Antwerp. Cholera was conveyed from Russia by rail over the German border into East Prussia, and other cases occurred along the course of the Memel and other smaller rivers which pass from Russia through East Prussia to the Baltic. Altogether about 33 cases were notified in this German province during the autumn, the places affected including Königsberg, Pokallna, Stoltzenhagen, Tilsit, Russ, Andreischken, Skirwietell, Labiau, Sköpen, Hydekrug, Kurkau, and Nemonien.

Cholera in England.

ship rats. Two cases alleged to be plague were reported in Holland at Loosduinen in February, but the diagnosis was officially denied. The only other European country in which, as far as is known, plague occurred during 1909 was in the Baltic. A sick sailor was landed at the port hospital

where he died, the cause of death being proved by bacteriological examination to be cholera. As evidence that our port authorities are on the alert we may mention that a Russian captain was fined £23 3s., including costs, for allowing persons to land from his ship in the Port of London without leaving their names and the addresses to which they were proceeding. In a similar instance an English captain was fined £10 for a like offence on the arrival of his vessel from Rotterdam.

Cholera in India.

In India, where cholera is always present, the disease was epidemic in a number of localities and more especially in the provinces of Bombay, Bengal, Madras, and Eastern Bengal and Assam, as well as in the native State of Hyderabad. In the city of Bombay the number of cases notified was higher than in the previous year. At Calcutta a very regrettable outbreak occurred at the end of July in the European General Hospital affecting chiefly the European nurses, 13 of whom were attacked within a period of 36 hours, 7 of them dying after an illness which lasted only about 24 hours. A Government inquiry, conducted by Professor M. W. HAFF-KINE, Major W. W. CLEMESHA, I.M.S., and Dr. FREDERICK. T. PEARSE, medical officer of health of the city, showed that the outbreak was due to the handling of milk and other food by two native kitchen servants whose hands at the time of the inquiry were still infected by cholera organisms. One of these men, indeed, proved to be a chronic "carrier" of cholera, and he was passing daily in his stools large quantities of the specific microbes of the disease, although he himself appeared to be in good health.

Cholera in the Far East.

Outbreaks of cholera were reported at Bangkok in Siam, and at Singapore in the Straits Settlements. In Indo-China the disease appeared in Annam, Cambodia, Cochin China, Laos, and Tonkin; and in the Dutch East Indies there were epidemics at Djambi in the island of Sumatra, and at Batavia in the island of Java. In the latter of these places over 2000 fatal cases were certified in the period from July to October. A widespread prevalence of the disease was present in the Philippine Islands, no fewer than 3000 deaths being registered from this cause during the first eight months of the year. Manila did not escape the infection, but the cases reported did not occur in any large numbers.

Yellow Fever in South and Central America.

Yellow fever was prevalent in certain parts of Brazil, more particularly in Para where 121 persons lost their lives from it, and at Bahia where also about as many died from the disease; smaller outbreaks occurred at Manaos and Pernambuco. At Rio de Janeiro, where formerly yellow fever was frequently epidemic, only a single, non-fatal case was notified, and this was presumably an imported instance. In THE LANCET of August 7th we commented upon a report by Dr. RANGEL PESTANA entitled "Comment on Assainit un Pays," being an account of the extinction of yellow fever in Rio de Janeiro, and showing how from an annual average of 1731 deaths from this dangerous malady during a period of 13 years prior to 1903, when measures for the destruction of the stegomyia fasciata were first begun, the fatal cases had fallen to 42 in 1906. 39 in 1907, 4 in 1908, and none in 1909. A similar experience has been shown in Santos where anti-stegomyia measures have been carried out and not a single death from yellow fever has been registered since 1904. Some sporadic cases of this disease occurred during 1909 at Carthagena in the republic of Colombia, at Parimaribo in Dutch Guiana, and at Suddie in British Guiana. At Ancon in the Panama Canal Zone two vessels arrived, each carrying a single case of yellow fever. In this connexion attention may be drawn to a pamphlet on the "Prophylaxis of Yellow Fever," prepared by Dr. G. M. GUITERAS, whose

name is honourably associated with the campaign against this disease, and on which we commented in THE LANCET of June 26th.

At Guayaquil in the Republic of Ecuador yellow fever was epidemic in the first half of 1909, causing about 200 deaths. Among those who lost their lives from the disease was Dr. WILLIAM MARTIN WIGHTMAN, passed assistant surgeon of the Public Health and Marine Hospital Service of the United States, who had been detailed for duty at Guayaquil since April, 1908. In Mexico yellow fever was prevalent in the early months of the year in Vera Cruz, Merida, and other districts. A claim has been advanced by Dr. HAROLD SEIDELIN, professor of bacteriology in the Medical School at Merida, that he has isolated and identified the specific parasite of the disease, which he has found, he says, in the red corpuscles of the blood. He is disposed to classify this parasite among the piroplasmata. Further confirmation of these observations by other competent experts is necessary before they can be accepted, and their presence in the stegomyia will also have to be demonstrated. In the Republic of Venezuela yellow fever outbreaks were reported at Maiquetia and Ciudad Bolivar during the summer months.

Yellow Fever in the West Indies.

After freedom from yellow fever for over 20 years, the island of Barbados experienced an outbreak of the disease at the end of 1908, and from that date to August, 1909, some 87 cases and 37 deaths were recorded. No cases occurred among the visitors to the island or among the foreign seamen, but the outbreak was entirely confined to the native-born Barbadians. Sir RUBERT BOYCE, at the request of the Colonial Office, visited Barbados and the West Indian Islands to advise the local authorities as to measures for preventing the spread of the disease. In THE LANCET of June 26th we drew attention to his recommendations, which were also discussed by him in an address given on July 8th under the auspices of the West Indian Committee in London.

Some scattered cases of yellow fever were reported in the Dutch island of Curaçoa, in Trinidad at Port of Spain, and in the French colony of Martinique at Fort de France. A few cases also occurred in Cuba, but the disease may be said to be practically extinguished in that island. An account of the Cuban measures was presented to the International Medical Congress at Budapest by Professor AGRAMONTE of Havana, in which he claimed that the results had been entirely satisfactory, and that yellow fever had been "stamped out" in Cuba.

Yellow Fever in Europe.

In the Annus Medicus for 1908 we drew attention to the occurrence of yellow fever in France at the Port of St. Nazaire in that year, the infection having been brought on shipboard from Martinique. A similar instance occurred in May, 1909, yellow fever having been brought by the s.s. Lanfrano from Brazil to Portugal. Seven cases, four of them fatal, had occurred on this vessel after leaving Manaos before its arrival at Lisbon, where two of the surviving cases, both German passengers, were landed for treatment at the por. hospital, where each made a good recovery. Fortunately, there was no extension of the disease, all the necessary precautions having been taken. The Lanfrano reached Liverpool on June 3rd, when all on board were found well. Fortunately, when this vessel arrived at Lisbon the weather was comparatively cool, the temperature ranging from 50: to 60° F., so that the conditions for diffusion of the disease were unfavourable; but the result might have been otherwise if the ship had reached Europe during hot weather.

Malta or Mediterranean Fever.

The form of fever caused by the micrococcus melitensis is now said to be practically extinct in the naval and military garrisons of Malta, though it continues to be prevalent among the civil population, many of whom scoff at the simple precaution of boiling goat's milk before consuming it. While the true Malta fever has thus been reduced, there is another, though less severe, form of illness termed the "three days" fever" which is prevalent in the island, as well as in other Mediterranean stations. To investigate this a committee of army surgeons was appointed by P.M.O. Colonel J. G. MACNEECE, R.A.M.C., with the result that the cause was found to be an infection transmitted by the bites of the midge owl (Phlebotomus papatasii) which constitutes a veritable pest in Malta and elsewhere during the hot season. An experiment was made on the person of Lieutenant H. G. GIBSON, R.A.M.C., who volunteered to submit to be bitten by specimens of these insects which eight days previously had fed on a patient during the first day of the disease. A week later Lieutenant GIBSON was seized with the usual symptoms of the three days' fever-vomiting, severe pains in the head, back, and limbs, with rise of temperature lasting three days. Similar experiences had already been reported by Dr. R. Doerr in Bosnia and Herzegovina. The specific organism of the disease, however, has yet to be discovered.

Epidemio Cerebro-spinal Meningitis.

Epidemics of cerebro-spinal meningitis have occurred during 1909 in various parts of America; in France, at Paris and other places in the Department of the Seine, and at Evreux and elsewhere in the Department of the Eure. Other outbreaks have been reported in Switzerland, Italy, and Austria. In Prussia up to the end of October 950 cases had been notified, with 402 deaths, a case-mortality of 42.6 per cent.; in the previous year 1226 cases and 530 deaths were reported, giving a case mortality of 43.2 per cent. It is interesting to mention that in Westphalia, and also at Leyden in the Netherlands, epidemics of what is termed "infantile paralysis" occurred during the year, but whether these outbreaks were related to epidemic cerebro-spinal meningitis it is not possible to say. Something of the same sort is said to have occurred in certain parts of the United States, including Chicago. In Cyprus a widespread prevalence of cerebrospinal meningitis was reported by Dr. G. A. WILLIAMSON, acting chief medical officer of health. Beginning in December, 1908, and extending to the end of May, 1909, no fewer than 1153 cases and 600 deaths were certified, yielding a case mortality of 52 per cent. The disease also occurred in Constantinople and in the Arabian province of Assyr. In Japan, at Yokohama, and other places outbreaks were also reported.

There is a growing opinion that the treatment of this malady by intraspinal injections of anti-meningococcic serum offers the best chance of recovery. The serum of FLEXNER and JOBLING still enjoys a high reputation, especially in America, where it is claimed that the case mortality has been reduced from over 70 to 20 per cent. In Germany Kolle and Wassermann's serum is preferred, and in France a serum prepared at the Pasteur Institute by M. DOPTER, on a principle suggested by M. ROUX, has been recently used with good results. This serum is obtained by immunising horses by means of living cultures and not by microbial extracts. In Austria a plan for preventing danger from "carriers" of the meningococcus by spraying and washing out their nasal cavities with pyocyanase has been abandoned, as the specific microbes of the disease could be shown to persist in the nasal passages for weeks, notwithstanding the use of the remedy.

Sleeping Sickness.

The year 1909 has seen a considerable advance in our knowledge of this disease, and for information as to this we are largely indebted to the London Sleeping Sickness Bureau, which was established late in 1908. The director of the bureau, Dr. A. G. BAGSHAWE, acts also as editor of the

monthly bulletins, which contain valuable summaries of the more important contributions made from time to time by investigators of trypanosomiasis at home and abroad. More especially do these bulletins make public the work done by the Commission appointed by the Royal Society and which went out to Uganda under the leadership of Colonel Sir DAVID BRUCE, F.R.S., about the end of last year. One important work which this Commission has already done has been the repeating and confirming of the experiments made by Professor F. KLEINE, which suggest that the parasite of sleeping sickness undergoes a cycle of development in the body of the Glossina palpalis. In the columns of THE LANCET we have frequently during the year directed the attention of our readers to the more interesting contributions summarised in these monthly bulletins. In a paper read before the Society of Tropical Medicine and Hygiene on Oct. 22nd, and published in full in THE LANCET of Oct. 23rd, Dr. BAGSHAWE gave a résumé of the Advances of our Knowledge of Sleeping Sickness which had been made within the last 12 months, affecting specially our knowledge as to the transmission, means of diagnosis, clinical characters, treatment, and prophylaxis of the disease. During the year the report of the French Sleeping Sickness Commission by M. MARTIN, M. LEBŒUF, and M. ROUBAUD has been published, as also that of the German Commission by Professor R. Koch, Professor M. BECK, and Professor F. KLEINE. In THE LANCET of Oct. 30th we summarised the main points of the latter report.

Dr. ALLAN KINGHORN, of the Liverpool School of Tropical Medicine, who had been investigating sleeping sickness in North-Eastern Rhodesia and Central Africa, and who published in THE LANCET of Sept. 25th a paper on the Trypanosoma Dimorphon, has now proceeded, at the request of the Secretary of State for the Colonies, to West Africa to investigate the disease there with a view of framing recommendations for the prevention of its spread in that region.

It is with great regret that we record the death, on March 8th, of Captain FRED HALLAM HARDY, R.A.M.C., from sleeping sickness, at Aden, whither he had gone after contracting the disease, it is said, in Nyassaland, where he had been at work under the Commission. This adds another to the many medical men who have died as martyrs to scientific research.

Beri-beri.

The subject of beri-beri has been brought prominently before the public during 1909 by questions asked in Parliament about deaths from the disease on board ship, by letters in the public press, and by discussions and papers in our scientific societies. The questions in Parliament related chiefly to occurrences of beri-beri on ships arriving in this country from foreign ports, and as to deaths of Lascars from this disease. It was suggested in the House of Commons that a commission should be appointed to investigate the causation of beri-beri, but the matter was ultimately allowed to drop. In the Shipping Gazette a number of articles on the disease by ships' officers and others were published, but these did not throw any fresh light upon the subject. In THE LANCET of Feb. 13th we published a preliminary report by Dr. HENRY FRASER and Dr. A. T. STANTON of the Institute for Medical Research, Kuala Lumpur, Federated Malay States, who produced evidence showing that beri-beri in the Malay Peninsula was intimately associated with the consumption of white or "uncured" rice. We commented in THE LANCET of August 7th on the detailed report of these two investigators, but we are still awaiting the final results of the further inquiries which are being made by them. The white rice theory was brought under the notice of the Society of Tropical Medicine and Hygiene by Dr. W.

LEONARD BRADDON in a communication read on April 16th and discussed at that and the subsequent meeting in May. Dr. Braddon has for some years contended that the use of white rice was the main cause of beri-beri. subject was also discussed by him and others at the Medical Congress which met at Bombay early in the present year. In the Shipping Gazette, in one of the articles referred to above, a list of ships known to have arrived in this country with beri-beri cases on board during each of the last five years was published on Oct. 30th, and from this it appears that during the present year over 60 cases had been landed from eight ships up to October, and of these 9 or 10 had terminated fatally. The disease is known to be not infrequent on board Norwegian sailing ships on long voyages. One such ship reached Falmouth from the South Sea Islands in October with 10 sufferers on board, and some excitement was aroused in the Tyne by the arrival there of a Brazilian man-of-war with some 25 cases on board. Apart from such ship-borne instances, beri-beri is not often seen in Great Britain.

Malaria.

The subject of malaria was discussed with some earnestness, not to say acrimony, at the Medical Congress which met at Bombay early in the year, the debate ultimately bearing good fruit. For owing in part to the prominence given to the question at the Conference, the Government of India called together at Simla in October a conference of Indian experts on malaria with a view of obtaining information as to the distribution of the disease and the measures best adapted in different parts of the country to prevent its occurrence. Fuller references to both the Congress and the the Conference will be found in the section dealing with the scientific work of the Naval, Military, and Indian Medical Services. Malaria, we hear quite recently, has of late shown a tendency to increase in the port of Bombay. The story of malaria in Mauritlus was told in the report of Professor Ross and Major C. E. P. Fowler, R.A.M.C., and we discussed it in THE LANCET of March 27th. We drew attention in our columns of July 24th to a puzzling outbreak of malaria in an island of the Seychelles group, which raised the question if this disease could ever occur without the agency of anophelines. In this con. nexion we may mention that in the annual report for the year ended March 31st, 1909, on the Bechuanaland Protectorate, the fact is stated that malaria prevails in the almost waterless Kalahari Desert, where the few water-holes that exist are often a hundred miles or more apart, and where consequently it is scarcely possible that anophelines can be bred in any numbers. The suggestion is therefore made that in the Kalahari there is probably some other transmitter of the malaria parasite than the mosquito.

A national league against malaria has been founded in Italy under the presidency of Professor Baccelli with Senator Golgi as chairman of the local organising committee, which, in addition to the two names already given, comprises Professors Lustig, Gossio, Gobbi, Di Mattei, Canalis, Dr. Picchi, and others. Professor Baccelli proposes that a national, or better still an international, congress on malaria should be held in Rome in 1911.

The possibility of malaria spreading in our own country under certain conditions cannot be ignored. Captain P. S. EASTON, R.A.M.C., has recently published in the journal of his corps the case of a young soldier, born and bred in London, who had never been out of England, but who was attacked, after a few months' residence in camp at Aldershot, by illness proved by examination to be malaria, the parasites having been found in the blood. He remembered being bitten on the wrist by a "gnat" about a month before removal to hospital. Anophelines, it may be added, have already been observed at Aldershot, where also there are

living a number of men returned from foreign service who have had malaria, and whose blood therefore at times may furnish parasites to infect local mosquitoes.

Blackwater Fever.

During the year reports of two scientific investigations of blackwater fever have been made public. The first of these related to an inquiry, undertaken at the instance of the Government of India, by Captain S. R. CHRISTOPHERS, I.M.S., and Dr. C. A. BENTLEY, and which was conducted in an intensely malarious district at the foot of the Himalayas between Nepaul and Assam. The report was issued as No. 35 of the Scientific Memoirs of the Medical and Sanitary Departments of the Indian Government. The second investigation, financed jointly by the Colonial Office and the Liverpool School of Tropical Medicine, was carried out in Nyassaland by Dr. J. O. W. BARRATT and Dr. WARRINGTON YORKE. The report was published in the Liverpool Annals of Tropical Medicine and Hygiene. Both reports throw considerable light on the causes which combine to bring about the condition known as blackwater fever.

African Entomological Research.

The relationship which exists, particularly in Africa, between biting insects and the spread of certain diseases in man and animals has at last been recognised by the British Government, for in August of this year the Secretary of State for the Colonies appointed a special African Entomological Research Committee which is to investigate the above relationship, as also that of biting insects to economic plants and their cultivation. The committee comprises a number of well-known entomological experts, and among the medical members we may mention the names of Sir PATRICK MANSON, F.R.S., Colonel Sir DAVID BRUCE, F.R.S., Colonel A. W. ALCOCK, F.R.S., Colonel D. PRAIN, F.R.S., Dr. ROSE BRADFORD, F.R.S., Professor G. F. NUTTALL, F.R.S., and Dr. A. G. BAGSHAWE. Much good work in the way of research has already been done by the staff of the Natural History Department of the British Museum as regards mosquitoes and the tsetse flies. During 1909 Mr. E. E. AUSTIN of that staff brought out a very valuable volume on "African Blood-sucking Flies," on which we commented in an article published in THE LANCET of Sept. 18th.

Advisory Committee for Tropical Africa.

During the year the departmental committee appointed to investigate the complaints which had been made with regard to the West African Medical Staff presented their report, and this was duly considered by the Secretary of State for the Colonies, along with the recommendations which were put forward for the improvement of that service. As a result the Colonial Office have nominated an advisory committee on medical and sanitary questions connected with the British Colonies and Protectorates in tropical Africa. The committee consists of eight members, two of whom, including the chairman, represent the administrative staff of the Colonial Office, while the remaining six are medical men, viz., Sir Patrick Manson, K.C.M.G., F.R.S., Sir Rubert BOYCE, F.R.S., Dr. THEODORE THOMSON, C.M.G., Dr. W. T. PROUT, C.M.G. (late P.M.O. Sierra Leone), Professor W. J. R. SIMPSON, C.M.G., and Dr. J. K. FOWLER, late Dean of the Faculty of Medicine, University of London.

FORENSIC MEDICINE.

THE DEVELOPMENT OF WORKMEN'S COMPENSATION,

This section of the Annus Medicus is largely taken up with cases arising out of "workmen's compensation." The list of cases might easily have been made longer, as all who read our columns know, but the decisions quoted are those in which the issues raised have depended most intrinsically on medical evidence, and which best illustrate the probable relevancy of medical evidence on future occasions. The

working of the Act is causing considerable anxiety. It provides compensation for many upon whom the incapacity arising out of accident or industrial disease has before pressed with undue severity, but it is open to the criticism that at times it lays a burden opon employers not always consistent with strict justice. By a section of the Act itself the serious and wilful misconduct of the workman does not disentitle him or his dependants from compensation at his employer's expense if it has brought about his permanent disablement or death, and it appears to be now well established by judicial authority that the absolute physical unfitness of the employed person for the work undertaken by him does not prevent the natural consequence of such unfitness from ranking as an accident.

Some Interesting Actions At LAW.

Bellerby v. Heyworth and Bourn.-Three persons entered into partnership to practise dentistry, none of them being qualified, under articles of partnership which stipulated that no partner should do any act calculated to infringe the Dentists Act. Two of the partners displayed a notice on the premises where they carried on business, "Bellerby. Heyworth, and Bourn. Finest Artificial Teeth. Painless Extraction. Advice Free. Mr. Heyworth attends here.' In an action by the third partner for a dissolution of the partnership Mr. Justice PARKER held that the above constituted a breach of the articles and made an order dissolving the partnership. The Court of Appeal reversed this decision on the ground that there was nothing in the Dentists Act to prevent an unqualified person from doing dentist's work and from informing the public that he was prepared to do so, and that the notice did not go further than to announce that the members of the firm would do that which the law permitted them to do. The words "painless extraction" were not construed by the court as implying the possession of special qualifications within the meaning of the Act.

Etherington v. The Lancashire and Yorkshire Accident Insurance Company .- This was an appeal to the Court of Appeal from the decision of Mr. Justice CHANNELL upon a case stated for argument before the former by arbitrators under a clause in the accident insurance policy. A gentleman, deceased, died from pneumonia as the result of riding home after meeting with a hunting accident which did not otherwise injure him. It was contended on behalf of his widow that the onset of pneumonia due to the lowering of the vitality of the deceased by the accident entitled her to payment under a policy of insurance against "bodily injury caused by violent, accidental external and visible means, in spite of a clause, set up by the defendants, which denied compensation where the direct or proximate cause was disease or other intervening cause, even although the disease might itself have been "aggravated by such accident or have been due to weakness or exhaustion consequent thereon, or the death accelerated thereby." The Court of Appeal upheld the decision of Mr. Justice CHANNELL who had decided that the death was caused by an accident within the meaning of the policy.

The Attorney-General v. G. C. Smith, Limited.—A company was formed in 1906 to carry on the business of G. C. Smith, whose name had been struck off the Dentists Register in that year. The above action was brought at the instance of the British Dental Association against the company and G. C. Smith, the sole director, to restrain the company from representing that they were carrying on the business of a dentist or surgeon dentist as successors to G. C. Smith, or that they were dentists or dental practitioners, and from using any name, title, or description implying that they were registered under the Dentists Act, 1878. An injunction was granted in the Chancery Division by Mr. Justice Swinfen Eady to the above effect.

Hillyer v. The Governors of St. Bartholomen's Hospital.—
The plaintiff, a medical man, brought an action against the defendants for damages for personal injuries alleged to have been sustained through the negligence of their servants (the surgeons and nurses at the hospital) in the course of an examination, during which the plaintiff was placed under an anæsthetic. The plaintiff's case was that his arms had been allowed to hang down and had come in contact with the heating apparatus and had been burnt. Mr. Justice Grantham held that there was no evidence of negligence to go to the jury, and the question of the liability of the governors of hospitals in such cases did not, therefore, have to be decided. Mr. Justice Grantham's view was upheld on appeal.

Two Actions against the London Hygienic Institute. - In the case of Hawthorne v. The London Hygienic Institute the plaintiff, a baker, sued the defendants, a firm carrying on the practice of dentistry through paid assistants, not qualified, for damages for personal injuries caused by their negligence in the extracting of the plaintiff's teeth. Cocaine was injected, but the plaintiff denied that it prevented him from feeling pain, and 22 teeth were extracted at a sitting, after which the defendant suffered severely from faintness and hæmorrhage, requiring the attendance of a medical man and of a qualified dentist, the latter of whom removed 14 stumps which had been left in the plaintiff's jaw. The jury awarded £50 damages. In another action against the same defendants the plaintiff, a woman, came up from the country to have her teeth attended to at the Hygienic Institute, where an employé, a person not qualified except by seven years' experience in pulling out teeth, extracted five teeth at one sitting and 11 on the following day, injecting cocaine into her gums, with the result that she suffered from cocaine poisoning. After this case had been partly heard it was settled upon terms which were not stated in court.

Action on a Warranty of Milk as Free from Borio Acid. - In an action tried at the Croydon county court the plaintiff recovered damages against a dairyman for supplying milk for the consumption of his infant daughter containing boric acid in breach of a verbal warranty that the milk should be free from any preservative or adulteration. The plaintiff had before ceased to deal with another dairy on account of the presence of preservatives in the milk sold, and he stipulated that there should be none in arranging to be supplied by the defendant. The child when fed on the milk suffered from diarrhoea, loss of appetite, and loss of weight, and after its discontinuance improved in health, analysis showing in a sample of the milk delivered by the defendant boric acid in the proportion of five grains to the pint. The damages were assessed at £11 1s. 6d., the actual cost to the father, and £5 5s. for the child in respect of her suffering, and judgment followed for the above amount with costs.

"Dr." Bodie.—A person calling himself "Dr. Bodie' was sued by a young man named IRVING to recover damages for misrepresentations which had induced him to pay to the defendant £1000 in consideration of Bodie, whom he understood to be a qualified medical practitioner, teaching him "hypnotism, bloodless surgery, and medical electricity," and disclosing to him secret methods which Bodie professed to make use of in stage performances and exhibitions on the stage at music halls and other places of entertainment. He stated that Bodie had only shown him in return for his money tricks by which he imposed upon audiences, and after a prolonged trial, in which scientific and other evidence was given as to the nature of the defendant's supposed demonstrations of skill, the jury awarded the defendant the damages claimed by him.

WORKMEN'S COMPENSATION ACT.

The Working of the Act in 1908.—A Blue-book containing statistics relating to the Workmen's Compensation Act, 1906,

during the first complete year of its operation (1908) showed that in that period compensation was paid in 26 cases of death and 2260 cases of disablement. Among these there were 421 cases of lead poisoning, 23 of anthrax, 15 of arsenic poisoning, and 10 of compressed air illness. Up to the end of 1908 there were 344 medical referees appointed for England, Scotland, and Ireland, to whom 272 references were made. Of these 136 were made by judges, 43 by arbitrators, and 93 by committees. There were 35 appeals against certifying surgeons, in which 20 of the decisions appealed against were upheld and 15 were not.

Workmen's Compensation Act: Cases in the Court of Appeal. Cerebral Hæmorrhage through Lifting a Weight .- In Scotland the Court of Session heard an appeal by the defendants against a claim by a workman successfully made before the Sheriff-Substitute. The workman, whose arteries were in a degenerate condition, had an attack of cerebral hæmorrhage while moving a weight, and having been put to bed had a second attack four days later causing permanent paralysis. Held, that the case coincided in principle with Stewart v. Wilsons and Clyde Coal Company (5 F. 120), and with cases relating to rupture in respect of the question whether the injury was due to accident. Also, that in the absence of evidence to the contrary the two attacks were due to the same cause, and that the workman was entitled to succeed.

Murphy v. Enniscorthy Board of Guardians (42 Ir. L. T. 246). — The Court of Appeal in Ireland was asked to decide whether a dispensary medical officer (who had been thrown from his trap and killed while in discharge of his duty as such) was a workman within the meaning of Section 13 of the Act. Held, that there was no "contract of service or apprenticeship with an employer by way of manual labour, clerical or otherwise," such as would bring the deceased within the meaning of the section.

Charles v. Walker, Limited.—The widow of a deceased workman claimed in respect of his death, which took place while he was recovering from an anæsthetic administered to him for the amputation of a finger injured by an accident, and renewed in order that a tooth might be removed of which he had complained. The county court judge had found that it was at least as probable that death had been due to a spasm caused by an attempt to swallow blood oozing into the mouth as that it was due to the anæsthetic administered for the first operation, and decided that consequently the widow had not made out her case. The Court of Appeal held that the county court judge had "rightly directed himself" and that the claimant had failed to discharge the onus which lay upon her to prove the facts upon which her claim depended.

Griffiths v. the Istradoren Colliery Company.-The claimant, a collier, injured his knee while at work, and owing to the accident took more than two hours to reach his home on a cold day, thus contracting pneumonia which resulted in bronchitis and chronic asthma. The county court judge found that the workman's incapacity due to the pneumonia was not the natural result of the accident and refused the compensation claimed. The Court of Appeal held that this was wrong, and in remitting the case to the county court judge laid down as a principle that the true question was not what might be the reasonable or probable or natural result of the accident, but whether the condition complained of was in fact the result of it.

Hughes v. Glover, Clayton, and Co. - In this case a workman employed by a firm of shipbuilders fell dead when tightening a nut with a spanner. Post-mortem examination showed that death was caused by the rupture of a large aneurysm of the aorta, and medical evidence was given to

any time in the condition in which the man was, or that it might even have occurred in sleep. The county court judge awarded compensation to the dependents on the ground that the death was due to an accident within the meaning of the Act, and the Court of Appeal upheld the decision, holding that the injury was the result of the work in which the deceased was engaged, and that the case came within the principles laid down in Williamson v. Ismay, Imrie and Co. (death of a ship's fireman from heat-stroke held to be an accident), and Stewart v. Wilsons and Clyde Coal Company.

Lead Poisoning Contracted at Sea. - A seaman claimed against a firm of shipowners in respect of lead poisoning contracted in painting their ship at sea. Held by the county court judge, and confirmed by the Court of Appeal, that the Act did not apply to lead poisoning contracted in the painting of a ship at sea, as it only supplied machinery for obtaining compensation for industrial diseases where there was a district with a factory surgeon to certify when they occurred, and apparently did not contemplate or provide for such cases occurring elsewhere than within such districts.

Refusal to Undergo a Surgical Operation. —A seaman claimed compensation for injuries involving the loss of a finger, which was originally accidentally burned, after which it became septic. The man submitted once to having the finger lanced by the ship's surgeon, but when on the following day the making of two or three further incisions was suggested he refused to submit, and in the end the finger had to be amputated. The county court judge was of opinion that the operation might have been undergone and would have saved the finger, but he felt himself bound to take into consideration the evidence of a medical witness who had expressed the opinion that the rejected operation would not have saved the finger, and in the circumstances he was not prepared to find that the defendant was unreasonable. This decision the Court of Appeal declined to disturb.

Workmen's Compensation Act: Decisions of County Court Judges.

Contribution by Employers in a Case of Lead Poisoning .-In a case at Bury in which the workman, a painter, claimed in respect of lead poisoning, and the judge found that it had been contracted gradually during a period in which the workman had been in the service of five different firms at different times, an award was made for weekly payment during incapacity to be divided into twenty-sixths and to be paid by the firms in proportion to the number of weeks during which they employed the claimant.

Rupture and the Duration of Incapacity.—In the Liverpool county court a ship's cook claimed compensation as for permanent incapacity on the ground of rupture sustained at sea. Evidence was given that a large proportion of ruptured men applying to be passed as medically fit for service at sea were so passed, and the judge awarded half wages up to the date of the hearing, to be followed by 1d. a week, the latter being allowed in order that the matter might be kept open.

In the same county court a ship's fireman claimed compensation on similar grounds. Medical evidence as to the passing of ruptured men wearing trusses for sea service was given, and it was argued on the other side that the nature of the claimant's work would be liable to cause shifting of the truss and renewal of the injury with possibly serious results; also that the wearing out of the truss would be a continual source of expense. The award was for half wages up to the date of hearing followed by 2s. per week.

Cleland v. Burrell and Son. - In the Belfast Recorder's court an application was made for compensation by the widow of a chief engineer on board a ship belonging to the the effect that very slight exertion might have caused it at | defendants on the ground that dysentery, from which he had died at sea, was an accident within the meaning of the Workmen's Compensation Act, 1906. The case of Williamson v. Ismay, Imrie and Co. was relied upon. The judge held that dysentery was not an accident within the meaning of the Act.

CRIMINAL CHARGES, CASES IN THE POLICE COURTS, AND INQUESTS.

Conviction of Three Prisoners in a Case of Abortion.—Two men and a woman were convicted at the Old Bailey, one of the former for performing, and the other man and the woman for aiding and abetting him in the performance of, an illegal operation. Of the two accomplices, the man took his servant, who had become enceinte, to the woman, who in turn introduced her to the principal criminal, who was known as "Dr." Jones, and whose name had been removed in 1902 from the Medical Register after a conviction for performing an illegal operation. Jones was sentenced to ten years' penal servitude, the second man to three months' imprisonment in the second division, and the woman was bound over to come up for judgment if called upon.

A Prosecution under the Midwires Act.—In the case of a midwife charged with fraudulently procuring admission to the Midwives Roll, a medical practitioner was charged with knowingly aiding in the commission of the offence. The latter had certified personal knowledge of the former and of her good character since 1889, but it was found that in 1892 and in 1898 she was tried on charges arising out of alleged illegal operations. The case against the medical man was dismissed on the ground that he acted carelessly only and did not knowingly commit the offence with which he was charged, the magistrate observing that the Director of Prosecutions was amply justified in the course he had taken in prosecuting and in calling on the medical man to explain his conduct.

Coroners' Inquests and Scientific Ecidence. At an inquest held at Southwark Dr. F. J. Waldo called attention to the lack of power on the part of coroners to obtain scientific evidence beyond that contemplated by the Coroners Act, 1887, by which a coroner having decided to hold an inquest, but not before so deciding, may order a post-mortem examination with an analysis of the contents of the stomach or intestines, and may pay 1 guinea for it, with another fee of the same amount if evidence is given. In the case before Dr. Waldo it was a question of bacteriological examination in order to ascertain whether the deceased had or had not died from Asiatic cholers.

" Christian Science."-The death of Colonel CHARLES ALEXANDER, a retired military officer, was the occasion of an inquest at which it was proved that the deceased died from syncope following acute blood poisoning, the result of varicose ulcers on his legs, for which he had refused all medical treatment, employing a "Christian Science healer." A feature in the case was the calling in of a medical man by the healer, or by the relatives on her advice, the object of so doing being possibly to obtain a medical certificate in the event of death. As a matter of fact, death was imminent when the medical man saw the patient, and at that period he could have done nothing to avert it. He was not asked to give any treatment, however, but only to diagnose the case. A medical witness who made a post-mortem examination informed the jury that if taken in reasonable time the ulcers would have been amenable to medical treatment and that in his opinion the absence of such treatment accelerated death. The jury found a verdict in accordance with the medical evidence and laid the responsibility of refusing medical aid upon the deceased.

A Fatal Fire at a Hairdresser's.—An inquest was held at the Westminster coroner's court on the bodies of two women, 22 and 18 years of age respectively, who were fatally burned at a hairdresser's establishment. The younger woman was an assistant in the hairdressing business and the other had gone

to the shop to have her hair dressed. In the absence of the wife of the proprietor, whose injuries prevented her from giving evidence, it was not definitely ascertained how the fire took place, but the evidence pointed to the ignition of petrol vapour through the upsetting of a lamp containing methylated spirit. The room, or one opening into it, had appaently been used for the purpose of cleaning false hair with petrol, or for shampooing with it. The jury found a verdict of "death by misadventure caused by the upsetting of a methylated spirit lamp used by Mrs. RAFFNER (the surviving woman), there not being sufficient evidence of a petrol shampoo having taken place on that occasion."

The Dry Shampoo Fatality. - Another accident at a hairdressing establishment which evoked even greater public attention was the "dry shampoo" case, a sad occurrence which has, we trust, resulted in the abandonment of the use of carbon tetrachloride as a cleansing agent for the hair. The victim of the unfortunate event was Miss DALRYMPLE, who on July 12th at HARRODS' Stores submitted herself to the process of dry shampooing with a liquid containing carbon tetrachloride in considerable amount and having carbon bisulphide as another of its ingredients. During the process she collapsed and died suddenly in spite of the attendant's best efforts on her behalf, and at the subsequent inquest she was stated to have been a subject of status lymphaticus. The jury, after a prolonged hearing, brought in a verdict of "Accidental death accelerated by the fumes of tetrachloride of carbon," with a rider, "that HARRODS' Stores were not justified in employing an unskilled operator to perform this dangerous operation." In consequence of this inquiry, on August 25th the Director of Public Prosecutions opened a prosecution for manslaughter against the manager of the hairdressing department of HARRODS' Stores and the assistant who gave the shampoo, in the course of which case Mr. A. J. PEPPER and Dr. W. H. WILLCOX gave important evidence as to the dangerous nature of the process in spite of the precautions observed by the defendants. The prosecution was not undertaken vindictively, but to establish publicly these important cautionary facts, and when at the close of the case for the prosecution Messrs. HARRODS announced that they had forbidden the use of the preparations of carbon tetrachloride in their establishment the charges were withdrawn by counsel for the prosecution with the approval of the presiding magistrate. It may be expected that as a result of this case the Privy Council will be advised by the Pharmaceutical Society to add carbon tetrachloride and similar substances to the Schedule A of the Poisons and Pharmacy Act. If any further proof of the desirability of this step be required it is to be found in the two communications based on experiments to determine the relative toxicity of pure and commercial carbon tetrachloride and of chloroform, which were contributed to our columns by Dr. A. D. WALLER and Dr. V. H. VELEY, in which it was shown conclusively that pure carbon tetrachloride has a toxicity double that of chloroform, and that the addition of 2 per cent. carbon bisulphide, as in the commercial article, increases the toxicity of the tetrachloride by 33 per cent. Dr. J. E. SANDILANDS also wrote to us to describe cases in which the use of the preparation had given rise to dangerous symptoms, and which he had observed. Any hairdresser using the preparation after the public exposure of its dangers will obviously lay himself open, in the event of a similar fatality, to a serious charge of manslaughter.

MISCELLANEOUS MATTERS.

The Working of the Midmives Act.—With reference to the remuneration of medical men summoned on the advice of midwives under the Midwives Act and the rules of the Central Midwives Board, and to the recommendations of the

Departmental Committee appointed by the Lord President of the Privy Council to consider the working of the Act, the Council of the London and Counties Medical Protection Society approved a recommendation of its Midwives Committee that the medical men in each union should meet and confer on the subject and should "agree as to what fee or fees they will accept, and then combine to insist on such fee or fees being paid (or guaranteed) by the guardians, and paid on the statement of the medical man that he is unable to obtain payment of his fee from the patient or her representatives.

The Notification of Births Act.—The proposed adoption of the Notification of Births Act by the borough council of Hackney was the occasion of a strongly worded protest signed by 53 medical men likely to be affected by it. The protest caused the adjournment of the proposal to adopt the Act and was directed against the compulsion upon medical practitioners to notify births (as they are already compelled to do in the case of deaths) without any fee. It was urged by the signatories, after reference to the notification of deaths without fee and the free services given in many cases of need by medical men, that " it is a strange return for such services to decree that because in the past we have done much and done it willingly—we shall in the future do more and do it compulsorily.'

A question was raised in the public health committee of the Fulham borough council as to how far medical practitioners likely to be affected had been informed of the adoption of the Notification of Births Act by that borough, it being obvious that a medical man not residing in a district where the Act is in force may attend a confinement within it. and through ignorance may commit a breach of the law by failing to give the prescribed notice.

The Poisons and Pharmacy Act, 1908.—This statute came into force on April 1st. It enlarges and alters the lists of poisons contained in Schedule A, Parts I. and II., of the Pharmacy Act, 1868, and takes out of the scope of that Act the sale of poisons to be used exclusively in agriculture and horticulture, or as sheep-dips or weed-killers, which are poisonous by containing arsenic, tobacco or its alkaloids. These are to be sold under licence from the local authority. The Act also amends Sections 15 and 16 of the Act of 1868. providing for the exhibition in the place where the business is carried on of the name and certificate of the qualification of any person carrying on the business of a pharmaceutical chemist or chemist and druggist, for himself or for others. It makes special provision in this connexion for the regulation of the business of a pharmaceutical chemist or chemist and druggist when carried on by a body corporate, or in Scotland by a firm or partnership. It gives power with regard to making by-laws for specified purposes connected with examinations to the Council of the Pharmaceutical Society, and makes special provision with regard to the sale of sulphuric acid, nitric acid, hydrochloric acid, and soluble salts of oxalic acid. Some, but not all, of the provisions of the Act apply to Ireland.

The Sanitary Oath. - An Act of Parliament has been passed and is in force providing for the administration of the oath in courts of law in the Scotch fashion. The Act does not order that the oath shall be, but that it "may" be, so administered unless the person about to take the oath voluntarily objects thereto.

APPLIED ANATOMY.

In briefly reviewing the progress of anatomy as reflected in our pages during the past year we propose to confine our résumé to those papers and observations which relate to the direct application of anatomy to the practice of medicine and surgery. This limitation of our anatomical survey is not

systematic lectures and articles on anatomy; they form the basis for further progress. We do so because of the limited space at our disposal and of the impossibility of doing justice to these morphological papers in so brief a review.

Head and Neck.

Progress in the application of anatomy to the service of the physician and surgeon is largely determined by the introduction of new methods of surgical procedure. The adoption of SCHLOSSER'S treatment for intractable neuralgia of the fifth cranial nerve, by injecting alcohol into the trunk of the affected branch, has led to a re-investigation of the position of the foramina by which the various branches leave the base of the skull. Dr. WILFRID HARRIS has described fully in our pages the various surface-markings he employs to reach the points of exit of the second and third divisions of that nerve, markings which he determined after a prolonged investigation on the cadaver. The application of radiography to the contents of the skull has yielded improved results; Dr. ROBERT KNOX has shown that not only can the pituitary body be registered on the photographic plate, but that its anterior part—the part enlarged in acromegaly—can be distinguished from the posterior part. Dr. G. RANKIN and Dr: R. O. Moon have given further details regarding the anatomical changes observed in acromegaly-a disease which throws light on the manner in which the shape and size of certain parts of the osseous system are determined. The attention now given to the diseases of the sphenoidal sinus has led to further observations on its position and relationships. Mr. W. S. SYME found in a series of 155 skulls that its orifice had an average distance of 2½ inches from the anterior nasal spine. Mr. SYDNEY R. SCOTT has made further investigations on the finer anatomy of the internal ear and shown how the pulsations of the internal carotid, acting through the labyrinth, may give rise to lateral nystagmus. The antrum of the middle ear has also received much attention, one of the chief additions to its anatomy being Mr. A. H. CHEATLE'S investigations into the varying nature of its mastoidal or outer wall. The cases of oxycephaly described by Dr. H. Morley Fletcher and by Dr. G. CARPENTER also deserve mention, not only on account of the optic atrophy which accompanies the condition, but of the light shed by these cases on the obscure problem of the manner in which the skull grows.

Observation has been directed to certain structures in the mouth and throat. Mr. RICKMAN GODLEE has published his observations on that peculiar form of exostosis found on the hard palate—the torus palatinus—a structure which escaped the notice, or at least the recording pen, of previous British surgeon-anatomists. Mr. R. C. Dun was able to show during the year a remarkable series of congenital malformations of the lip-two cases of median fissure of the upper lip and three of fistulæ of the lower lip. Professor A. Keith dealt with the malformations of the face and palate in demonstrations connected with the Museum of the Royal College of Surgeons of England. Mr. G. SECCOMBE HETT'S account of the comparative anatomy of the palatine tonsils fills up a blank in our knowledge of that structure, his work affording not only an explanation of the supratonsillar recess, but also a basis for the classification of enlarged tonsils. Mr. WILLIAM TAYLOR recorded a case of pharyngeal (improperly named cesophageal) pouch, but the cause and anatomy of these diverticula require further investigation.

The practice of nerve anastomosis has called attention to the relative positions of certain of the nerves of the head and neck, especially of the seventh, eleventh, and twelfth cranial nerves. A case of anastomosis between the eleventh and twelfth for the cure of lingual paralysis has been recorded by Mr. C. A. BALLANCE, and another between the seventh due to any lack of appreciation of the more theoretical and | and twelfth for facial paralysis by Mr. A. H. Tubby. The

erroneous hypothesis of MENDEL that the orbicular part of the facial nerve had its deep origin in the nucleus of the third nerve has been finally disproved by a case recorded by Dr. A. BRUCE and Dr. A. H. PIRIE.

Further cases have been described of cervical ribs causing atrophy and disturbance of sensation in the distribution of the first dorsal nerve to the arm and hand, a field of observation and treatment opened up by Mr. WILLIAM THORBURN and by Dr. Lewis Jones. In the case of a girl, aged 13 years, recorded by Dr. F. PARKES WEBER, it was found that a brother and sister also had cervical ribs, substantiating Dr. Theodore Thompson's observation on the hereditary nature of this abnormality.

In connexion with the anatomy of the head and neck mention must be made of the paper by Mr. F. G. PARSONS and Mr. P. W. G. SARGENT on the position and manner of termination of the thoracic duct in the neck, and of Mr. PARSONS'S published description of the age and sex changes in the hyoid bone of man.

The Thorax and Thuracic Organs.

As regards the heart very little has been added to our knowledge of its anatomy. Dr. G. A. Gibson and Dr. W. T. RITCHIE and Dr. W. LANGDON BROWN have recorded cases of Stokes-Adams disease in which the auriculo-ventricular bundle was more or less interrupted by fibrous atrophy of its muscle.. The neuro-muscular node at the junction of the superior vena cava and auricle, described two years ago by Professor KEITH and Dr. M. W. FLACK, has received considerable attention on the continent, but its functional nature has not been fully determined. Dr. A. Morison recorded a remarkable case in which the greater part of the right chambers of the heart had become completely replaced by sarcomatous tissue, and yet the heart continued to functionate. The same writer and also Dr. J. F. POYNTON and Mr. W. TROTTER have reported cases where thoracostomy has been performed to allow adherent hearts to execute their movements more freely. Observations by the electric cardiogram, further records of which have been published by Dr. A. D. WALLER, have again drawn attention to the fact that the base of the heart is a composite structure made up of the beginning and end of the cardiac tube. Professor KEITH in his Hunterian Lectures utilised the malformation of the heart as a means of analysing its component parts, showing that the infundibulum of the right ventricle of man corresponds with the fourth chamber or bulbus cordis of the heart of lower vertebrates—a chamber connected with the function of the heart as a respiratory pump. As regards the lungs, the thorax, and the mechanism of respiration, certain interesting if rather minor additions to our knowledge require mention. Dr. W. EWART has reviewed the various anatomical theories which have been offered to explain the clinical sign known as Grocca's triangle, but is unable to accept the explanation given by Professor Elliot Smith that it is due to the pleural fluid pushing the posterior mediastinal mesentery towards the sound side. Dr. R. H. SCANES SPICER has drawn attention to certain neglected movements of the trachea and larvnx which occur with the abdominal type of respiration, and regards these movements as predisposing certain parts to disease. Dr. J. S. DICKEY has again investigated the position of the cervical pleura, and finds that in the average individual it ascends an inch above the inner part of the clavicle and lies 14 to 11 inches deep to it. The nerve-supply of the pleura has been worked out by Dr. H. M. JOHNSTON from the intercostal and phrenic nerves. The same writer has also made a most valuable contribution to the segmental distribution of the spinal nerves on the dorsal aspect of the body. Two cases of congenital defects in the anterior wall of the thorax have been recorded by Professor A. M. PATERSON and Mr. T. H. C. BENIANS and Mr. H. E. JONES.

The Abdomen and Pelvis.

A considerable number of clinical records deal with the displacement of abdominal viscera. A displacement implies that the usual means of fixation have proved insufficient, but from a perusal of recent publications it is at once seen that there is a great difference of opinion amongst teachers and writers as to what the normal means are. There are, broadly speaking, two schools as regards this matter—one which regards the viscera as supported entirely by the contraction of the belly wall, and the other which regards the organs as fixed to the belly wall by mechanical means-ligaments, fascial bonds, and vessels. Practically all who have written on displacements of the abdominal viscera during the past year adopt the mechanical theory -Sir WILLIAM WATSON CHEYNE, (when dealing with moveable kidney and its treatment), Mr. E. W. HEY GROVES and Dr. I. WALKER HALL (the colon and its function), and Mr. ARBUTHNOT LANE. It is also so as regards the pelvic viscera. Dr. R. H. PARAMORE, however, has published several communications to show that the muscular pelvic diaphragm must be accounted of supreme importance in maintaining the uterus and vagina in position.

Closely related to the problem of fixation of the viscera is that relating to the regulation of the tonus of the muscles of the belly wall and the relationship between the nervesupply of the viscera and that of the belly wall. Professor C. S. SHERRINGTON dealt with these matters in his address to the British Medical Association at Belfast. Dr. JAMES MACKENZIE has again discussed the nature and substratum of visceral pain in his recent book on "Treatment." The use of X rays in studying the topography of the abdominal viscera has been further utilised. Dr. A. E. JORDAN published a series of observations on this subject. Mr. J. F. Dobson and Dr. J. KAY JAMIESON continued their experimental work on the lymphatics of the abdominal viscera, dealing with those of the colon in their communication published in the present year. A condition of the gall-bladder, recorded by Mr. Hugh LETT, deserves mention; the bladder was so freely surrounded by peritoneum that it became twisted on its own neck. Mr. W. BILLINGTON has added a case to the series recently described by Mr. Jonathan Hutchinson, jun., where the small intestine and colon, owing to the persistence of an embryonic arrangement of the mesentery, had formed a volvulus. The cases recorded by Mr. R. L. KNAGGS and by Mr. J. F. Dobson, of volvulus of the ileum in a hernial sac, illustrate the manner in which part of the mesentery becomes elongated when a loop of bowel descends within a hernial sac.

Dr. D. Berry Hart re-investigated the processes involved in the descent of the testicle and of the ovary, and applied Mendel's law to explain the atrophy of the male sexual parts in the female and of the female in the male. The abnormalities of the urachus, especially its cystic enlargement, has been elucidated by Mr. Alban H. G. Doran. Dr. E. J. EVATT has shown the manner in which the middle portion or lobe of the prostate is developed. Professor Paterson has written on the valves of Houston, and has shown that the transverse and constant fold which occurs at the reflexion of the peritoneum from the rectum to the vagina or bladder marks the junction of two physiological parts of that structure, the part below being for the mere passage of fæces but not serving normally as a fæcal receptaculum.

Spine and Limbs.

No better example of the manner in which clinical data can be utilised as a means of elucidating obscure anatomical problems could be cited than the recent papers on the sensory paths in the posterior columns of the spinal cord by Dr. Henry Head and Dr. H. T. Thompson. Dr.

THOMPSON has published during the current year his observations on the disturbances in the paths for sensory impulses in the posterior columns observed in patients suffering from tabes dorsalis. The further application of spinal anæsthesia has called increased attention to the influence of gravity on the cerebro-spinal fluid and the free communication that exists between the spinal and cerebral cisterns. Professor Rehn has shown that an injection of a solution of methylene blue in the spinal subarachnoid space of the horse appears within the ventricular system of the brain in from 10 to 25 minutes. By producing a temporary paralysis of nerves from the injection of a solution of eucaine and adrenalin Mr. WILFRID TROTTER and Mr. H. MORRISTON DAVIES have opened up a new method of determining the distribution of nerves by experiments on the living. Professor E. RUTHERFORD MORISON'S paper on laceration of the semilunar cartilages of the knee-joint has shown that the attachments of these cartilages are much stronger than are the cartilages themselves.

In the ARRIS and GALE lectures at the Royal College of Surgeons Professor ELLIOT SMITH showed how obscure problems relating to the functional nature of large areas of the human brain can be elucidated by the application of the methods of the comparative anatomist.

Changes in the Personnel connected with Anatomy.

The past year has seen almost a revolution in the occupancy of the leading chairs of anatomy. At Edinburgh Professor ARTHUR ROBINSON has succeeded the late Professor D. J. CUNNINGHAM, whose death was a real-almost irreparable -loss to British anatomy. Professor J. CLELAND has retired from the chair in Glasgow University and has been succeeded by Professor T. H. BRYCE. At Manchester Professor Elliot SMITH has succeeded Professor A. H. Young, who has unfortunately found it necessary to retire on account of ill-health. Professor PETER THOMPSON has succeeded to the chair vacated by Professor Robinson in Birmingham, while Dr. DAVID WATERSTON of Edinburgh has replaced Professor Thompson at King's College, London. The sudden and premature death of Professor ALEX. FRASER made a vacancy in the Schools of Surgery of the Royal College of Surgeons in Ireland, which has been filled by the appointment of Dr. A. CAMPBELL GEDDES of Edinburgh. Professor E. P. McLoughlin has been appointed to the new chair of anatomy in Dublin, while Professor D. P. FITZGERALD has succeeded to the chair of anatomy in Queen's College, Cork, formerly held by the President of the College, Dr. B. C. A. WINDLE.

THE NAVAL, MILITARY, AND INDIAN MEDICAL SERVICES.

THE ROYAL NAVAL MEDICAL SERVICE.

The Conditions of the Service.

In our yearly review at the end of 1908 we mentioned several particulars in which the medical service of the Royal Navy appeared to us to be in an unsatisfactory condition, the grievances of the officers falling under the two heads of the purely naval and the purely medical. We much regret that we are unable to chronicle any improvement at the end of another year. A committee was appointed, with Vice-Admiral Sir J. DURNFORD as chairman, to deal with these matters as long ago as last March, but up to the present no report has been issued. Mr. MCKENNA stated in the House of Commons in November that it was receiving earnest consideration, but he could not say whether it would be published. As this committee included (besides the naval Director-General) Sir ALFRED KEOGH and two eminent civilian surgeons (Sir W. W. CHEYNE and Mr. CHEATLE), it may be hoped that substantial improvement in the professional and service

conditions will result. From the correspondence that has appeared in the medical and service journals there seems to be still considerable dissatisfaction. The facts reported in connexion with a court-martial held on Fleet-Surgeon C. G. MATTHEW in September go far to explain this. It is true that the Fleet-Surgeon was acquitted, but the conduct of the naval officer in temporary command of the ship, as reported, is likely to act as a deterrent to intending candidates for naval medical commissions for some time to come. The immediate result has been that Fleet-Surgeon MATTHEW has resigned his commission and the service has lost an excellent officer.

Health of the Navy.

We reviewed the annual statistical report for 1908 in our issue of Nov. 20th. The health of the navy is satisfactory and improving. We have again to regret (as last year) the meagreness of this report, consisting, as it does, mainly of a collection of figures, without any attempt to extract their significance. An excellent account of original observations on heat-stroke by Staff-Surgeon O. Rees is the only matter of scientific interest.

THE ARMY MEDICAL SERVICE.

Scientific Work in the Royal Army Medical Corps.

No active service has fallen to the lot of our troops during the past year; the annals, therefore, of the medical corps have been uneventful on the purely military side. But "Peace hath her victories no less renowned than war," and the military members of our profession have a good record of scientific work accomplished in various lines of research. The Third Sleeping Sickness Commission of the Royal Society, directed by Colonel Sir DAVID BRUCE, is still in Uganda, where they have been working since October, 1908. From a communication to the Royal Society by BRUCE in May last, in which he reported that he had found Glossina palpalis infective after 16, 19, and 22 days, it appears that the trypanosome passes through a developmental cycle in the tsetse fly (as had been surmised). LEISHMAN has shown, in regard to tick fever, that natural infection occurs, not by the inoculation of unaltered spirochætes from the salivary glands, but through the agency of certain chromatin granules, either regurgitated from the intestine, or voided in the Malpighian secretion while the tick is gorging, so gaining access to the new host through the tick bite. Similar bodies may be the direct infecting agent in the case of G. palpalis. Captain H. ENSOR, D.S.O., attached to the Egyptian Army, has made some important investigations as to the areas of distribution of G. palpalis and G. morsitans in the Bahr-el-Ghazal province. Here sleeping sickness does not prevail, and apparently does not even exist, except in very rare instances; but Captain ENSOR anticipates that the disease may make its appearance by extension from the Congo Free State, and advises that arrangements should be made immediately (by clearing away trees and scrub from the banks of rivers and pools where G. palpalis abounds) to limit its spread. The subject is referred to further in the section on Tropical Diseases.

Records are accumulating to show the degree of protection afforded by antityphoid inoculation. Sir W. B. Leishman has summarised these up to June, 1908, in regard to a total strength of 12,083 men serving in India, South Africa Egypt, and the Mediterranean. The case-incidence of the 5473 inoculated was 3.8, and of the 6610 non-inoculated was 28.3 per 1000; but as no enteric cases at all occurred in five of the units (numbering in all 4204), if these are deducted, there occurred amongst the "exposed units" 6.6

In a communication to the Royal Society (Nov. 25th) the Commission state that the fly retains its infectivity up to 80 days, and possibly even for two years.

cases per 1000 in the inoculated and 39.5 per 1000 in the non-inoculated. But the first unit inoculated was treated with vaccine prepared by heating to 62°C.; the others have all been inoculated with vaccine heated only to 53°C. Taking this series of 6866 men "exposed" to infection, 3.7 cases per 1000 occurred in the inoculated and 32.8 in the non-inoculated.

The antityphoid vaccine has been employed therapeutically by Captain A. B. SMALLMAN in a series of 36 enteric cases at Quetta; there were three deaths, two occurring in fulminating cases about a week after admission. The treatment shows considerable promise for good. Very great attention has been paid during recent years in India to the combating of enteric fever by every means known; amongst others, by the most careful isolation of carrier cases. The ratio per 1000 of admissions has fallen from 20.6 in 1899 to 14.6 in 1908, and the deaths from 5.14 to 2.74. It is noteworthy that the admissions for dysentery have also fallen from 25.4 to 14.4, and the deaths from 0.65 to 0.42 per 1000 in the same period.

The importance of speedy recognition of B. typhosus in excretions is obvious. Captain H. B. FAWCUS, by combining Conradi's brilliant green and pieric acid medium with bile salt lactose agar, gets easy identification in 48 hours, typhosus colonies being transparent (together with paratyphoid, dysentery, and food poisoning bacilli), while coli colonies are thick and opaque.

The War Office Committee on Food, Training, and Clothing of the Soldier.

This Committee has issued three further reports. In the one dealing with marching exact and prolonged observations are recorded on pulse and temperature; and on the influence of variation in clothing, in load carried, and in the atmospheric conditions of air temperature, moisture, and wind on the pulse and temperature of the men under experiment; also on the effects of smoking and drinking (water and beer). The committee recommended that in warm weather men should march with the jacket and shirt open; that smoking in the ranks should be strongly discouraged; and that training in marching should be considered as of equal value with the technical "physical training." Many medical authorities have for years past advocated that the soldier should wear a loosefitting garment when at exercise, but hitherto the military idea of "smartness" has prevailed over the physiological and common sense recommendation that a man's chest should be free from constriction. The advocacy of practice in marching appears to be intended to counteract what is sometimes thought to be an excessive devotion to gymnastic exercises during the period of the soldier's training. The committee has also investigated the question of rations and made a large number of analyses of tinned meats, &c. It considers the present peace rations to be, on the whole, satisfactory, and proposes to make further investigations as to an active service ration. In a final report the committee expresses a favourable opinion on the new Mills-Burrowes pattern of equipment and of the soldier's clothing generally as at present provided.

Health of the Army.

The health of the army continues to show a progressive improvement, to which Mr. HALDANE drew attention in presenting the Army Estimates. This is observable in the home garrison, in India, and in the Colonies; but the improvement is most marked in the figures for India, where the death-rate has fallen to 8.38 and the invaliding to 8.84 per 1000 (1907).

Military Medical Organisation.

An important advance has been made by the issue of a scheme for the organisation of voluntary aid for sick and

wounded in the event of war occurring in this country. The Territorial county associations are brought into touch with voluntary aid societies through the medium of the British Red Cross Society, which will be considerably developed. This scheme was described in The Lancer of Oct. 9th. A commencement has also been made in the extension of military medical knowledge by the formation of the Officers' Training Corps, Medical Branch, which is distinct from the Territorial Force, but is intended to coöperate with it. The Universities of Edinburgh, Cambridge, Oxford, and London possess medical units in this corps. We note that the Army Medical Reserve (established 1888) was abolished by War Office Order of Nov. 27th, 1908.

As to military medical organisation generally there has undoubtedly been great progress. Sir John French, Inspector-General of the Forces, has reported that the training in camp of the Royal Army Medical Corps (both Regulars and Territorials) has been most valuable; actual training in field hospital and sanitary duties has been given, and the men have learned in practice the duties they would have to perform on active service. Strange as it may seem, this had never been done in the medical department until the last year or so; both officers and men were supposed apparently to be able to do their work under war conditions by the light of nature without previous instruction or training. The general commanding 2nd London Division, Territorials, organised a tour for the medical officers, a medical "staff ride," in which military and medical conditions were discussed on the spot with great advantage. It is a distinct sign of progress that the Army Council has intimated to general officers commanding that last year's training of the Royal Army Medical Corps (Territorial) reflected great credit on all concerned. A staff ride for medical officers was organised in Malta at the end of last year; "all officers gained valuable experience from the work done on the tour, especially from the discussion regarding the measures which should be adopted to meet some of the more critical situations." These staff rides and field trainings make for efficiency and are to be cordially welcomed. It may be noted that all the training of the Territorial Force is in the hands of organisations provided by the War Office, the Territorial thus having a great advantage over the Volunteer and Militiaman.

We may repeat here what has been recently said by Field-Marshal Sir Evelun Wood: "I am convinced, from my experience of 30 years as a general, that the army doctors should be regarded not merely as healers of the sick and wounded, but as trusted staff-officers to advise their chiefs how to guard the troops against the originating and spreading of disease, and thus maintain the number of effectives in a campaign. This will result not only in the increasing of fire effect, but will raise immensely the fighting value of the troops, and will incidentally enable us to reduce the costly and cumbersome hospital establishments and transport."

Army Medical College and Hospital.

At the Royal Army Medical College Major W. S. HARRISON has been appointed to succeed Lieutenant-Colonel R. J. S. SIMPSON, C.M.G., as professor of medicine; and Captain J. C. KENNEDY has succeeded Major HARRISON as assistant professor of pathology. At the presentation of prizes in July Sir Frederick Treves compared the position of the military medical officer with that of the profession in general to the advantage of the former, not only financially but in other ways as well; he also said that "the army medical officer has a greater prospect of attaining distinction in science than has the civilian practitioner."

The Army Council has decided that one candidate may be nominated for a commission in the Royal Army Medical Corps each half year by the Dominion of Canada, thus bringing the medical service into line with the combatant ranks in relation to our kinsmen in Greater Britain.

It is worthy of notice that the military hospital for London, which bears the name of Queen Alexandra's Military Hospital, Millbank, was honoured by a visit from Their Majesties the King and Queen on June 24th, when the new chapel, erected at the expense of an anonymous donor, was dedicated by Bishop Taylor Smith, Chaplain-General to the Forces. Lieutenant-Colonel W. B. Leishman was knighted on this occasion, and Colonel C. E. Harrison and Colonel D. Wardrop were appointed Commanders of the Royal Victorian Order. On July 9th H.R.H. Princess Christian graciously opened a new Military Families' Hospital at Shornecliffe, now called the "Helena Hospital."

The Director-General.

Sir Alfred Keogh retires on Jan. 1st, 1910, on completion of five years' service as Director-General, and will be succeeded by Surgeon-General W. L. Gubbins, C.B., M.V.O., who has had considerable previous personal experience at the War Office as Assistant and Deputy Director-General; and has also recently been Principal Medical Officer in India, a post of almost equal importance with that of the chief of the medical service at home. Sir Alfred Keogh is a difficult man to follow, but the service is now in a satisfactory position, and a continuance of existing policy would, we believe, meet with general approval. The work which Sir Alfred Keogh has accomplished in bringing the medical service of the army to its present state of efficiency, prosperity, and content deserves the fullest recognition.

Miscellaneous.

The United Services Medical Society has held regular and well-attended monthly meetings, at which matters of interest to the medical, naval, and military professions have been discussed. These meetings afford a common ground where civilians and service men may meet to their mutual profit. A great variety of subjects has been dealt with, ranging from purely scientific matters of laboratory research to clinical exhibits and practical points in Territorial recruiting. The Journal of the Royal Army Medical Corps maintains a high level of scientific interest; a glance through its contents shows the exceedingly wide scope of the duties, interests, and opportunities of the service members of our profession.

THE INDIAN MEDICAL SERVICE. New Proposals of the Scoretary of State.

The admitted need for an increase in the personnel, has been definitely acknowledged by the Secretary of State, who has decided that it is to be met, not by an increase on the civil side of the existing Indian Medical Service, but by gradually extending the employment of civil medical practitioners recruited in India. We ventured to consider this decision as of doubtful wisdom and even of doubtful expediency (THE LANCET, May 29th, p. 1537). One reason (though not by any means the only one) for arriving at this conclusion was afforded by a conviction that the Indian Medical Service would suffer in prestige and therefore in efficiency. The competition for commissions has already fallen below that for commissions in the Royal Army Medical Corps, quite reversing the rule that formerly obtained. That the proposal should be welcomed by the educated natives of India is only natural. At a meeting of medical men held in Bombay in September a memorial was adopted, to be forwarded to the Secretary of State, praying (inter alia) that the Indian Medical Service should be made a purely military service and that civil appointments be thrown open "to proved merit and ability wherever found, and that the sons of the soil should have an equal chance with their more fortunate brothers of the I.M.S." It was claimed that a saving of more than 25 lakhs of rupees would be effected.

There seems to be a general feeling, from correspondence. that has appeared in the medical press, that the Indian service does not now offer such pecuniary attractions as formerly; and if, in any new scheme, the higher professional and administrative appointments are to be taken away or diminished, that there will be a difficulty in filling even a restricted cadre. As recommended by "Furlough" in our issue of August 7th, the Government had better devote attention (1) to encouraging private practitioners, and (2) to the crying need for a properly organised native sanitary service. Between the two all the surplusage of Indiantrained graduates may be for many a year to come usefully absorbed.

An old-standing grievance was endorsed by the Naval and Military Committee of the General Medical Council last year. It considered that the restrictions placed upon officers of the Indian Medical Service, regarding fees paid to them by natives of India, were oppressive and unnecessary, interfered with the rights of private practice, and lowered its prestige disastrously, and a communication to this effect was addressed to the Secretary of State in November, 1908.

The Director-General, I.M.S.

Lieutenant-Colonel C. P. LUKIS has been selected to succeed Sir GERALD BOMFORD as Director-General. He is a most popular officer of the highest professional attainments, who has lately been principal of the Medical College in Calcutta; and as to his personal fitness there is no question. But he has been promoted over the heads of all the surgeongenerals and colonels—that is, over all the administrative officers in the country. It is not unnatural that there should be a feeling that the chief administrative officer should have had, at any rate, some experience in administration, both military and civil.

Scientific Work.

The Kasauli Pasteur Institute, under the direction of Lieutenant-Colonel D. SEMPLE, continues to do good work. During 1908 there were treated 1349 cases of bites by rabid animals, with only 0.44 per cent. of failures, the lowest since its foundation in 1900. The system adopted is Professor Hoyges's modification of the Pasteur method, as worked out by Captain W. F. HARVEY and Captain A. D. McKendrick. It is simple, accurate, and accompanied with fewer ill-effects than the older procedure. In the preparation of antityphoid vaccine Lieutenant-Colonel SEMPLE and Captain H. S. MATSON recommend sterilisation with pure carbolic acid, 0.5 per cent., without any heating. Both civil and military officers of the Indian Medical Service can now go through a month's course at the Kasauli Institute in clinical bacteriology and technique; they receive full pay and travelling allowance.

In a report on enteric fever in India by Lieutenant-Colonel SEMPLE and Major E. GREIG the authors sum up to the effect that chronic carriers are the chief agents in the spread of the disease; they consider that a trained body of men nurses is required, and that bacteriological examinations should be made of the excreta of all persons—European and native—engaged in the preparation and distribution of articles of food and drink. The epithets herculean and gigantic are quite inadequate to express the magnitude of this task.

Major A. E. BERRY and Captain R. C. MACWATTERS, I.M.S., have reported in the *Indian Medical Gazette* for February, 1909, the results of antiseptic surgery in the Zakka Khel Frontier Expedition. Out of 96 wound cases in the 10th Native Field Hospital only 10 suppurated; of these 10, one communicated with the mouth, and in two the bullet had been left in the wound; five were comminuted fractures. They note that no wounds that had been disinfected under an anæsthetic (soilicet, thoroughly) suppurated, and they regret

that they did not more frequently use chloroform, so as to scrub more thoroughly.

Personal.

The honour of K.C.I.E. has been conferred on Surgeon-General Bomford, the late Director-General I.M.S., and that of C.I.E. on Lieutenant-Colonel J. T. W. LESLIE, Sanitary Commissioner with the Government of India, and on Major W. H. Orr for famine work. Surgeon-General L. D. Spencer, has been made K.C.B. Amongst the losses by death we especially regret to note those of Sir George King, K.C.I.E., F.R.S., the eminent botanist and superintendent of the Calcutta Botanical Gardens, who was instrumental in establishing cinchona cultivation at Darjiling; and of Surgeon-General J. S. Tuson, the inventor of the well-known belmet.

A medal for Pathology has been founded by officers of the Indian Medical Service in memory of the late Sir JOSEPH FAYRER, to be competed for at the Royal Army Medical College by probationers for the Indian Medical Service,—an excellent way of keeping green the memory of one who was always an enthusiastic supporter of the old Army Medical School at Netley and a devoted friend to both Army and Indian Medical Services.

Bombay Medical Congress.

A long time has elapsed since the first Indian Medical Congress, due chiefly to the initiative, and held under the presidency, of Surgeon-General R. HARVEY at Calcutta in 1894. A well-attended and successful Medical Congress was held at Bombay in February, under the presidency of the Governor, His Excellency Sir GEORGE CLARKE, who read an address on Medical Progress in that Presidency. The Congress was divided into six sections, three being concerned with tropical medicine, and one each devoted to sanitation and surgery, while the exhibition formed the sixth. The address by Professor RONALD ROSS in Section II. was a stirring appeal to action against malaria. There has been enough of inquiry, he said; it is now time to act; begin with those measures which can be adopted immediately -that is (speaking generally) those that cost least. Major Ross considers that all prophylactic systems are good: for large towns (as a rule) mosquito reduction by drainage, for rural areas prophylactic quinine administration, in severe malaria both methods should be carried out. The Italian system of mosquito proof huts or houses was not given equal commendation. Major S. P. JAMES and Captain S. R. CHRISTOPHERS in their address considered that a change of opinion had taken place in regard to mosquito reduction by drainage; whereas it used to be thought easy, that is not the case now; and on the whole they were against it as a practical measure. Major C. Donovan spoke on kala-azar. Major G. LAMB believed that plague is entirely dependent on rats, the infection being conveyed by the flea; insanitary conditions he thought to be of no account except as favouring rats. Plague is often conveyed from place to place by rat fleas imported in the baggage or on the persons of travellers, who may themselves escape infection. Lieutenant-Colonel A. BUCHANAN brought forward additional facts as to cats as plague preventers. Dr. W. L. BRADDON contributed an excellent paper on beri-beri, proving its dependence on a diet composed of rice, and rice of a particular kind-namely, that which is decorticated and

Conference on Malaria.

The Conference on Malaria that was convened at Simla in October, and reported in our issues of Nov. 13th and 20th, though on a much smaller scale, is likely to have a farreaching effect. The presence of the Viceroy himself, who gave an opening address, and of the Lieutenant-Governor of the Punjab, who said that "to cope adequately with this

curse of the country had been his chief endeavour since he assumed charge of the l'unjab Government," gives assurance that the effectual support of the highest authoritywhich, of course, means provision of the necessary funds -will be forthcoming for well-considered measures of prevention. Lieutenant-Colonel LESLIE, Sanitary Commissioner, expressed most clearly some of the difficulties of the problem to be faced. He denied the truth of the statement that had been made that mosquito destruction had been neglected, but pointed out the difficulties that had been met with-much greater in many places in India than at Ismailia and other fever centres where such brilliant results had been previously obtained. He referred to the great success of the routine quinine administration (10 grains to each prisoner on admission and 15 grains weekly afterwards) by Colonel G. F. W. BRAIDE in the Punjab jails. The admission-rate for fever had been only 173.5 per 1000 (including pyrexia of uncertain origin), the lowest on record; and the malarial death-rate the lowest with one exception; this success was obtained in 1908, an extraordinarily bad year for fever. It is proposed that a malaria committee shall be formed for each province, a meeting of delegates to take place each year at Simla, and scientific observers to be constantly at work. As evidence of the scientific appreciation of Professor Ross's past work on malaria, we may mention that the Royal Society has recently presented to him one of its gold medals. In November it was stated in the House of Commons that a special permanent grant of £200,000 a year had been made by the Government of India to provincial governments for additional expenditure on sanitary measures. Such admirable promptitude in providing the sinews of war is a proof of entire change in Indian administrative methods in sanitary matters as compared with former days.

PHARMACY.

Pharmaceutical Politics: the Poisons and Pharmacy Act.

The practice of pharmacy during the past year has been attended by the new conditions imposed by the Poisons and Pharmacy Act, which came into force on April 1st, and the events which have arisen in consequence of the operation of this Act have overshadowed incidents which in other years might have attracted more interest. The progress of pharmacy proper, by which is meant the scientific side of the calling, has been slow, which is perhaps not unnatural, since the attention of pharmacists has been mainly absorbed by what it is usual to classify under the vague but comprehensive term of "pharmaceutical politics." One of the main provisions of the new Act was that which gave to all registered individuals, and to them alone, the sole right to use the title of "pharmacist," in order that there might be some means of distinguishing them from joint stock companies carrying on the same class of business. The same reservation was not made applicable to the sign "pharmacy," but it was thought that this was provided for by the Pharmacy Act of 1852. In order to test the validity of this view the Pharmaceutical Society instituted proceedings against an unqualified person whose shop bore this sign. In the county court the society was successful, but on appeal the decision was reversed by a Divisional Court. In the county court the society relied on the Barnes r. Brown decision, by which the words "specially qualified" in Section 3 of the Dentists Act, 1878, were interpreted as implying "special qualifications to practise dentistry." Before the appeal was reached this decision was overruled by the judgment of the Court of Appeal in the dental partnerships case (Bellerby v. Heyworth), in which case it was held by the Master of the Rolls that the section was directed to the personal description of the workman as distinguished from the description of the work

which the man does. The result of the decision of the Divisional Court in the Pharmaceutical Society's case was to show that the sign "pharmacy" was one which any could use, and this at once diminished the value of the word "pharmacist" as a professional title.

Another object of the Act was to facilitate the sale of horticultural and agricultural poisons containing arsenic and nicotine, by empowering local authorities to grant licences to seedsmen, florists, and others in districts where the reasonable requirements of the public were not provided for. The local authorities in many districts have administered this provision in a spirit wholly contrary to the intentions of the Act, and have granted licences in places where the supply of chemists' shops in which these articles are sold is more than adequate to meet the needs of farmers and gardeners. It appears, very unfortunately, that so long as the local authorities comply with certain technical formalities there is nothing to prevent them from multiplying indefinitely the sources from which these potent substances may be obtained. The Act also invested the Council of the Pharmaceutical Society with powers to make by-laws to require candidates for the qualifying examination to produce evidence of having pursued a specified course of study, and this question of establishing a curriculum has been referred to a committee of the Board of Examiners who, it is expected, will present a report early in the new year. The society was also empowered to make by-laws to accept for registration in lieu of examination the assistants' certificates of the Apothecaries' Society, but the President has publicly stated that any person who desires to become registered as a pharmacist will have to produce evidence of having attained to such a standard of education as is reflected in the society's examination. provisions requiring the exhibition in every chemist's shop of the certificate of the registered person in charge, and for the registration of the superintendent of that part of the business of any joint stock company relating to the sale of poisons, have been well observed, and there can be little doubt that the sale of poisons is under more effective control than was formerly the case.

Before passing from the consideration of the administrative functions of the Pharmaceutical Society, it should be mentioned that it is intended in future that pharmacists trading under names other than their own shall strictly observe the provisions of Section XVII. of the Pharmacy Act, 1868, which requires that all poisons sold by retail shall be labelled with the name and address of the seller, the "seller" being the person on whose behalf the sale is made —that is to say, the person who owns the shop. The society holds the view that the "trade name" is not sufficient to comply with the law, and this view has been upheld by the magistrate at Old-street police court. A trade name may still be used, but on poison labels the actual name of the owner of the shop must also appear. Compliance with this provision will obviously work to the advantage of pharmacists as distinguished from companies, and will make for better administration of the law. The inclusion of sulphonal in the new Poison Schedule has apparently had the effect of enlarging the sale of non-scheduled soporifics of a like nature in proportion to the diminished demand of the scheduled substance. This suggests a further extension of the list of poisons.

The Parliamentary Fund.

It will be observed that the statutory conditions governing the practice of pharmacy are far from satisfactory, and very tardily pharmacists have come to the conclusion that it would be to their interests to secure direct representation in Parliament. Accordingly, some months ago a Parliamentary fund was started and its committee chose as the pharmacists' representative the candidate who has now been selected to

contest the Stepney Division in the Liberal interest. Should' the fund be sufficiently well supported it is intended to select a second candidate, and in order to avoid any difficulties which party politics might occasion the second candidate will be a Conservative. One important matter which would necessarily engage the attention of a pharmaceutical Member of Parliament is the question of dispensing in public institutions. Considerable dissatisfaction has been aroused by the attitude of the Home Secretary, who gave a negative reply to a question asked in the House of Commons as to whether he would consider the advisability of introducing legislation to provide that the dispensing of poisons in public institutions should be subject to the same restriction as their sale in chemists' shops and placed under the control of registered pharmacists.

Secret Remedies.

The question of the sale of secret remedies has again been engaging the attention of pharmacists, to many of whom this traffic is revolting. The number of chemists' shops in Great Britain is between 9000 and 10,000, but the number of traders licensed at the present time to sell so-called "patent" medicines is over 40,000. The majority of pharmacists cordially support Captain CRAIG in his endeavour to persuade the Government to appoint a Select Committee to consider the advisability of requiring makers of proprietary medicines to disclose the composition of their preparations.

Scientific Progress.

For the advancement of pharmacy, in its scientific aspect, it is customary to rely, to a considerable extent, upon the British Pharmaceutical Conference, and upon a few independent workers who usually place their results before the evening meetings of the Pharmaceutical Society which are held during the winter in London and Edinburgh. The papers contributed at the conference meeting this year included several of practical value, brief abstracts of which have already appeared in THE LANCET. In passing, attention may be drawn to a paper inspired by the proposed increase in the duty on spirit which has proved a costly proposal topharmacists, since this paper suggested cases where the proportion of alcohol might with advantage be reduced and also where glycerine and acetic acid might replace it without disadvantage. The papers communicated to the Pharmaceutical Society have been of average importance and in many instances of especial interest to those who pursue their calling in its higher branches. The pharmaceutical papers read at the International Congress of Applied Chemistry held in London in May were not, taken as a whole, of such a high standard as was expected, but a few of them will undoubtedly serve a very useful purpose, more especially those relating to the question of international standards. The Hanbury medal was this year presented to Dr. TSCHIRCH, who succeeded to FLÜCKIGER'S chair in the University of Berne, and with him produced one of the best known standard works on pharmacognosy. The Committee of Reference in Pharmacy to the Pharmacopæia Committee of the General Medical Council presented a report early in the year which embodied some important recommendations. No doubt the pharmacy of the next British Pharmacopœia. will bear evidence that the experienced pharmacists who form the committee have expended a considerable amount of time and brought mature consideration to bear upon the work entrusted to them.

CHEMISTRY.

The year has witnessed very few brilliant practical announcements from the chemist, and on the whole it would seem that theoretical considerations have received the largest share of attention. What has been called "the new chemistry" has clearly come to stay, and the old school of

thought which scoffs at the theory of ions is receiving warning to set its house in order.

Radio-activity.

The study of radium and of radio-activity in general is calculated to receive considerable impetus from the formation of an institution (the Radium Institute), in which the physiological and therapeutical effects of radium salts and their emanations can be advantageously observed. Also it was announced during the year that radium is to be both quarried and recovered from its ore in England, and a process is soon to be begun at works in London, which, owing to the investigations of Sir WILLIAM RAMSAY, succeeds in recovering radium from pitchblende in a comparatively short time. Meanwhile, chemists and physicists are working hard on the problem of the nature of radium emanations, and medical men are devoting their attention to such questions as the way in which these emanations act and their effect upon tissue. An oxidising property is one hypothesis which receives support from the fact that the B-rays, at any rate when they act upon distilled water, produce hydrogen peroxide. A similar effect has been shown to be produced when the ultra-violet rays act upon water. One of the most promising fields of study is that of the ultra-violet rays; and since these rays are capable of producing ozone, oxygen, hydrogen peroxide, and act as powerful germicides, besides taking a share in the assimilative processes of plant life, there seems to be little doubt that the human race owes much to them.

Tons.

There are not a few scientific men who are opposed to the theory of ions, but unsatisfactory as a theory may be, in the light of every consideration it is convenient to retain it when facts which fit it so well are not wanting. We have all along maintained that the chemist's and physicist's view of electrolytic dissociation, or the resolution of a salt into its negative and positive ions, would mean something fresh in therapeutics. Events have justified this prediction. The application of the theory of ions in medicine is now an established fact. The chemical actions, and consequently the toxic. antiseptic, and therapeutic actions of electrolytic substances, are almost exclusively the actions of their ions, and the grouping of the ions determines definite physiological action. Take, for example, the action of the new organo-arsenic and organomercury compounds. Arsenic and mercury are, relatively speaking, non-toxic in the form of complex salts such as the cacodylates, atoxyl, and so forth, because the arsenic and mercury exist in a complex ion instead of, as in the case of the arsenites or mercurials, in a simple ion in which the identity of the poisonous metal is not lost. Medical ionisation, kataphoresis, or iontophoresis are the terms used to imply the introduction of ions of different sorts into the tissues of the human body, the body itself being a reservoir of saline solution containing many ions. Treatment by ions or by electrolytic dissociation means in reality a steering of an active therapeutic group to the area in which the application is required. As an illustration-if we want to silver plate copper we make the copper the negative pole in a solution of silver salt, and on passing a current of electricity through the solution the positively charged silver ions attach themselves to the copper. The application of the ionic theory in several branches of medical practice has been favourably reported on during the year.

The Ether.

The presidential address at the British Association for the Advancement of Science, which was delivered at Winnipeg by Sir J. J. THOMSON, referred chiefly to facts about the ether, that mysterious medium of all light vibrations. The importance of the ether to all lies in its function as a transmitter of energy. If it were a resistance instead of a conducting

medium it is easy to prove that life would cease. Ether must possess an interest for medical men, since without an acknowledgement of its existence we are left little chance of arriving at an intelligible explanation of the nature of the action of so many kinds of rays in the treatment of disease.

Transmutation.

Sir WILLIAM RAMSAY has continued his work upon the effect of radium energy upon the elements, but so far no startling progress has been reported. An experiment was recorded, however, during the year, from which the author concluded that gold had been converted into copper by merely exposing the former metal in a pure state to the influence of high potential discharge. We have not seen any further reference to the experiment nor to any other experiments which could be quoted as confirming the alleged initial result.

Food from the Air.

CAVENDISH little thought that his classic experiment in 1781, in which he produced small quantities of nitric acid from the nitrogen of the air in a eudiometer, was going to possess anything more than a theoretical importance. Yet such has been the progress made in the direction of utilising natural forces that at the present day hundreds of tons of nitrate available for the fertilisation of the soil are being manufactured from the nitrogen of the air by the agency of water power and electric potential. The probability is that the output of air saltpetre will soon amount to 100,000 tons per annum. The world need therefore have no fears as to the source of its supply of nitrogen available for the needs of plant and animal life.

Silicon as a Substitute for Carbon.

Organic chemistry has been defined as the chemistry of carbon compounds, but Professor EMERSON REYNOLDS has shown that silicon may enter into the composition of protoplasm in the place of carbon. Under suitable conditions, he points out, a plant or an animal organism may be able to construct from silicon compounds, ultimately derived from the soil, something akin to silicon protoplasm for use in its structures. In marine life, at any rate, silica appears to be used in cell production. The beautiful spicules found in the sponge appear to be definite growth from cell protoplasm. The sponge would seem to appropriate the silica of the sea and to use it in cell production, evolving "the beautiful and minute siliceous spicules which are so abundant throughout the structure of many sponges." It is well known that silicon can be made to replace carbon in a number of definite chemical compounds.

Our review of the salient features of chemical researches during the year is necessarily brief, but enough has been quoted to show how valuable is the work of the chemist in throwing some light on life's many problems.

CONTRIBUTIONS FROM THE LANCET LABORATORY.

The principal work in THE LANCET Laboratory this year has been the investigation into the question of the Standardisation of Disinfectants. The result of this inquiry has been published recently in THE LANCET (Nov. 13th, 20th, 27th), and our readers will readily see from the report that it entailed a considerable amount of laboratory work. We believe that the report sets out a fair statement of the composition of the disinfectants which are commonly sold to the public, and it would appear that reliance is placed now chiefly upon the coal-tar preparations, which contain phenols or phenoloids of ascertained germicidal power. While we know that this report, based upon a considerable amount of chemical and bacteriological work, adds considerably to our information upon the variations both as regards chemical constituents and bactericidal power of commercial disinfectants, there are opened up further questions, the

principal of which is the actual value of these disinfectants under the exacting conditions of practice. As yet no reliable estimate has been prepared by anyone of the value of disinfectants when employed under practical conditions. The order of merit obtained in bacteriological experiments may be modified when we come to practical considerations, but that is an important branch of the question which has as vet not received definite attention. It is quite clear from our report that the present position of the sale of disinfectants is unsatisfactory, for it is shown that the actual percentage of germicidal constituents varies enormously, whilst the price for a definite volume of the coal-tar fluids is for all practical purposes uniform, it being remembered that all of them become cheaper if bought in bulk. We do not claim to have reached a final settlement of the many questions involved, but we submit that we have cleared the issues.

In the early part of the year we received from our correspondent in Peking a number of preparations which were being sold in China as anti-opium remedies. In the majority of cases these "opium cures" took the form of pills, and of 12 samples examined it was shown that not less than 75 per cent. of them contained a marked amount of morphia. The wickedness of this business is evident.

An interesting observation was made in THE LANCET of Jan. 2nd, when an analysis of the snow which fell heavily in London in the week previously was made in THE LANCET Laboratory. The result showed a remarkable amount of ammonia and sulphuric acid in the snow, which proved that these contaminations were due to the domestic fire. It was calculated that the fall was so heavy that hundreds of tons of sulphuric acid and ammonia must have been brought to earth.

In an inquiry made by our Special Commissioner into the filthiness of flock used for bedding several samples were referred to the laboratory for examination. The results appeared in The Lancet of Jan. 23rd. They showed the offensiveness of the untreated flock and its inoffensive character when washed and sterilised.

In THE LANCET of March 6th an interesting comparison based on analytical results from the laboratory appeared between the composition of a weekday and a Sunday fall of snow. The differences were quite remarkable, the Sunday snow showing roughly one-fifth less of the impurities present in the week-day snow, the differences being due chiefly to sulphur compounds and tarry products.

The report of the Royal Commission on whisky and other potable spirits appeared in August and we commented upon it in a leading article in THE LANCET of August 14th. The question of the desirability of exercising further control over the sale of potable spirits had, we believe, its origin in the practical interest we have taken in the subject. We confess that the report was disappointing, and should but little advance upon the conclusions arrived at by a Select Committee which was appointed in 1890. The Commissioners did not regard it of importance to differentiate pot-still from patent-still whisky. They concluded, moreover, that age made no difference to the suitability of the spirit for human consumption. Practical experience, we urged, was against such a conclusion. They further gave their opinion that as long as brandy was made from wine it did not matter whether it was produced in the pot-still or patent-still. We disagreed again. We welcomed, however, the recommendation that a committee should be formed of skilled persons under Governmental authority who might assist in mitigating some of the difficulties of the subject by advising on technical questions which affect both the administration of the Sale of Food and Drugs Act by local authorities and the practice of public analysts. We are not aware that such a committee has been formed.

During the year the work of special investigations in THE LANCET Laboratory involved the making of 238 analytical determinations, whilst the figures of analysis in our columns of Analytical Records amounted to 203, making a total number of analytical estimations of 441.

As is usually the case, a number of quack remedies has been submitted to the laboratory for examination, and the results have been communicated to our correspondents.

THE GENERAL MEDICAL COUNCIL.

The work of the General Council of Medical Education and Registration has been regularly chronicled in our columns throughout the year. Both the spring and autumn debates were characterised by the strict attention to business which we now expect with so much confidence that anything like a disorderly discussion, beginning on a point not germane to the topic and ending in no decision in particular, would come as a great surprise. Yet such debates have occurred in the history of the Council.

The personnel of the Council has been altered during the year in several ways. The death of Dr. J. LINDSAY STEVEN, cut off in his prime, deprived the Council of one of its most clear-headed and well-informed authorities on medical education, while the retirement through ill-health of Dr. P. H. PYE-SMITH and Dr. ALFRED H. Young left blanks which, though admirably filled, can still be felt. It has now been definitely decided to add to the General Medical Council an additional Direct Representative of the medical profession for England and Wales, and the new member will bring the number of the Council up to 35. We have always considered it essential that the medical profession as a whole should have a voice in the affairs of the General Medical Council, especially because the penal authority of the Council is at the same time so delicate in its work and so tremendous in its issues. In a sense, of course, every practitioner is represented on the Council by the representative of his educational body, of his university, or of his corporation, but there has always been a need for voices in the discussions which owe no allegiance to anyone save the constituency at large. We welcome the addition to the small group of Direct Representatives.

The Council has been during the year able to play an important part in medical politics, and one no doubt which will be felt in the actual constructive legislation of the future. The Council has made representations to the Government through the Privy Council with regard to the appointment of a Royal Commission to inquire into the full effects produced by the unrestricted practice of medicine and surgery by unqualified persons, and the Lord President of the Privy Council is now making preliminary inquiries on the subject through the Local Government Board. The Council has also presented its views to the Privy Council on the question of a Bill for the Registration of Nurses, and Sir DONALD MACALISTER has been able to say that there are grounds for believing that the executive committee of the Council will be entrusted, in any legislation which may occur, with some such supervising authority as is now vested with regard to the Midwives Act in the English Branch Council. In respect to the very difficult question of legislation on the administration of anæsthetics the Council arrived, following the recommendations of its Anæsthetics Committee, at some sagacious resolutions which, while leaving unchanged the present position of the qualified dentist, provide in the public interest that the administration of anæsthetics should be restricted by law to practitioners on the Medical Register, with the additional qualification that in ordinary circumstances the single-handed induction of unconsciousness during any medical, surgical, or dental operation was held to be inexpedient. It is certain that the Departmental Committee of the Home Office, which has the whole question

of anæsthetics under its consideration, will attach the first importance to the views of the Council.

The other great matter debated by the Council was the report of the Education Committee on the distribution or the medical student's time between the several parts of the curriculum. This report has long been before the Council, and the interesting debates which it, and the suggestions arising out of it, have produced have been regularly reported in our columns. The Council has arrived at the conclusion that the regulations apportioning the student's time between the preliminary and final subjects should be so framed as to ensure that the study of the final group of subjects should extend for not less than two years after passing the examination in anatomy and physiology. This is, to a certain extent, the adoption of what is known as the "block" system, and the objections to that system are as well known as its advantages are obvious. In the last of a series of special articles on Medical Education, which we publish this week (p. 1935), this particular question is touched upon, while the whole series testifies to the valuable labours of the Education Committee of the Council. Many questions with respect to the medical curriculum are still left open for discussion, and the increasing scope of medical education will inevitably add to these questions. Council, in accordance with its duty as the central educational authority of the profession, will continually have to debate the matter of the curriculum, but great order will be brought into these discussions by the definite position which it has now reached. For the Council the year has been a quiet but an eventful one.

THE BRITISH MEDICAL ASSOCIATION.

During the year the petition for a Royal Charter of Incorporation made by the British Medical Association has been under the consideration of the Privy Council, and although certain objections have been raised against its grant by other bodies, who consider that it infringes their privileges, we understand that the objection which was threatened from within the ranks of the Association at the end of last year has been dropped by mutual agreement. As usual, the great public event of the year in connexion with the Association was the annual meeting for scientific and social intercourse, and the success of the July gathering at Belfast has never been surpassed Not only were many of the papers read of an unusually high level, but the hospitality of the city and the excellence of the arrangements at Queen's College (now Queen's University), where the meetings were held, made the occasion extremely pleasant for the members and guests who attended. Unhappily, Mr. SIMEON SNELL, the President elected at last year's meeting at Sheffield, had died before the completion of his year of office. It fell upon Mr. SINCLAIR WHITE, his successor, to induct Sir WILLIAM WHITLA into the chair of the Association and to discharge Mr. SNELL's other duties, which he did to universal approval. Sir WILLIAM WHITLA delivered his official address to a very large audience, taking for his subject "The Belfast Medical School: A Survey of the State of Medical Education: Necessary Reforms, and the Queen's University of Belfast." The address in Medicine on "Progressive Medicine and the Outlook on Tuberculosis" was delivered by Dr. R. W. PHILIP; the address in Surgery on "Progress in Intestinal Surgery," by Mr. A. E. BARKER; and the address in Obstetrics on "The Present Position and the Future Developments of Obstetric Medicine," by Sir John W. Byers. All these addresses, besides the proceedings of certain sectional meetings connected with public health and tuberculosis, were attended by the Viceroy and Lady Aberdeen, and the official notice thus bestowed upon the meeting had its

social effect. The scientific work was done in 17 sections, of which that concerned with Hæmatology and Vaccine Therapy, under the presidency of Sir ALMROTH WRIGHT, made its first appearance on the programme. The speeches of Professor Bordet and Professor Calmette gave an added distinction to the debates of this section. The usual annual exhibition of foods, drugs, instruments, and books was held during the meeting, and was described in our columns, and a particularly interesting feature was an exhibition of old and valuable medical books and MSS. under the auspices of the Medical Library Association, a body having objects which were brought prominently forward by an address delivered by its president, Professor WILLIAM OSLER, on "The Medical Library as a Factor in Post-graduate Work." The meeting was brought to a close by the usual visits to places of interest in the neighbourhood. Contrary to custom, the place of meeting for the next year was not announced until after the Belfast gathering, but it has since been decided to meet in London in 1910 under the presidency of Mr. BUTLIN.

THE SIXTEENTH INTERNATIONAL MEDICAL CONGRESS.

The Sixteenth International Congress of Medicine met this year at Budapest from August 29th to Sept. 4th. The management of the Congress was excellent. The members, in spite of their great number, had no difficulty in finding their correspondence, their invitations, and the various books and documents that were distributed, and even in regard to lodgings there were no complaints. Over 4300 congressists assembled, including the 900 ladies who accompanied them. At some of the receptions there certainly was an unpleasant crush, and on one occasion the cloakroom arrangements broke down. On the other hand, at some of the receptions, notably that given in the name of the Hungarian Government by the Count and Countess APPONYI in the Park Club, the guests experienced no overcrowding and no difficulty even at the supper table. As for the opening ceremony and the reception at Court, the pageant on both occasions was remarkably brilliant. On several occasions, both at official and private gatherings, some very remarkable speeches were made, and prominent among these was the inaugural discourse delivered by His Imperial and Royal Highness the Archduke Joseph. Speaking words of welcome on behalf of the Emperor, the Archduke, in very emphatic language, proclaimed himself an advanced social reformer. He declared that every living being had "a right to happiness," and that to be at the service of humanity, to consecrate all the physical forces and intellectual faculties which GoD has given to the welfare of our fellow-being, constituted an ideal existence. It is because the medical profession was so largely devoted to the good of humanity that the Archduke was glad to welcome its representatives.

Though the Budapest Congress was much better organised than many of its predecessors, nevertheless a strong feeling has prevailed for many years that too much is left to local organisers and to chance. There is a lack of continuity in these congresses. The towns where they are held are apt to vie with each other in the endeavour to attract a record number of members. Yet it is quality rather than quantity that is needed, and the greater the number of members attending a congress the more difficult it is to organise their work in an effective manner or to receive them properly. In these circumstances, it was determined to bring about, not a constitutional reform, because the trouble rests in the fact that there is no constitution, but the substitution for a few unwritten traditions of a real and definite system of management. These congresses not only have had no constitution, but they have had no machinery wherewith to

make one. Certainly the presidents and secretaries of the national committees, the leaders of Government delegation, and the local executive committee managing the congress generally meet while the congress is sitting and form a sort of governing body. Though possessing no clearly defined function or authority, the international committee thus formed was the only body to which a proposition to draw up a constitution could be submitted. There were two such proposals. One emanated from Professor Calman Müller and the Budapest committee, the other from the British branch of the International Association of the Medical Press. The former was very brief and did not cover the whole ground; the latter was more complete and more carefully worked out. The former had the advantage of being printed and submitted to the national committees before the Congress met; the latter came in the form not so much of an amendment, but as an elaboration, and was only presented when the International Committee described above met at Budapest. This meeting was of such short duration that nothing approaching to a proper discussion could be held. The proposal emanating from Budapest was hastily adopted, together with some additions taken from the proposals of the British branch of the International Association of the Medical Press. The main result attained is that a Permanent International Commission for the Management of the International Congresses of Medicine is now created, and that these congresses are to meet every fourth instead of every third year. On this Commission the International Association of the Medical Press is to be represented by its President. The headquarters of the Permanent Commission are to be at The Hague, with the power, however, of meeting wherever and whenever convenient. The presidents and general secretaries of past congresses are to be ex-officio members, and one delegate elected by each national committee, with the press representative, are to form the Commission. As there are many things for them to organise and to do it is to be hoped that they will soon hold a meeting. There is much waste of energy, time, and money at these congresses, which could be avoided if they were preceded by more detailed preparation and a process of sifting to prevent repetitions and stale communications. The fact that measures have now been taken and a permanent organisation created to look after all these questions is a new departure and the most salient fact connected with the Sixteenth International Congress of Medicine.

At the final session of the Congress Dr. F. W. PAVY, on behalf of the Government of Great Britain, tendered a formal invitation to the Congress to hold its next meeting in London in 1913. The invitation was accepted with acclamation, and cordial messages to that effect were forwarded to King Edward and to his Minister for Foreign Affairs. This is the first occasion on which the British Government has officially invited a scientific gathering to meet in this country.

With regard to the scientific fruits oft he Congress, a very large number of papers were read and discussed in the 21 sections in which the work was done, and they will be available in due course in the official publications. It was obviously impossible for us to give a full account of the proceedings of so large a body, as they will fill probably over a dozen ponderous volumes; and whilst presenting our readers with abstracts of the papers dealing with the subjects of most general interest in each section, we selected for particular notice the proceedings devoted to naval and military medicine, tropical medicine, and questions of quarantine as being of true international importance.

Five addresses were delivered in plenary congress, and of these the most important were given by Dr. E. F. BASHFORD, director of the Imperial Cancer Research Fund, on "Oancer

in Man and Animals," which we printed in full, and by Professor M. KUTNER of Berlin, who spoke on Post-Graduate Courses. Professor BACCELLI of Rome took for his subject "Intravenous Medication," whilst the discourses of Professor Laveran of Paris and of Professor J. Lobe of Berkeley, U.S.A., were concerned with the "Etiology and Prevention of Tropical Diseases" and with "Parthogenesis in its Bearing on the Physiology and Pathology of the Cell" respectively.

We recorded the resolutions passed by the Section of Maritime and Tropical Medicine to the effect (1) that dysentery in any of its forms should be added to the list of compulsorily notifiable diseases in all countries, and (2) that the attention of the Powers be called to the new danger for the spread of plague and cholera caused by the opening of the Hedjaz Railway and asking that the subject may be submitted to the consideration of "a competent assembly." We also recorded the excellent suggestion advanced by Lieutenant-Colonel W. G. MACPHERSON, R.A.M.C., that the nations should adopt a uniform system of colour tallies indicating the severity of a wounded combatant's condition.

A joint discussion which excited much popular interest was held by the Medical, Surgical, and Gynæcological Sections on the Treatment of Appendicitis. The balance of opinion was in favour of a more expectant treatment than has recently been in vogue, but there was not the wholesale condemnation of operative treatment that was recorded freely by the daily press. Other important debates were held on Immunity and Anaphylaxis and on the Application of Laboratory Work to Clinical Medicine, with special reference to Sero-Diagnosis, which were fully summarised by one of our special correspondents.

We have alluded to the general address on Post-graduate Courses delivered by Professor KUTNER. Therein he gave an account of the post-graduate institution over which he presides in Berlin, and maintained that not only should medical men look upon post-graduate study as a normal part of their life-work, but that they should be given all reasonable opportunities of obtaining it without payment in or near their places of abode and at hours convenient to their practice. On the day following this address the medical representatives of 15 Governments, which had been in communication on the matter with the Foreign Office at Berlin, met under the presidency of Professor WALDEYER, with the result that an International Committee for Medical Post-graduate Courses was formed, with a constitution and status, which we set forth at length. This committee, the inauguration of which is in no small measure due to Professor KUTNER and his Berlin colleagues, will, it is hoped, lead to the realisation of a scheme that will not be the least valuable result of the Sixteenth International Congress of Medicine.

THE THIRD INTERNATIONAL CONGRESS OF THE MEDICAL PRESS.

On August 27th, in one of the finest meeting halls of the Budapest Academy, representatives of 13 different national associations of the medical press assembled—first as a congress, with doors open to all comers, then, on the following day, as the general assembly of the International Association of the Medical Press. The Congress was received by Professor M. DE LENHOSSÉK, President of the Hungarian Association of the Medical Press, who was able to give a very good account of the growth of the organisation in his own country. So thoroughly did the Hungarians believe in the international character of the advance of science that they published their medical papers in two and sometimes in three languages. Professor Dr. Kálmán Müller, President of the Sixteenth International Congress

of Medicine, was also present to welcome the journalists. The principal subject discussed was the question of advertisements and "puffs." On this the British section presented a report describing the resolutions carried on the subject by the British Medical Association and asking that they should be endorsed by the Congress. In principle no objection was raised, but in practice it was pointed out that the law varied in different countries. The British delegates complained that articles written in good faith were utilised by commercial houses in spite of the protests of authors and publishers. Such reproductions were against the English copyright law, though it was difficult to institute proceedings. The French and the German representatives found that it was not practical to prevent such practices. Dr. LUCAS-CHAMPIONNIÈRE related that he had even been advertised as recommending some particular make of absinthe. He had written a paper on the benefit derived from the use of oxygenated water in medicine. This was quoted in favour of absinthe to which the manufacturer had added some oxygen. Nevertheless, the lawyers whom he consulted advised him not to proceed against this absinthe dealer. There was also a great deal of discussion as to what constituted a réclame or "puff." It was agreed that this was an article in which the author was not allowed to criticise but was obliged to praise the drug, invention, method of treatment, or whatever other subject he might have to write about. A réclame therefore is a venal article which the author or the paper is bribed to write and to publish. The British position on this subject, whereby it is held that the author of a "puff" if he cannot prove an infringement of copyright is guilty of unprofessional conduct, was adopted.1 The British scheme for a permanent commission to manage international congresses was also adopted. Several speakers expressed the opinion that the representatives of the medical press who had attended and described congress after congress were most likely to be able to advise with the wisdom that springs from experience. To appoint a permanent commission for the Medical Congress was not enough. There should be a federation of the permanent commissions of the various international congresses of the allied sciences, such as tuberculosis, hygiene and demography, alcoholism, housing of the poor, school hygiene, deontology, and the congresses on special diseases. By such a mutual understanding congresses could at least be prevented from meeting at the same time. It was quite impossible for the press to be efficiently represented at two congresses held at the same moment. One great good has resulted from the international organisation of the medical press to which the Budapest medical congress bore witness. Formerly the representatives of the press received but scanty attention and little was done to facilitate their very difficult task. Now at Budapest two special rooms were placed at the disposal of the press, and the secretaries of each section collected as far as possible the MS. summary of the different speeches which each speaker was invited to write, and placed them in the press room at the disposal of the journalists. Care was also taken to invite the press representatives to all the functions, visits to institutions, and excursions which they might desire to describe. Among other matters discussed was the question of summaries of important original articles. The Congress voted that such summaries should be translated into one or more of the international languages so that they might be more widely quoted. Finally, it should be mentioned that Professor DE LENHOSSÉK entertained all the press representa. tives at a banquet, so that the social side as well as the business purpose of this international journalistic gathering was not neglected.

Our Sanitary Commissioner visited Egypt at the beginning of the year and sent in a series of reports on sanitation in Egypt. The first subject treated was the water-supply of Cairo. Here an unfortunate enterprise has proved a great disappointment. Some two miles below Cairo and on the banks of the Nile 22 deep wells were dug which it was calculated would yield 4000 cubic metres each of pure potable water. In a little while, however, this water proved altogether unfit for domestic purposes. Manganese and iron in the water favoured the growth of the crenothrix that helped to block the pipes and turned the water black. Engine boilers were damaged, linen was stained, and vegetables could not be cooked. Finally, the supply from the wells steadily decreased, while the water was so unpopular that a great number of people preferred to drink the unfiltered Nile water. Yet the one object in digging the wells was to prevent the drinking of Nile water, for it is impossible to prevent the contamination of this river. But the people prefer the Nile water, which they have drunk for thousands of years, while in the minds of many it is sinful to drink well water, which they called "buried water." In these circumstances, we were pleased, though not surprised, to hear that the Egyptian Government has decided to abandon the wells and revert to the Nile, carefully filtering its waters.

SANITATION IN EGYPT.

The next most important subject was the drainage of Cairo. Even before the British occupation there were plans and schemes for the drainage of this historic city, but they all fell through, and the subsoil continued to be more and more contaminated by leaking cesspools. A scandalously high death-rate even among the well-to-do European population testified to bad sanitation; indeed, the soil has become so filthy that now, when at last it has been decided to build sewers, the people are panic-stricken with the fear that the digging up of the earth for the sewers will cause an epidemic. Mr. C. CARKERT JAMES, who planned and carried out the drainage of Bombay, is now undertaking the drainage of Cairo. His scheme and the difficulties that had to be overcome to secure its adoption were fully described in these columns. In the flat central districts where there is no natural fall the Shone system will be employed to raise the sewage and to propelit forward to the main gravitation sewer, which after draining several important suburbs, and notably Heliopolis Oasis, has its outfall in the desert 16 miles north of Cairo. Here is land which cost nothing, and its soil is admirably adapted for a sewage farm. Indeed, if properly managed, the produce of the cultivation of what is now mere desert should suffice to cover the working expenses of the sewage scheme. If all the slop and waste water, as well as the crude sewage, can be conveyed rapidly out and away from Cairo in water-tight sewers this will be an immense benefit, particularly as the subsoil will then be able gradually to purify itself. But there will still remain the domestic drainage difficulty. We know in England how long it has taken to teach certain sections of the population to make cleanly use of the sanitary accommodation provided. Fortunately, in Egypt the Mahomedan religion inculcates cleanliness as a part of religious ritual; therefore it is only necessary that these excellent precepts should be adapted to modern and mechanical processes to ensure the prompt and safe removal of all filth.

In Egypt, under British guidance, an admirable service has been organised for dealing with outbreaks of plague and cholera. Unfortunately, from motives of petty economy, there has been some interference with the measures taken at Alexandria. Here a new danger has arisen. The road of invasion is no longer merely from Mecca, Suez, and the South generally. There is cholera in the Caucasus also, and pilgrims from Mecca can now reach by train the Mediterranean ports of Syria. Here they embark for Alexandria, and a system of medical examination had been introduced at this port to meet this danger. It only cost £1800 per annum, but required many months to organise. For some unaccountable reason the Minister of the Interior disallowed this small sum and the Port of Alexandria is deprived of the very effective protection that had been so economically organised.

The danger caused by the pilgrimages, the need of pure water-supplies and of efficient drainage are all subjects on which much has been written and said by those who have discussed public health probems in relation to Egypt. But our Special Sanitary Commissioner brought prominently forward a very serious question which has been strangely neglected. One of the greatest necessities in Egypt is cheap fuel. In the absence of such fuel the cleanly habits of the people, by a strange contradiction, led to the dangerous accumulations of the foulest dirt. There are no less than 57 hammams, or public baths, at Cairo. These are more assiduously frequented by men, women, and children than would be the case in a European and Christian town. The institution of the hammam, or Turkish bath, should therefore contribute to maintain the general cleanliness of Cairo. The reverse is the case, and this is entirely due to the want of cheap fuel. The household refuse produced by the 644,000 inhabitants of Cairo suffices to fill daily some 600 carts. The baths take 189 of these cartloads of rubblish daily and store them in yards and dilapidated houses at the back of the baths. This rubbish is used as fuel to warm the water for the baths. For the convenience of the population the baths are situated in the centre and the most densely populated parts of Cairo, and here also are these vast accumulations of rubbish. As this waste contains fragments of food, of fruit, of vegetables, bones, and various forms of garbage, it attracts a vast population of stray cats, and the dirt they make adds to the foulness of the refuse. Naturally these accumulations provide a breeding ground for the flies that constitute one of the plagues of Egypt. The bath furnaces are also used for cooking; large jars containing beans and oil are placed in the ovens to cook. For at home what little cooking is attempted has to be done on a smouldering fire of evil-smelling dried dung. Thus cheap fuel is a really important necessity from the public health point of view.

Such refuse as is not consumed as fuel for the baths is for the most part dumped down on the immediate outskirts of the town. Thus and in the course of time perfectly flat suburbs have been converted into hilly districts. seem to be offshoots of the Mokattan range of mountains are in reality enormous dust-heaps. Here there is so much organic matter fermenting that spontaneous combustion is taking place, and many of these hills are on fire. The heat can be felt through the soles of the explorers' boots, and it is only necessary to push a walking stick down a distance of a foot or so to make a little chimney through which the smoke will come. There are acres and acres of land covered with mountains of dirt that dominate Cairo. From them dangerous dust and poisonous flies are wafted towards the dwelling houses, infecting the food on which the dust and the flies settle. To make matters worse, it is proposed to build on some of these rubbish deposits.

The scavenging service, though still somewhat undermanned and cramped for want of sufficient funds, is admirably organised. This, in the first instance, was the work of Mr. A. H. HOOKER, F.I.C., a pupil of the late CHARLES HEATON, formerly the Special Sanitary Commissioner of THE LANCET. It is now energetically and ably continued by Mr. Felix E. Powell, who has an army of

street sweepers and scavengers marshalled together in military fashion. But when he has collected all the rubbish he is obliged to sell it to the baths or dump it on the outskirts of the town. There is, it is true, a destructor, but it can only consume 30 tons per day, whereas the rubbish carted away daily from Cairo weighs about 210 tons. More than 300 cubic metres of dangerous, dirty matter is accumulated every day in the immediate neighbourhood of Cairo. Yet there is the desert close at hand, which could be rendered fertile if water as well as this rubbish could be spread out where to-day there are but arid sands.

In conducting his investigations our Special Sanitary Commissioner received courteous assistance at the Ministries of the Interior and of Public Works and from the Director-General of the Public Health Department. The Khedival Medical Society, the Egyptian Institute, and the Association of the European Press all received him with great cordiality, and many persons in their individual capacity offered to help. There was evidently a genuine desire to hear an independent opinion upon the sanitation of the city. We sincerely hope, and, indeed, have reason to believe, that the reports we published will help forward the cause of sanitary progress.

SANITATION AT SEA.

Continuing his studies of sanitation at sea our Special Sanitary Commissioner profited by his visit to Egypt to travel on one of the Austrian-Lloyd steamers and to call at the head offices and the shipbuilding yards of the company at This line enjoys the highest reputation for the courteous and careful attendance bestowed on passengers and for its excellent cuisine. This is a very important consideration. Hunger does not create the gastronomic arts-it renders them less necessary; but to tempt the appetite of a sea-sick traveller real culinary skill is required. The Austrian-Lloyd has created a school of cookery of its own which is a mixture of the French and Viennese schools with a purely Italian dishthrown in as an occasional diversion. The directors take the keenest interest in this school. There is a hierarchy of chefs and under chefs, and the staff is kept together because those who persist and acquire the rank of chef become entitled to old age pensions. The ships are for the greater part English built, but not of the most recent type. There is nothing novel in the methods of ventilation employed. On the other hand, the crews have better quarters than on English ships. The British law only insists on 120 cubic feet of space, whilst the Austrian law stipulates that seamen shall have 180 cubic feet and firemen 150 cubic feet. For the stewards there is better provision made, especially in respect to baths and douches, than is the case on many English passenger ships. Needless to say, that from the sanitary point of view it is most important that the attendants who serve the food and make the beds should be clean and in good health. New ships are to be built by this company at an early date, and then the most recent methods of warming and ventilation are to be applied. When returning from Egypt our Commissioner travelled by the French Messageries Maritimes and remained some days at Marseilles so as to make inquiries concerning this line. The Austrian-Lloyd and this French company work together. so that passengers to Egypt can go by the one route and return by the other; thus many very interesting places may be visited by those who can afford to stop on the way. The accommodation in the poorer quarters of these ships are better than what will be found on the older British ships. and the cuisine is good. At Marseilles our Commissioner was also able to visit and describe the sanitary laundry where all the linen and bedding belonging to the 68 ships of the Messageries Maritimes are washed.

HOSPITAL FUNDS.

The receipts of the three hospital funds of London have been, perhaps, adversely influenced by the state of political unrest which has dominated the country during the past year, but the result of the appeals to the charitable public cannot be called unsatisfactory. The administrators of KING EDWARD'S Hospital Fund for London have been able to distribute £150,000, an aim towards which they have been steadily working; and the year therefore, as was pointed out by the PRINCE of WALES at a meeting of the council of the Fund, held at Marlborough House on Dec. 13th, represents a landmark in the history of the Fund, as did the year 1900, when £50,000 was distributed, and the year 1903, when £100,000 was distributed.

The Metropolitan Hospital Sunday Fund.

During the year the Council of this Fund has lost by death the valuable services of the Rev. Dr. RIGG, one of the founders of the Fund, the Rev. Dr. MARKS, SIT THOMAS SMITH, SIT STEPHEN MACKENZIE, and Mr. THOMAS WAKLEY, the late Editor of THE LANCET.

Under the presidency of Sir George WYATT TRUSCOTT, the late Lord Mayor, the year's collection reached a total of £72,650 8s. 5d. It is gratifying to notice that this year there has been a larger number of contributing congregations than previously—namely, 2070. The collections in the various places of worship resulted in a sum of £39,143, being £1096 less than in 1908. The Metropolitan Cathedral of St. Paul's headed the list with £4326. The following are the largest collections from contributing churches and other places of worship: Christ Church, Lancaster Gate, Rev. Prebendary GURDON, £1001; St. Michael, Chester-square, Rev. J. G. McCormick, £761; St. Mary, Bryanston-square, Rev. Prebendary WAKEFIELD, £440; St. Mary Abbots, Kensington, Rev. Prebendary PENNEFATHER, £439; Holy Trinity, Chelsea, Rev. H. R. GAMBLE, £410; St. Peter, Eaton-square, Rev. Prebendary STORRS, £378; St. Jude, South Kensington, Rev. Prebendary EARDLEY WILMOT, £291; St. Paul, Onslow-square, Rev. Prebendary WEBB-PEPLOE, £286; St. Nicholas, Chislehurst, Rev. J. LE STRANGE DAWSON, £265; St. Paul, Knightsbridge, Rev. F. L. BOYD, £261; All Saints, Ennismoregardens, Rev. J., H. F. PRILE, £255; St. George, Hanoversquare, Rev. Prebendary Anderson, £246; St. Peter. Oranley-gardens, Rev. W. S. SWAYNE, £237; Church of the Annunciation, Portman-square, Rev. B. D. D. SHAW, £213; St. Peter, Vere-street, Rev. R. W. BURNABY, £212; St. John, Paddington, Rev. E. P. Anderson, £206; St. James, Piccadilly, Rev. Canon McCormick, £204; St. Columba, Pont-street, Rev. A. FLEMING, D.D., £241; Theistic Church, Swallow-street, Rev. Chas. Voysey, £175; West London Synagogue, Rev. Dr. MARKS (the late), £315; Great Synagogue, the CHIEF RABBI, £240; Essex Church, Kensington, Rev. F. K. FREESTON, £243; Westminster Chapel, Rev. G. CAMPBELL MORGAN, £209; Union Chapel, Islington, Rev. W. HARDY HARWOOD, £118; St. Paul Presbyterian Church, Westbourne-grove, Rev. R. ROBERTS, £101; St. Andrew's Presbyterian Church, Frognal, Rev. R. MACLEOD, £100; Greek Church, the Archimandrite, £89; Brompton Oratory, Rev. H. D. S. BOWDEN, £58; Church of Immaculate Conception, Farmstreet, Rev. C. NICHOLSON, £51; Victoria Park Christian Evidence Association, Mr. T. Cole, £67; Dutch Church. Austin Friars, Rev. S. B. DE LA FAILLE, £50; German Church, Camberwell, Rev. Professor HACKMANN, £55; Ferme Park Chapel, Hornsey, Rev. Chas. Brown, £64: Wanstead Society of Friends, Mr. THEO. GODLEE, £43; Wesley's Chapel, City-road, Rev. D. T. Young, £52; Gordonsquare Catholic Apostolic Church, Mr. H. S. HUME, £26.

The total income from the estate of the late Mr. George Herring amounted to £26,861. Mr. William Herring gave a donation of £1000, and "Delta" sent his thirtieth donation of £200. A further £2000 was received from the executors of the late Mr. Herring the balance of the legacy of £10,000 bequeathed by him to the Fund in 1901, and a legacy of £900 was received under the will of the late Mr. Edwin Gayford, and £500 on account of the bequest of Mr. C. E. Layton, deceased. The Fund has recently lost two valuable contributors by the death of Mr. J. Mackrell, who as "Delta" gave £200 annually for the past 30 years, and Mr. Lewis Mond.

A report of the annual meeting of the Fund will be found on p. 1934 of our present issue.

King Edward's Hospital Fund for London.

The present year, as has been said, marks a step in the continued progress of this Fund. The total amount received up to Dec. 9th, after payment of expenses, was £133,997 5s. 4d., which sum includes £19,000 collected by the League of Mercy. The largest donation received during the year was one of £4775 from the Franco-British Exhibition representing half the present available surplus. The annual subscriptions show a diminution. The amount available for distribution was £150,000, being £147,000 for London hospitals and £3000 for convalescent homes and consumption sanatoriums. The number of hospitals applying for grants was 103, as against 105 last year. As was pointed out by the PRINCE of WALES at a recent meeting of the council held at Marlborough House, the aim of the Fund has been to make an annual distribution of £150,000, the sum mentioned in the KING'S letter inaugurating the Fund; therefore the present year may be considered as a landmark in the history of the Fund. At the same meeting His Royal Highness called attention to the successful amalgamations of the Orthopædic Hospitals and the Hampstead and North-West London Hospitals, but regretted that the Throat, Nose, and Ear Hospitals had not yet amalgamated. The work of the Convalescent Homes Committee, which for many years was limited to the distribution of the generous donation of £1000 from the London Parochial Charities, has now been extended to dealing with the amount voted by the council for convalescent homes and consumption sanatoriums. "Considering," said His Royal Highness, "the enormous demand for accommodation in the country for consumption patients from the London hospitals, it is much to be regretted that the possible openings in this direction are at present so few. I trust that the managers of existing or of future sanatoria within reach of London will appreciate the readiness of the committee to enter into negotiations to secure' beds for the accommodation of patients from metropolitan hospitals."

Hospital Saturday Fund.

The annual income of the Hospital Saturday Fund, which was founded in 1873 for the purpose of obtaining help for the metropolitan hospitals and kindred institutions from those who were not reached through the operations of the Metropolitan Hospital Sunday Fund, now approaches, £30,000, which is obtained from some 8000 places of business. The annual report shows that help is obtained from practically every trade, friendly society, and club, the employés of the London County Council. the borough councils, the railway companies, the Metropolitan Water Board, the General Post Office, the Royal Arsenal, Woolwich; the Royal Small Arms Factory, Enfield Lock; the Royal Victoria Yard, Deptford; the Dock Companies, and so forth, and the members of the Metropolitan and City police. Since its foundation the Fund has collected and distributed among the medical charities of London £488,635. In recent years there have

been about 200 participating institutions. The Fund, recognising the great importance of early treatment in cases of tuberculosis and other chest diseases, has endowed beds at the Benenden Sanatorium, Kent; at the Mount Vernon Hospital, Hampstead, and its Sanatorium at Northwood; at the Fairlight Home, Hastings; and at the Eversfield Hospital, St. Leonards. 37 beds are at present endowed, the patients paying, as a rule, 7s. 6d. per week for the first six weeks, after which time the prices are arranged in accordance with the means of the patients and other circumstances. The sum thus received enables the Fund to assist many applicants who could not otherwise be relieved. During the present year the various departments of the Fund have made steady progress, and it is hoped that when the books are made up in January they will show a record collection for 1909. Up to Dec. 11th the total receipts of the Fund amounted to £20,442, as against £20,413 in the corresponding period of 1908.

THE CHICAGO STOCKYARDS REVISITED.

It will be remembered that in January, 1905, we published a series of articles which constituted the first effective revelation of the abominations practised in the Chicago stockyards. We use the word effective advisedly, because our denunciations were reproduced in Chicago, caused much discussion, and drastic reforms were consequently introduced the following August. The result was that, of all the meat condemned as unfit for consumption during the year, 85.5 per cent. was seized during the five months following upon the introduction of the reforms in question. It was in the course of the ensuing year, 1906, that Mr. UPTON SINCLAIR'S novel "The Jungle" appeared and brought the insanitary conditions we had described to the knowledge of a general and horrified public. Then Mr. ROOSEVELT and later the United States Department of Agriculture also took action and the criticism of this bureau on our report was fully dealt with on July 14th, 1906. Then the Legislature took the matter in hand and new laws were enacted giving the Government a better control over both food and drugs. After a lapse of four years our special Sanitary Commissioner returned in the early days of this year to Chicago to see and describe how far reforms had been realised. So world-wide an agitation it was only natural to expect would bring about many alterations. Unfortunately, the entire stockyards were planned in the absence of any sort of technical sanitary control, and no one concerned had any idea whatsoever of the conditions that should be imposed when slaughterhouses are built. No one seemed impressed with the principle that the provision of food is a public service and a public trust. Therefore the first object is that the food shall be clean and wholesome. The first object was to produce quickly and cheaply, so that the maximum profits might be secured. Therefore great factories were built that are most insanitary and absolutely unsuited for abattoir purposes. These still remain standing, but in many of them improvements have been effected. Many of the porous floors, where blood and filth leaked through and fell on the workers below, have now been cemented over and made watertight. The walls are also rendered watertight. The carcasses are now cleaned in a much more careful manner and a better system of waterbrush employed. The old wooden wheelbarrows or trucks which used to cost £7, and were so porous that they could never be properly cleaned, are being replaced by aluminium trucks that cost £17 and are perfectly cleansed by immersion in tanks of scalding water. In the early part of the year we published photographic illustrations of these details.

More marked is the vast improvement effected in the lavatory accommodation now provided for the workers. This usel to be filthy and dangerous, but is now as perfect as

good plumbing and careful ventilation can make it. One of the largest canning departments has been entirely rebuilt. Within the walls are throughout of white glazed enamelled bricks, the corners are rounded off, as in a hospital, there is plenty of light, the workers wear a clean uniform working dress, and a professional manicure is kept hard at work trimming the nails and attending to the hands of the young women employed to dress and pack the meat. Unfortunately, these sanitary principles are not applied throughout. By the side of some of the most perfect and modern appliances there still remain dark loathsome places that are quite unsuited for the dressing of human food. Many of the killing floors are still far from watertight, there are cracks and crevices where dirt can secrete itself, and worn, battered, softened, spongy wood that constitutes an uncleansable harbour for germ life.

In the United States of America, as, indeed, is also the case in England, the number of abattoir inspectors is absolutely insufficient. But the Chicago scandal has brought about a great improvement in the States, of which there is unfortunately no counterpart in Great Britain. At the commencement of the year 1906 the Federal Government employed 411 veterinary inspectors. Towards the end of the year 1908, that is two years later, the number of inspectors was 2290, of whom 702 were veterinarians. The force at Chicago was 344, of whom 108 were veterinarians. Yet in spite of this doubling of the forces they are still absolutely insufficient. On one killing floor, going backwards and forwards from animal to animal, the veterinary inspector walks from seven to eight miles in a day and is constantly stooping to examine the viscera. The descriptions we published give other details clearly establishing the fact that the staff of veterinary inspectors is altogether insufficient.

Our Commissioner dealt with the stockyards proper--that is, the yards where great stocks of live cattle and sheep are gathered together. Here no improvement has been attempted. The pens are for the most part in the open air, separated by planks of rough wood that is not even whitewashed. No precaution whatsoever is taken to prevent the spread of disease among the animals. When cattle come from a part of the country that is infected they are placed in pens separated from the ordinary and neighbouring pens by a roadway which is only 15 feet broad. The platform on which they land from the trains also consists of unpolished planks and no attempt is made at systematic cleaning. None of the regulations which usually apply to cattle markets are in force here. It does not seem as if the necessity of any special care has been realised either by the owners of the stockyards or by the sanitary authorities. From all this it will be seen that the denunciations published in these columns have borne fruit and that welcome reforms have been applied. But this only points to the necessity of continuing in the same manner to expose the defects that still survive so that they, in their turn, may be swept away.

LOATHSOME BEDDING.

At the commencement of the year we had occasion to draw attention to the dangerous character of the material employed for making beds and stuffing furniture. In other countries flock beds are not popular and are rarely used. At Glasgow, Mr. Peter Fyfe examined 3163 beds and found that 78 per cent. were made of common flock, and there is no reason to believe that Glasgow differs in this respect from other towns. Therefore the composition of flock is a matter of considerable importance. From both the chemical and the bacteriological point of view the flock of these Glasgow beds was found to be more

contaminated than the crude sewage of Glasgow. " The bacteria in one gramme of the worst specimen of unwashed flock amounted at blood heat to 4,500,000, in Glasgow crude sewage they numbered 197,000, and in the Loch Katrine drinking water 75." The fact is that flock is made by the tearing to pieces of old rags, old clothes, old bits of carpet—in fact, any sort of worn-out useless tissue. This naturally is not only very dirty material, but it may contain specific pathogenic germs, as it includes sometimes bandages that have been used for dressing wounds and unwashed underlinen soiled by persons suffering from typhoid fever and even from cholera or plague, for rags are imported from distant countries. The only safety depends, therefore, on effective disinfection of such material. The general process of manufacture is to beat these rags up in running water by which they are cleaned, though the water may be contaminated. After rinsing, the rags are dried in kilns where the heat should reach 210° F., and these two operations are supposed to ensure not only perfect cleanliness, about which there can be no doubt, but also sterilisation. Only when this has been done are the rags, &c., torn to pieces by machinery and reduced to fluff or flock. To make a single bed 30 pounds and a double bed 45 pounds of such flock are required. At the wholesale price of $1 \ddagger d$. per pound the larger bed costs $56 \ddagger d$. Our attention, however, was called to the fact that if the rags were at once converted into flock, without any previous washing or drying, the uncleaned flock could be sold with as much or more profit at \$d. per pound. Thus the material to stuff the mattress of a double bed would not cost more than 331d. For the sake of 2s. per bed, the public were asked to run grave risks, and even when acquainted with the danger, and ask for and express their willingness to pay for clean flock, have no guarantee that they obtain it. All these facts, with details and photographic illustrations, were set forth by our Special Sanitary Commissioner, who inspected mills where the raw material is washed and clean flock made, and other mills where there is no washing process, while specimens of clean and of uncleaned flock were analysed in our laboratory. The results clearly showed that the latter could not be used with safety.

THE BENEVOLENT AGENCIES OF THE PROFESSION.

The various benevolent agencies of the profession have carried out their good work unostentatiously during the past year, and it is perhaps owing to the fact that financial help is rendered without undue publicity that many of the provincial medical benevolent societies have to deplore a paucity of members. From the brief accounts that are given below it will be seen that all the societies are worthy of support, while some of the older ones are so well endowed that the advantages offered to members are far beyond any that can be given by insurance companies. One point to which we wish to draw special attention is an excuse for ceasing to subscribe which is sometimes advanced by an old subscriber-namely, that a decreasing income is a justification for the withdrawal of his subscription. One moment's consideration will show that such a financial position is the strongest possible argument for continuing to subscribe, hence the maintenance of the subscription should be managed at all costs. Those who reside in a county in which there is a medical benevolent society would do well to write at once to the honorary secretary for particulars as to membership, bearing in mind that in having the opportunity of joining such a society they are in the majority of cases reaping the benefit of the hard work, the loyal support, and the generous benefactions of those who have gone before them. In other words, membership of most of the medical

benevolent societies is a privilege of which those medical men who are more or less dependent upon the practice of their profession should be but too eager to avail themselves. If mechanics can see their way to save from 1 guinea to 2 guineas a year to contribute to their provident societies, and many thousands regularly do this, surely medical men ought to manage to follow their example. Several of the provincial medical benevolent societies appeal for contributions from persons who are not of the medical profession; but whilst they are perfectly justified in doing this, medical men should show that they are themselves doing their best to support their own societies.

The British Medical Benevolent Fund.

This society makes grants of money to distressed members of the profession, their widows or orphans, and provides annuities for them after they have reached the age of 60 years. The report of the committee presented to the last annual meeting shows that in the grant department there was last year an increase of £193 in the receipts, the total amount of grants distributed being £1727. It further shows that the annuity department was satisfactory, the number of annuitants having increased by three, bringing the total number up to 126. The amount distributed in this department was £2459. The grants are paid out of the subscriptions and donations of the year, and are made either in single sums or in monthly instalments, the amounts given ranging from £5 to £20. The legacies and large donations are invested, and it is from the income derived therefrom that the annuities are paid. The membership subscription is 10s. a year, and a donation of £5 constitutes a life member. The honorary secretary of the Fund is Mr. W. E. SARGANT, St. Bartholomew's Hospital, London, E.C. A guild has recently been formed in connexion with this Fund to make it more widely known and to supplement its work by giving help and practical sympathy to its beneficiaries of a more personal character than is possible in the case of the parent fund. Contributions may be forwarded to the honorary treasurer, Dr. MAY THORNE, 148, Harley-street, London, W.; parcels of clothing should be sent care of Miss RUTH WEST, 11, Chandos-street, Cavendish-square, London, W.

Society for Reitef of Widows and Orphans of Medical Men.

The report for the past year states that there are 286 members, which is but a very small proportion of the medical men who are eligible for membership. The subscription is 2 guineas a year, 25 annual payments constituting a life member. Membership is open to any registered medical practitioner who at the time of his election is resident within a radius of 20 miles from Charing Cross; but should any member move beyond the limits he does not forfeit his membership. The invested funds amount to £100,071, bringing in annually £3121 interest; subscriptions and donations amounted to £645. As the society disbursed last year in grants £3017, the value of membership is verv great, hence the directors urge upon members of the profession, especially the younger ones, the desirability of joining the society. The secretary is Mr. E. J. BLACKETT, 11. Chandos-street, Cavendish-square, W.

THE LANCET Relief Fund.

The twentieth annual report of the almoners of this Fund states that the amount distributed since its inauguration in 1889 is £6119. Last year the number of applications for assistance received was 48, but 19 of these had either to be rejected as being outside the scope of the Fund or to be declined for other reasons; 9 of the forms of application sent out were not returned to the secretary, probably owing to the fact that the applicants realised that they were not eligible for the benefits, and the remaining 20 applicants were assisted by gifts or loans of money ranging from £5 to £25. As hitherto, the assistance was rendered in some cases within

a few hours of the application being received, and in more than one instance the financial help enabled the applicant to keep his practice together when pressing monetary difficulties would otherwise have broken up his home and ruined his chance of making a livelihood. The almoners once more emphasise the fact that the Fund is not intended to relieve persons who are in what may be termed a chronic condition of distress, but solely for cases of sudden emergency, where timely financial help is likely to result in permanent benefit. It will therefore be a kindness if those who are asked to recommend cases will bear in mind that poverty alone is not a claim for help from this Fund; if it were, the available funds would be exhausted in the first month of the year. The almoners are the President of the Royal College of Physicians of London, the President of the Royal College of Surgeons of England, the President of the General Medical Council, and the Editor of THE LANCET. The secretary is Mr. C. GOOD, THE LANCET Office, 423, Strand, London, W.C.

Royal Medical Benevolent Fund Society of Ireland.

The sixty-seventh annual report of this society states that grants were made by the committee amounting to £1166, and that subscriptions, donations, and bequests amounted to £748. In moving the adoption of the report last June the President of the Royal College of Surgeons in Ireland stated that there are approximately 3000 members of the profession on the Medical Register in Ireland, but there are less than 500 contributors to the society for which he was appealing. He said that the old story of increased expenditure in awards and of diminished receipts in subscriptions was much more marked that day. The contribution that made a subscriber to the Fund was so small that no man had an excuse for not being able to help it, at some time or other, at any rate. He attributed the lack of support given to the society to the fact that many medical men do not know of the existence of the charity, and many more do not realise the value and importance of the charity and of the work done. The subscription for membership is 1 guinea annually, or for life membership £10 in one payment. The secretary is Dr. CHARLES M. BENSON, 65, Lower Baggot-street, Dublin.

Royal Medical Foundation of Epsom College.

At the last annual general meeting of the governors the council presented a satisfactory report, showing that there was a surplus on the ordinary income and expenditure account last year of £432. The fact is emphasised that a sum of £4500 must be obtained annually by means of voluntary contributions in order that the council may maintain the full number of 50 pensionerships of £30 a year for aged members, or widows of members, of the medical profession and the 50 foundation scholarships providing board, education, and clothing free of charge at Epsom College for necessitous sons of medical men. There are also 25 other beneficiaries whose annuities are provided out of special funds, and 17 pensioners have their annuities increased from other funds, the amount being raised in 14 cases to £50 a year. The council is erecting a new gymnasium, new music rooms, and a new workshop, and are providing a central heating plant having sufficient power to heat all the new buildings, together with Granville House, the large school, and the chemical laboratory. These extensions and improvements, which are now nearing completion, will probably cost over £8000; but though the sum is large the council feels assured that a consistent and definite scheme of extension is the most economical course that can be followed. They urge upon all friends of the institution to do their best to secure fresh annual subscribers to the Foundation, since death removes annually many who have been staunch supporters. The secretary is Mr. J. B. LAMB, 37, Soho-square, London, W.

PROVINCIAL SOCIETIES.

Birmingham Medical Benevolent Society.

The eighty-seventh annual report shows that in 1908 there was a falling off in subscriptions of £54 as compared with 1907, but it is explained by the fact that in the latter year a large number of arrears were paid up. The total number of benefit members for the year remained unchanged. The invested funds amount to £15,940; the total of the grants voted in 1908 was £757. The directors draw attention to the very large number of practitioners in the district who have not yet availed themselves of membership of the society. The value of the relief granted can be appreciated from the following cases: a surgeon's widow received in grants £1295 after only £7 7s. had been paid in subscriptions; a widow received in grants £1247 after £15 15s. had been paid in subscriptions; an invalided member received £686 after paying £15 15s. in subscriptions. The annual subscription is 1 guinea; the honorary secretary is Dr. J. E. H. SAWYER, 93. Cornwall-street, Birmingham.

The Devon and Exeter Benevolent Medical Society.

This society was founded in 1806, and has invested funds to the value of £3287. The subscriptions for the past year amounted to £40 19s., and the total of the annual grants voted was £70. The subscription for membership is £1 1s. annually, or life membership may be obtained by paying a donation of £21. The honorary secretary is Mr. ELGAR DOWN of Wingfield House, Stoke, Devonport. The annual meeting is held in one of the principal towns of the county, as may be appointed by the president.

Essex and Herts Benevolent Medical Society.

This society, which was instituted in 1786, granted in 1908 £320 in seven grants, ranging in amount from £20 to £80, and received £98 in subscriptions and donations. The capital is represented by £11,103 2½ per cent. Consols. The membership subscription is 1 guinea annually, but persons not of the medical profession who subscribe half a guinea per annum are constituted governors of the society and are entitled to vote in all its transactions. The secretary is Mr. Vernon Austin of Hertford.

Kent Benevolent Medical Society.

This society, which was instituted in 1787, is actively engaged in carrying on its good work. The funded property of the society is represented by £3650 2½ per cent. Consols and £1200 India 3 per cent. stock; a sum of £330 was spent last year in grants. There are 105 members who subscribe £1 1s. annually; and the value of membership may be seen from the fact that since the foundation of the society no fewer than six families have received relief exceeding £1000 in amount, whilst 16 others have received £500 and upwards. There are three honorary secretaries—namely, for the eastern district, Mr. H. G. SADLER of Canterbury; for the middle district, Dr. CHARLES E. HOAR of Maidstone; and for the western district, Mr. H. C. BURTON of Lee Park. The assistant secretary is Mr. James Wiltshier of 25, St. George's-place, Canterbury.

Lincolnshire Medical Benevolent Society.

At the 106th annual meeting of this society held last July grants to the extent of £120 were voted to widows of members in the substantial sums of £30, £40, and £50 respectively. There are 93 subscribing members of the society, the annual subscription being 1 guinea. The value of the investments is £3505; the honorary secretary is Dr. W. A. CARLINE of Lincoln.

Medical Benevolent Society for the East and North Ridings of Yorkshire (including the City of York).

The first annual report of this society shows that good progress has been made. There are over a hundred

members and many more medical men have promised to become subscribers, so that the prospects are favourable. The balance in the hands of the treasurer is £164; the annual subscription is 1 guinea. The committee expresses the hope that a personal canvass will soon be made, with a resulting large increase in the membership. It also appeals for donations and benefactions from those who are not members of the medical profession, observing that the neighbouring West Riding and Lincolnshire benevolent medical societies have received very large sums in this way. The honorary secretary is Dr. EDWARD TURTON of 1, Albionstreet, Hull.

Medical Charitable Society for the West Riding of the County of York.

The eighty-first annual report of this society states that although the list of applications for assistance is slightly shorter than that of the preceding year, the general tendency for many years has been in the direction of a rapid and almost annual increase. Whilst the society is in a position to meet any immediate requests for assistance, it must be remembered that the sum received from annual subscriptions in recent years has not equalled one-half the amount distributed in grants, and that as membership increases so does liability to claims for help. At the last annual meeting grants were made to the extent of £1625; the total value of the investments is £29,464; the annual subscription for membership is 1 guinea. The honorary secretary is Mr. MICHAEL A. TEALE of Park-square, Leeds.

The Norfolk and Norwich Benevolent Medical Society.

This society was established in 1786 for the relief of members who are incapacitated from continuing to practise, and of their widows and orphans if these do not marry. Full particulars as to the conditions of membership can be obtained from the honorary secretary, Mr. C. J. MURIEL, 42, St. Giles-street, Norwich. The annual meeting is held in the month of July.

The Surrey Benevolent Medical Society.

This society was instituted in 1812, and the last statement of account shows that in 1908 a sum of £90 was distributed in three pensions of £30 each, a sum of £70 was expended in grants to members, and three scholarships for girls and two extra scholarships for boys cost £224. The society has the right in perpetuity of nominating four scholars to Epsom College. The invested funds amount to £11,875, and there are 61 members. The entrance fine is £5, and the annual subscription £2, but the latter may be commuted according to a fixed table. The subscription is not payable for longer than 30 years, after which time the subscriber is considered a life member. A payment of £30, in addition to the entrance fine of £5, constitutes the contributor a member for life. The honorary secretary is Mr. W. A. BERRIDGE, of Redhill, Surrey.

The Sussex Medical Benerolent Society.

In submitting the fourth annual report the executive committee states that the relief of necessitous members will begin, in accordance with the rules, on May 1st, 1910. There are at present only 62 subscribing members and the invested funds amount to £302. The committee, therefore, appeals for new members in order that the society may become a prosperous one. We cordially endorse its appeal, and trust that medical men in Sussex will endeavour to secure contributions from those outside their profession, since this policy has helped to establish some of the strongest medical benevolent societies. The importance of a substantial reserve fund cannot be over-estimated. The annual subscription is 1 guinea; the secretary is Dr. L. A. PARRY, of 83. Church-road, Hove, Sussex.

HONOURS TO MEDICAL MEN.

Strictly speaking, there were no New Year honours, but early in January Surgeon-General Bomford, C.I.E., the Director-General of the Indian Medical Service, was promoted to a Knight Commandership of the Most Eminent Order of the Indian Empire, while Major Hood Orr, I.M.S., civil surgeon of the Bohraich District United Provinces, and Lieutenant-Colonel John Tasman Waddel Lerlie, I.M.S., Sanitary Commissioner with the Government of India, were appointed Companions of the same Order.

Birthday Honours.

The June list of honours contained the names of Mr. HENRY MORRIS and Sir DYCE DUCKWORTH, upon whom baronetcies were conferred. Lieutenant · Colonel W. B. LEISHMAN, R.A.M.C., received a knighthood; Surgeon-General LIONEL DIXON SPENCER, I.M.S., was made a Knight Commander of the Bath; and Surgeon-General HAYWARD READER WHITEHEAD, R.A.M.C., and Colonel DE BURGH BIRCH, A.M.O. Territorial Force, were made Companions of the same Order. Lieutenant-Colonel ROBERT NEIL CAMPBELL, I.M.S., and Mr. EDGAR THURSTON, L.R.C.P., received Companionships of the Order of the Indian Empire; Professor WILLIAM JOHN RITCHIE SIMPSON, M.D., C.M. Aberd., F.R.C.P. Lond., a Companionship of the Order of St. Michael and St. George; and Dr. TEMULJI BHIKAJI NARIMAN the Kaisar-i-Hind gold medal. Sir HENRY MORRIS, the late President of the Royal College of Surgeons, is well known to all medical men as surgeon, anatomist, and authority on medical education, as well as for his munificent gifts to the Middlesex Hospital and his energetic work in support of Epsom College. Sir DYCE DUCKWORTH is well known as a consulting physician to St. Bartholomew's Hospital, and has been medical referee to the Treasury since 1894 and treasurer of the Royal College of Physicians of London since 1884. Lieutenant-Colonel Sir W. B. LEISHMAN is distinguished for his researches in bacteriology and protozoology, as appears from other sections of this annual summary. Surgeon-General Sir LIONEL DIXON SPENCER is an honorary surgeon to His Majesty. Surgeon-General HAYWARD READER WHITE-HEAD is principal medical officer, Southern Command; Lieutenant-Colonel ROBERT NEIL CAMPBELL is officiating Inspector-General of Civil Hospitals in Eastern Bengal and Assam; and Mr. EDGAR THURSTON is the superintendent of the Government Central Museum of the Province of Madras. Professor WILLIAM JOHN RITCHIE SIMPSON has done admirable public service in plague.

In the November list were the names of Mr. HENRY WILLIAM NEWTON, L.F.P.S. Glasg., Mr. JAMES MATTHEW MOODY, L.R.C.P. Edin., M.R.C.S. Eng., Mr. GEORGE HERBERT POLLARD, M.P., M.D., C.M. Edin., who received the honour of knighthood, and Mr. JAMES AUGUSTINE HARAN, M.D. Dub., who was made a Companion of the Most Distinguished Order of St. Michael and St. George. Sir HENRY WILLIAM NEWTON is the "father" of the city council of Newcastle and has done excellent work in the interest of public health. Sir JAMES MATTHEW MOODY has been the medical superintendent of Cane Hill Asylum for a quarter of a century. Sir GEORGE HERBERT POLLARD, M.P., is a barrister-at-law of the Inner Temple, and has been a Member of the Eccles Division of Lancashire since 1906. Mr. JAMES AUGUSTINE HARAN is a medical officer of health at Mombasa in the East Africa Protectorate.

Royal Victorian Order.

In connexion with the visit of the King of Portugal to this country His Majesty the King conferred upon Dr. DE MELLO BREYNER, Physician in Ordinary to King

Manuel, the Commandership of the Royal Victorian Order. During the year Colonel Charles Edward Harrison, honorary surgeon to His Majesty, Brigade-Surgeon-Lieutenant-Colonel, Grenadier Guards, was made a Commander of the Royal Victorian Order, and Fleet-Surgeon Cyril James Mansfield, R.N., was appointed a Member of the Fourth Class of the Order.

Forcian Orders.

Mr. EDWARD S. CRISPIN, M.R.C.S. Eng., L.R.C.P. Lond., Director of the Soudan Medical Department, Khartoum, received from the Khedive of Egypt the Imperial Ottoman Order of the Osmanieh of the Fourth Class. Mr. ARTHUR ANDREW MORRISON, M.D. Aberd., surgeon to the Deaconesses' Hospital at Alexandria, had conferred upon him by the German Emperor the Insignia of the Fourth Class of the Royal Order of the Crown. Mr. EDWARD DOUGLAS MADGE, M.R.C.S. Eng., L.R.C.P. Lond., received from the King of Roumania the Cross of Officer of the Star of Roumania. Lieutenant-Colonel J. W. T. GILBERT, R.A.M.C. (Territorial Force), received the silver medal of the Order of "Orange-Nassau" from the Queen of the Netherlands. Mr. H. STANLEY TURNER, M.R.C.S. Eng., L.R.C.P. Lond., was decorated by the King of the Hellenes with the Knighthood of the Royal Order of the Saviour. Dr. GEORGE OGILVIE received the Insignia of Knight of the Royal Order of Isabel la Catolica from the King of Spain. Staff-Surgeon ELYSTAN GLODRYDD EVELYN O'LEARY, R.N., who was on the Sutlej which was at Messina at the time of the earthquake, received the Italian Order of St. Maurice and St. Lazarus.

Among our confrères in other countries who have received honours are: Dr. RAMON Y CAJAL, the eminent Madrid anatomist, who has been appointed a Senator of the Kingdom of Spain; and Dr. SCHUMAN LECLERCQ, Carlsbad, Austria, who has been made Chevalier of the French Légion d'Honneur.

OBITUARY.

From the beginning of this year, up to and including our issue of Dec. 18th, we have had the mournful duty of inserting in our columns exactly 100 special obituaries of wellknown and highly appreciated medical men, including the notice of one whom we in this office cannot fail constantly to remember—our late Editor, Mr. THOMAS WAKLEY. We now merely recall to the minds of our readers, in order of the date of death, the names of some of those whose great records or living influence make their departure from among us a feature of the year. On the first Monday of 1909 it was known in Edinburgh that Dr. ARGYLL ROBERTSON had died in India on the previous day. He was born in Edinburgh in 1837. In 1869-70 he published in the Edinburgh Medical Journal a paper on "Eye Symptoms in Spinal Disease." It was the observations made at that time which led to his world-wide reputation and to his name being attached to the pupil phenomena of tabes. Dr. GEORGE EASTES, who died on Jan. 23rd at the age of 67, started in 1868 upon his 40 years of general practice in the West of London. He was an admirable journalist as well as a successful general practitioner, and his failure by but a few votes to secure a place on the Council of the Royal College of Surgeons of England was much regretted. Dr. JOHN LINDSAY STEVEN died at Glasgow after a short illness. He was a thorough exponent of internal medicine in all its branches, was recognised in Glasgow as one of the best of teachers and consulting physicians there, and was an influential member of the General Medical Council. Dr. CHARLES HENRY FELIX ROUTH died in London on Feb. 19th at the age of 87. He was throughout his long professional life absorbed in the study of gynecology, and was an early exponent of the

doctrines of Semmelweis. He read many papers and was a fearless debater and eloquent speaker. Professor DAVID JAMES HAMILTON, who died on Feb. 19th, was emeritus professor of pathology in the University of Aberdeen, having been appointed in 1882. He was known to the whole medical world by his textbook of pathology. Dr. Peter Horrocks, who died on Feb. 28th at the age of 56, was consulting obstetric physician to Guy's Hospital, and had been president of the Obstetrical Society. The Editor of THE LANCET, THOMAS WAKLEY, died on March 5th. He had worked together with his father, the late Mr. THOMAS HENRY WAKLEY, in the conduct of this journal for a little over 20 years, and the files of the paper testify to his energy, his fairness, his kindness, and his sense of responsibility. Dr. ARTHUR GAMGEE died in Paris on March 29th. He was born in 1841 at Edinburgh, and was, when quite a young man, emeritus professor of physiology at the Victoria University, Manchester. He came to London in the late "eighties" as physician to St. George's Hospital, but his physiological works and writings form his claim on our attention. He was without doubt one of the leading physiologists of the country. Mr. CLAUDIUS GALEN WHEELHOUSE died on April 9th. He was consulting surgeon to the Leeds General Infirmary, an important worker on the General Medical Council, and an active supporter of the British Medical Association. He was one of the three Direct Representatives for England and Wales on the General Medical Council, and during his ten years of office was an invaluable intermediary between different schools of thought on the Council. Mr. JAMES HARDIE, who died on March 27th, was consulting surgeon to the Manchester Royal Infirmary, and sat for some time on the Council of the Royal College of Surgeons of England. Dr. THOMAS CRAWFORD HAYES was emeritus professor of obstetric medicine at King's College, London, and consulting physician-accoucheur and physician for diseases of women, King's College Hospital. Dr. CHARLES BELL TAYLOR, who died on April 13th in his eightieth year, was an ophthalmic surgeon and enjoyed a deserved repute for industry and ingenuity. He was a man of strong opinions, which were not always accepted by his profession, even when their honesty and ingenuity were admitted. Mr. THOMAS WILLIAM NUNN, who also died on April 13th, was consulting surgeon to the Middlesex Hospital. A sound surgeon and a popular teacher, he had been in his day a well-known consultant. Mr. SIMEON SNELL, who died on April 17th during his term of office as President of the British Medical Association, was a frequent contributor to these columns. He was ophthalmic surgeon to the Sheffield Royal Infirmary and professor of ophthalmology in the University of Sheffield, and his work on his subject, especially in relation to diseases of occupation was famous. Dr. WILLIAM W. IRELAND, who died on May 17th, was born at Edinburgh in 1832, was a well-known writer on alienism, an ardent student of history, an independent thinker, and the author of a great book, "The Blot upon the Brain." Professor Daniel John Cunningham, who died on June 23rd in his sixty-first year, was professor of anatomy in the University of Edinburgh and the best and most learned exponent of his subject in the kingdom. Mr. EDMUND MARSHMAN RUSSEL RENDLE who died on June 23rd in his seventy-seventh year, was consulting surgeon to the Royal Plymouth Eye Infirmary, and was a prominent figure in the "Three Towns." Dr. ALEXANDER FRASER, who died on July 25th. aged 56, was the able professor of anatomy at the Royal College of Surgeons in Ireland. Dr. ARTHUR FOXWELL who died as the result of a bicycle accident on August 4th. was born in 1853. He was physician to the Queen's Hospital, Birmingham, and professor of therapeutics in the

University of Birmingham, where his premature death has left a great gap. Dr. HENRY RADCLIFFE CROCKER was born in 1845 at Brighton, and was physician to the Skin Department, University College Hospital. He had won a very great position as a dermatologist and was an important supporter of the British Medical Association. Sir STEPHEN MACKENZIE, who died on Sept. 3rd in his sixtyfifth year, was consulting physician to the London Hospital and the Royal London Ophthalmic Hospital, and had for many years occupied a prominent position as a clinical teacher and an original investigator. Dr. JOHN MILSOM RHODES, who died on Sept. 25th at Didsbury, was an ardent supporter of Poor-law reform. Sir THOMAS SMITH died on Oct. 1st at the age of 76. He was honorary serjeant-surgeon to the King and consulting surgeon to St. Bartholomew's Hospital and the Hospital for Sick Children, Great Ormondstreet, London, and commanded in his profession, and deservedly, the greatest affection and respect. Dr. WILLIAM RIVERS POLLOCK, who died on Oct. 5th at the early age of 50, was obstetric physician to Westminster Hospital and senior physician to Queen Charlotte's Hospital. Dr. JOHN HERBERT WELLS, who died on Oct. 16th at Ditchling at the early age of 30, became accidentally and fatally infected with anthrax. The circumstances of his life and death will be remembered by our readers, and a fund which has recently been raised as a tribute to his memory is still open in our columns. CESARE LOMBROSO, whose studies in psychiatry and criminal anthropology are known to the whole world, died on Oct. 19th. Mr. HENRY HUGH CLUTTON, who died on Nov. 9th at the age of 59, was senior surgeon to St. Thomas's Hospital, London. He was a man of strong character and lofty aims and a notable teacher. Sir WILLIAM THOMSON. honorary surgeon to the King, late President of the Royal College of Surgeons in Ireland, and senior surgeon to the Richmond, Whitworth, and Hardwicke Hospitals, died on Nov. 13th. He was born in 1843, made many contributions to the literature of his profession, and took an active part in educational work. Mr. ROBERT MARCUS GUNN, who died on Nov. 29th at the age of 59, was senior surgeon to the Royal London Ophthalmic Hospital, Moorfields. An accurate observer and student of nature, he was a recognised master of his subject. Mr. CHARLES ROBERT BELL KEETLEY was senior surgeon to the West London Hospital, and made a name for himself by his practical work in surgery, by his literary labours, and by his life-long association with the great Hammersmith charity. Dr. WILLIAM BRAMWELL RANSOM, who died on Dec. 9th at the untimely age of 48, was senior physician to the Nottingham General Hospital and physician to the Sherwood Forest Sanatorium for Consumption. The details of his career were published in THE LANCET too recently to need recapitulation.

We cannot close this account without referring to the sad death from an Alpine accident on Jan. 13th of Dr. John Evan Spicer and the yet more tragic death of Dr. Cawas Lalcaca, who was assassinated while trying to defend the life of Sir Curzon Wyllie at the Indian reception on July 1st in London. Lastly, we must record the death of the doyen of Irish medicine, Dr. George Ellis, who died on Jan. 26th in his 100th year.

Annotations.

"Ne quid nimis,"

A PRESCRIPTION FOR CHRISTMAS.

THE Christmas season undoubtedly has a good tonic effect upon the people which none appreciates more than the members of our profession. It has come to be regarded as a time for good cheer, and no matter how tiresome the circumstances may be which are forced upon us by life's ironies, or what painful incidents have in the past been associated with the season, there is good feeling engendered at this time of joyousness; routine is for a while relieved, a certain freshness is given to the daily round, differences of opinion are sunk, and a charitable spirit prevails. Is it, by the way, hoping for too much that the season of good-fellowship should leave some effect upon the manners and methods of political partizans? The country is being compelled to make up its mind in the course of a few days as to issues of vast importance. Patriotic and personal feelings are deeply involved. There are honest men on both sides; there are well-wishers of the people in each camp. Is it not possible for the political orator to remember this, and to infuse into his rampagings a little of that urbanity which the season calls for? To do so will be good tactics, for our minds are attuned just now to such approaches. It may not be easy to trace exactly why this sense of exhilaration and well-being comes with the advent of Christmas, for the psychological factors concerned are not simple. But the main point is that the mental state does everybody good, and the annual festivity is just as excellent an institution as the prescription of the physician which gives tone and vigour to the struggler in life's race. There is no need nowadays, thanks to the good sense of the people and the counsels of their medical advisers, to moralise about the evils of a stupid indulgence in food, alcohol, and tobacco on a festive occasion such as the present. Practically everybody realises the great physiological advantages of being wise on a merry occasion and the disadvantages of being a fool. Many more persons than formerly feel where use ends and abuse begins, and they act sensibly accordingly; and so far from its being a crime to make the season festive by enjoying, on a little extended scale perhaps, the creature comforts of life some decided good is done to both the mental and physical health of the individual. The festive season may, therefore, be welcomed which brings cheer to thousands, which induces the generous and charitable desire to help all to share in the season's joy, which serves to brace the mental and physical functions of the community at large, giving it the opportunity of relinquishing its business and its worries for a time, to start again refreshed and ready for "the trivial round, the common task." The prescription "A Merry Christmas" is sound so long as the "signature" of good sense is observed.

DISINFECTION AFTER CANCER.

WE have received a letter from a correspondent urging the necessity for careful disinfection of rooms which have been inhabited by patients suffering from malignant disease. She points out that few people would be willing knowingly to inhabit a bedroom in which a patient had died from malignant disease when no attempt had been made to disinfect the room. We think there is something to be said for the contention of our correspondent; but it must be remembered that it has never been proved that infection can occur in malignant disease. There are many cases recorded which are suggestive of this, and it would be unwise to deny

University of Oxford.—The name of Alan E. Taylor, Trinity College, was omitted in the list of successful candidates in the examination in pathology for the second B.M. degree.—In congregation on Dec. 17th the degree of B.M., B.Ch., was conferred upon D. C. Dobell; Christ Church; H. G. Butterfield, Wadham College; C. J. Z. Jessel, University College; and S. F. Moore, Trinity College.—The Hebdomadal Council has appointed Professor Francis Gotch, M.A., D.Sc., Fellow of Magdalen College, a member of the committee for the election of honorary medical officers to the Radcliffe Infirmary.

the possibility of such an occurrence when medical science is not agreed upon any theory of etiology of malignant disease. All will agree that the individual cells of malignant growth are capable in certain circumstances of transference from one animal to another of the same species, and therefore no one can deny the possibility of infection. In a very similar position stands tuberculosis. While we possess no direct evidence that the presence in a house or a room of a patient suffering from tuberculosis ever does give rise to the disease in another person, the whole teaching of hygiene of the present time is in favour of preventing the dissemination of the organism to which tubercle is due. Therefore we cannot but think that it is desirable that the room and the furniture which have been used by patients dying from malignant disease should be thoroughly cleansed and disinfected, and especially should this be done when the malignant growth has been situated on a surface so that a discharge has come from it. It is easy to demand proofs of the risk arising from such discharges; it is difficult to produce them. Nevertheless, we feel that it is only in accordance with the principles of modern hygiene to endeavour to the best of our ability to disinfect all discharges from persons who have suffered from malignant disease. This is not the same as saying that we ought to insist by legislative enactment that such disinfection should be carried out, but medical thought is tending in a direction which would be supported by public sentiment.

TYPHOID CARRIERS IN THE ARMY.

THE Director-General of the Army Medical Service has presented to Parliament his second report on the Transmission of Enteric Fever by the "Chronic Carrier" in a White Paper, which includes a series of charts illustrating the progress of the cases under treatment by specific vaccines. The report concludes with the following recommendation of the Advisory Board: "That since arrangements are now being made for early treatment on discovery of these cases, it is desirable that any man ascertained to be a 'carrier' should, after a period of observation in England not exceeding three months, be discharged from the service, unless he elects to remain in hospital for treatment. When any man is discharged the medical officer of health for the district in which he will reside should be notified."

THE METROPOLITAN HOSPITAL SUNDAY FUND.

THE Right Hon. Sir John Knill, Bart., the Lord Mayor, presided over the annual general meeting of the Metropolitan Hospital Sunday Fund, which was held at the Mansion House on Dec. 17th. In moving the reception of the report, which was unanimously adopted, Sir John Bell referred to the loss which the Fund had sustained by the deaths of the Rev. Dr. Marks, Sir Stephen Mackenzie, the Rev. Dr. Rigg, Sir Thomas Smith, and Mr. Thomas Wakley. Dr. Rigg was one of the founders of the Fund. Within the last few weeks two staunch supporters of the Fund had passed awaynamely, Mr. J. Mackrell, who under the pseudonym of "Delta" had contributed £200 annually for the past 30 years, and Mr. Lewis Mond. During the year about £70,000 had been divided among infirmaries, hospitals, and institutions. The collections among the various religious bodies amounted to nearly £40,000. The Rev. Hardy Harwood, who seconded the motion for the adoption of the annual report, said that the contributing congregations were larger than in previous years-namely, 2070. The Rev. S. Lewis supported the motion. He explained that the hospital for which he pleaded last year (the National Anti-Vivisection Hospital) had not accepted a grant owing to a misunderstanding as to some non-official remarks

which were made by a speaker at a previous meeting. Hospital Sunday was fixed for June 12th, 1910, and the Council was re-elected with the addition of Sir George Wyatt Truscott, Mr. J. H. Morgan, the Rev. Morris Joseph, and the Rev. D. J. Waller to fill vacancies. The Rev. S. Lewis withdrew a motion to the effect that the committee of distribution should be mainly elected by the constituents of the Fund at the annual meeting, which was intended as a protest against the suppression of reasonable criticism on the part of the constituents of the Fund. The Lord Mayor said that the right of criticism was undoubted and he thought had never been refused.

UNDER the will of the late Dr. Charles Graham, formerly professor of chemical technology at University College, London, the residue of his estate has been left to the Senate of the University of London in trust to form "The Charles Graham Research Fund." The income therefrom is to be devoted to the expenses of any approved medical research undertaken by any teacher or student of the School for Advanced Medical Studies connected with University College Hospital, and in certain instances to the provision of research scholarships in pathology at that school of £200 a year value, tenable for two years.

WE would direct the attention of graduates and students of the late Royal University of Ireland to a notice which appears in our advertising columns. As the first meeting of Convocation must take place within six months from the date of the dissolution of the Royal University of Ireland, it is very advisable that application for registration as graduates should be made without delay. All information may be obtained from Dr. Joseph McGrath, Registrar of the University, the National University of Ireland, Dublin.

Dr. R. J. Collie, medical examiner to the London County Council, has issued a report on the health of the employees for the five years from August, 1904, to August, 1909.

A TELEGRAM from the Governor of Mauritius to the Secretary of State for the Colonies has reported 17 cases of plague with 13 deaths during the week ending Dec. 16th.

PROPOSED MEMORIAL TO PROFESSOR D. J. CUNNINGHAM.—Some time ago a circular was issued signed by the Principal of the University of Edinburgh and the Presidents of the Royal Colleges of Physicians and Surgeons of Edinburgh, stating that it was proposed that steps should be taken to institute some memorial of the life and work of the late Professor Cunningham, and calling a meeting to be held on Dec. 15th. At this meeting it was decided that Edinburgh should coöperate with Trinity College, Dublin, where steps were also being taken with the same object in view. What was spoken of was a medallion and a medal in anatomy. A small committee was appointed with Professor Crum Brown as convener.

ROYAL ALBERT HOSPITAL, DEVONPORT.—At the recent annual meeting of the subscribers of the Royal Albert Hospital, Devonport, the report stated that for the year ended Sept. 30th last the in-patients numbered 771, an increase of 50 compared with the previous 12 months. In the casualty department 2696 cases had been treated, against 2413 in the previous year. 943 patients were treated in the out-patient ophthalmic department, compared with 913 in the preceding 12 months. 208 patients were sent to the Pearn Convalescent Home, being 31 in excess of the previous year. The financial statement showed the expenditure was £4768, and that an unfavourable balance of £587 remained. The President (Lord St. Levan) alluded to the support of the working men, who had subscribed £615 during the past year, and made a strong appeal for increased financial support.

SOME CONSIDERATIONS OF MEDICAL EDUCATION.

VIII.1

Neither Teacher nor Taught at Fault.—The "Block" System.— The Science Student at the Public School.

In the previous chapter it was pointed out that it was allowed on all hands that the medical curriculum was over full, or, to put it in other words, that the statutory time of five years did not seem to be sufficient to allow a fair proportion of students to obtain their qualifications. Something over 80 per cent. of the students occupy more than the statutory five years in their attempts to obtain a place on the Medical Register, and it is impossible to believe that any large proportion of these men owe a check to their professional career to inherent faults of their own, to idleness, slackness, or stupidity; and it is equally impossible to attribute this deplorable waste of effort to remissness on the part of teachers or frailty on the part of examiners. There are idle students, supine teachers, and incompetent examiners, but no one with any experience of the enormous pains now taken with regard to the machinery of medical education, or in the least appreciative of the earnest, absorbing, and generally ill-paid labours of the lecturers, will think for one moment that the radical trouble is any default on the part of teacher or taught.

With regard to the one-portal system, the suggestion that it would by its simplicity remedy the condition of affairs is interesting, but impractical because the advocates of this system have not, at any rate at present, sufficiently strong arguments to produce any effect either on the General Medical Council or on the legislature. The suggestion that the statutory time of the curriculum should be extended has also been dealt with, and most of us will be in agreement with what is apparently the opinion of the General Medical Council, that the time has not arrived for this. In the present position of affairs the curriculum is indefinitely extended, so that the failure of the students to meet the demands made upon them forms a practical equivalent to a statutory prolongation of the time of studentship, only this prolongation occurs in a disappointing and vexatious manner. There remains, lastly, to consider the advisability that the student should reach his medical school in a better state of preparation, so that he shall have much less trouble with his preliminary scientific subjects, and consequently more time to devote to his final subjects, and the importance of this point is enhanced by the fact that the General Medical Council has now adopted the view that for these official subjects a distinct period of not less than 24 months shall be kept sacred.

This means the formal introduction into the medical curriculum of the "block" system, which has many advocates and also many opponents. A large number of medical students having difficulty with their preliminary subjects, whether these are the ancillary subjects of chemistry, physics, and biology, or the directly professional subjects of anatomy and physiology, occupy more than three years of the statutory five years in study pursued in classrooms before they are free to attack without interruption the final subjects of medicine, surgery, and midwifery. It is certain that to a great many of these students time is of vast importance, so that they are unwilling (or their parents are unwilling for them) to postpone their introduction to clinical work until they shall have satisfied their examiners upon all the introductory subjects. To work at anatomy and physiology in the detailed way required by an approaching test examination leaves the student with but little leisure and aptitude for other studies, yet many students by industry and determination recover to a great extent the place which they have lost in the early part of the race, being able with success to conduct what are called overlapping studies. Remembering this, and

remembering also that a certain number of students are able to coach their fellows in the introductory subjects while working for the final subjects, it becomes a serious matter to compel all students to keep for any specified period the whole of their time free for clinical and pathological work. On the other hand, two years must appear to be the very minimum of time in which it is possible nowadays to acquire such a genuine knowledge of actual medical and surgical practice as would warrant any university or licensing body in granting a degree or a diploma to an applicant. Further, the pressure on the General Medical Council to make the examination in the professional subjects even more wide-ranging than it is at present-to include, for example, such subjects as anæsthetics and electro-therapeutics—has to be taken into account. Those who see no harm in a certain amount of overlapping possess a strong argument in the fact that, scientific medicine being built upon a foundation of anatomy and physiology, little but good can come of a certain amount of fusion of studies. But the more the final subjects of the curriculum tend to become multiplied or specialised the more remote becomes the connexion between them and the details of anatomy and physiology taken as a whole. All these considerations no doubt weighed with the General Medical Council in deciding that at least the last two years of the student's time should be spent in clinical and pathological work, but upon this decision follows the difficulty that now the first three years of the student's time may not prove sufficient for his preliminary scientific studies, including his anatomy and physiology.

It seems probable that here, as far as England is concerned, the public schools will come to the rescue. Inasmuch as every medical student is compelled to pass an entrance examination of a general character before commencing his medical studies—which means that he must go to school somewhere—if more of his time at school were spent in definite preparation for a medical career his curriculum would be lengthened without more money being spent than would otherwise have been spent on his education. That is to say, that the very legitimate objection on the part of the medical student, or usually of his parents and guardians, to spend an increased sum upon training for a profession which, already by no means a cheap one to enter, offers in return no great pecuniary prizes, would be to some extent met. With the continuous expansion of our knowledge in every branch of science it is at least possible, and to many it appears inevitable, that the general education of boys and girls destined for one or another of the scientific callings must give way at an earlier period than has hitherto been necessary to the special training which is to be the stock-intrade of their various careers. This means, as has been pointed out in these columns, that we may have to ask the schoolmaster to hold the balance squarely between the claims of science and the claims of the humanities upon the school hours of those of the coming generation who are to practise the profession of medicine. The influence which a capable teacher of the elements of science can exert over a lad during the last two years of school life is very great, for by the time the pupil has reached that period of his education he should have learnt how to learn, and his mind should be in its most receptive state—so much plastic material ready to be moulded into methods of accurate observation, and indued with a right appreciation of the experimental method and all that it entails. If the student brings such a training with him to a medical school he has gained a solid and practical advantage from his school-days beyond the expansion of his mind and its equipment with a store of knowledge. It is to be desired in most cases that the school-boy, who has elected to follow medicine, should receive a grounding in the principles of chemistry and physics at least before he passes the "arts examination," which is the portal to his professional studies. Of course, if time is of no object to the student he can acquire this grounding after spending a full school life in general education, but if he desires to become a medical man at the average age (and this is now about 26 years) he will make his path easier by beginning his scientific work soon after the age of 16. Many of the English public schools are now perfectly able to instruct their boys in physics and chemistry, and some of them claim to be able to give better instruction than will be obtained at certain of the medical schools, but there is still difficulty at most

¹ Nos. I., II., III., IV., V., VI., and VII. were published in THE LANCET of Oct. 23rd (p. 1232) and 30th (p. 1301), Nov. 13th (p. 1459), 20th (p. 1531), and 27th (p. 1616), and Dec. 4th (p. 1694) and 11th (p. 1766), 1909, respectively.

public schools as regards biological teaching. This for one reason has made the General Medical Council look with no great favour on the instruction of schoolboys in the preliminary scientific subjects, while recognition of schoolboy instruction as part of the statutory course must always seem unfair to Scottish, and particularly to Irish, students, where no system exists of big public schools which possess laboratories and an equipment of teachers and material for a scientific education.

But the General Medical Council has no reason whatever to be concerned whether the schoolboy takes up scientific subjects or no before he begins his statutory career: all that the Council requires is that he should begin this career by passing some examination in Arts. What has to be thought of, then, is this. The intending medical student must go to school, and his schooling must be paid tor. When he is a student he will take six or seven years to obtain his qualifications, mainly owing to his difficulties with the pre-liminary subjects. But if he works at those subjects at school he will probably only take the statutory five years to get qualified after joining a medical school, while his schooling will cost no more than if he had devoted himself to the humanities. Will his schooling be worth less? Probably not. Since the old days when apprentices were bound to a trade with many years of indenture, sometimes commencing at 12 years of age, no calling in England has seemed to require this kind of segregation except the calling of the naval officer. The tactics of the navy with regard to its officers have always been to "catch them young," but no other trade or profession at the present time considers this proceeding necessary. However partial the attempt in this direction may be, the strictly professional part of a schoolboy's educa-tion would have to be undertaken at the risk of making him as a professional man narrow. By inducting him into a purely professional educational course before he has completed his general instruction we must undoubtedly run a risk of depriving him of something that is valuable. None the less, such is the difficulty caused by the present overcrowded state of the medical curriculum, and such is the obvious waste of effort implied in the long delay which the students undergo in obtaining their qualifications, that it is quite possible that reform will come in this direction. If English students should benefit by a general move among those intending to practise medicine towards joining the modern side of a good public school, we can only conceive that the example would be followed elsewhere. And the fact is undoubted that students who are capable of proceeding to pass the examination in the preliminary scientific subjects on arriving at a medical school have an enormous advantage over their compeers. It is impossible not to sympathise with the desire of the science masters in public schools to be in proper accord with the General Medical Council and have their instruction recognised as counting as part of the statutory time of the student's career, but their instruction is none the less valuable because it is given preliminary to and not as part of the medical curriculum. At present the science masters can, as a matter of fact, dispense with the recognition of the Council if they can obtain that of any statutory body granting medical qualifications, but we see no reason why the student intending to be a medical man should not do at any rate the first year of his scientific studies before joining the medical school and concurrently with his general studies, but he must be prepared to do this as a voluntary act. It must be a matter of arrangement between him and his parents to secure for him an early start, and we cannot expect the General Medical Council to take cognisance of these schoolboy studies while only certain divisions of the United Kingdom can supply the necessary machinery.

The argument behind most of the proposals which have been discussed for the reform of the educational curriculum of the medical student was that subjects for the final examinations were neglected because the students had to spend too much time over the earlier subjects. The number and variety of the suggestions to meet the abuse prove how general was the feeling calling for these different expressions. The Education Committee of the General Medical Council showed in its interesting reports the enormous value of the work which it has done, and the Council has supported these efforts and brought order for the time being into the curriculum. By deciding definitely that 24 months must be spent by the

student in uninterrupted clinical and pathological work, the Council has taken a step which should certainly ensure much less waste of effort and of time, and much less disappointment and expense at the final end of the curriculum; but there necessarily remain for consideration the difficulties attached to the teaching and learning of the earlier subjects. Attention henceforth will be centred more upon the problems connected with these subjects, and it is probable that the position of the science masters in the public schools who desire to begin the education of the medical student when he is in his sixteenth year will receive greater attention than heretofore.

ASYLUM REPORTS.

The Twentieth Annual Report of the Asylums Committee as to the London County Asylums for the Year ending March 31st, 1909.1—This voluminous report contains a vast mass of statistics relating to the ten institutions under the control of the London County Council. The figures relating to direct admissions show that the number of patients admitted directly from the parishes have remained fairly constant for the past seven years, ranging from 3439 in 1902 and 3686 in 1903 to 3588 in 1907 and 3613 in 1908. The value of these figures as a guide to the incidence of insanity is somewhat discounted owing to their dependence on the amount of accommodation available, and for this reason a comparison with earlier years is useless. Now, however, that the bulk of London certified lunatics are housed in the county asylums the numbers of direct admissions should from 1908 onwards form an approximately correct index to the fluctuations in occurring insanity in the county. A table showing the duration of the present attack prior to admission indicates that while 1473 out of 3450 direct admissions (excluding congenital cases) were admitted within one month of the onset of the illness. no less than 508 had been mentally disordered for more than 12 months before admission, and 106 of these for more than five years. The number of patients discharged "recovered" shows a continued tendency to decline, the figure for 1908 being lower than in any year since 1902. Of the 1179 patients discharged recovered 8.06 per cent. were over 60 years of age, and 5.51 per cent. under 20. In 8.39 per cent. the attack was of less than three months' duration, and in 26.46 per cent. the attack has lasted from three to six months. Of the 1179 recoveries 621 had been suffering from recent mania and recent melancholia. Out of the large mass of registered lunacy the medical superintendents of the asylums consider that only 3.04 per cent. of the patients have a favourable prospect of recovery, 6.01 per cent. being doubtful and 90.95 per cent. unfavour-The deaths continue to show a decreasing proable. portion when calculated on the average population of the asylums. This may partly be accounted for by the accumulation of chronic cases of insanity, which. having passed the period of possible recovery, remain inmates until their deaths, often at advanced ages, thus swelling the bulk on which the proportion is calculated. In the 1540 deaths recorded, as many as 36.04 per cent. were over 60 years of age, and of these 17.14 were over 70. The report contains the conclusions of the Asylums Committee upon the report of the Royal Commission upon the Care of the Feeble-minded. Most of the recommendations of the Royal Commission embody principles which are commended to the committee by its experience in dealing with the insane, and, indeed, many follow the lines of suggestions which the committee has itself put forward at various times. committee is of opinion that the amount of laborious work laid upon it, should the recommendations be realised in legislation, would be incalculable, but it recognises that it is only by measures which deal comprehensively and thoroughly with feeble-mindedness that the tide of insanity can be stemmed. We regret that we can derive little hope from the report that the Mental Hospital devised by Dr. Henry Maudsley and for the purposes of which he has given a magnificent donation is likely to be shortly established. The necessity for an easily accessible situation in connexion with the clinic and out-patients' department, which it is intended shall be attached to the hospital, has rendered the task of selection of a site very difficult.

Correspondence.

"Audi alteram partem."

- THE THERAPEUTIC VALUE OF LIQUID AIR AND SOLID CARBON DIOXIDE.

To the Editor of THE LANCET.

SIR,—I notice in your issue of Dec. 11th the letter from Dr. Stopford Taylor and Dr. MacKenna concerning the value of liquid air and solid CO₂. Both in hospital and private work I have now had considerable experience of the value of both these remedies, and consider they have a marked therapeutic value and that there is no difficulty in regulating the pressure in either case. The liquid air we use after the method as given by Dr. Stopford Taylor, the snow with the aid of various-sized cupping-glasses, and tubes containing a sort of jack in the box spring of wool, tow, &c.

With either remedy the greatest care is necessary with delicate skins in order to prevent a serious burn, but even when this has occurred the scar tissue has been supple and of a fairly natural colour. We also prefer the liquid air to the snow, but find the former very much more costly than the latter. For lupus erythematosus I prefer to use zinc ions, but for capillary nevi and moderately shallow venocapillary nævi use nothing now but either the snow or air, applied once or twice to five or six times, and for from five to ten and up to 40 seconds exposures. We have found it difficult to get adult patients with large port-wine stains to stand enough of the treatment to get really good results. It is the after-soreness that they object to rather than the temporary pain during the applications. This is lessened by excluding air from the affected area by means of collodion or dusting powders, but is not prevented. Latterly we have only treated a small area at a time, but this of course enormously increases the period of treatment. The cleanest results that I have had in the treatment of nævi are with radium, but the expense of the salt is a drawback, and particularly so in hospital work, and, furthermore, with babies constant attention is necessary to prevent the slipping away of the applicators or buttons from the affected area.

I am, Sir, yours faithfully,

Reading, Dec. 16th, 1909.

W. T. FREEMAN.

ABDOMINAL CRISES IN DIABETES.

To the Editor of THE LANCET.

Sir,—Dr. Nestor Tirard's interesting communication in your issue of to-day and the preceding annotation upon the same subject impel me to add a few brief observations of my own. Miss A—B—B—aged 27, a fever hospital nurse, on August 18th last entered my consulting-room in a state of great debility, having been compelled to resign her hospital appointment from sheer bodily weakness. Her general aspect and the odour of her breath permitted a rapid diagnosis (which the urine examination amply corroborated—specific gravity 1032; sugar in quantity) of diabetes. There had been amenorrhoze for seven months.

From the above date, at intervals of a week or so, she was under my observation; the urine, despite rigid diet and medicine (principally sodæ salicyl.), remained at the same high specific gravity both morning and evening, although her weight improved from 7 stone to 7 stone 7 pounds. Among the marked features of her case were the following: Eczema of the eyebrows; vivid "hectic" flush of the cheeks; a red, dry, papillated, very sore tongue, and a typical breath-odour which pervaded my room at each visit with an unusually sickening persistence. At the beginning of November she was able to have a change of air, at Brighton. Her means limiting her visit she returned home, much benefited by the change, about Nov. 17th, and called upon me to report herself as feeling "ever so much better and stronger."

One week later, at 8 A.M., I was urgently summoned to see her. I found her in a condition of marked drowsiness, with dilated and sluggish pupils, rapid shallow breathing, and a disability to heed those around her, in fact, in a condition of commencing coma. She answered my questions with semi-intelligence and was able voluntarily to yield me a specimen of urine for examination. This, tested, showed much less sugar; specific gravity, 1015.

Sodae bicarbonas by the mouth was administered almost immediately, but was as immediately returned. Two hours later the stupor was more marked, the pupils still dilated and sluggish, and a new symptom had appeared—abdominal pain. To locate this I gently percussed the bladder region to obviate any retention trouble, but there, and in the left iliac region, nothing abnormal was to be found. In the right iliac region, however, even the lightest touch produced cries of pain. For this I advised hot applications until my next visit. At 1 o'clock I was called again on account of the pain having become agonising. Being professionally engaged elsewhere I was unable to see her at the moment, and advised the family to call in the nearest medical man, Mr. Dalton Tacey, who kindly saw her and administered a hypodermic injection of morphia and atropine, and when I saw her later in conjunction with that gentleman she was in deepest coma, moribund, dying at 8 P.M.

The features of the case which struck me were: (1) The fall of the specific gravity with commencing coma; (2) the intensely rapid onset of pain in the right iliac region with no explanation of its cause on digital examination, unrelieved except by morphia; and (3) the long amenorrhæa and the rapid change from the "ever so much better and stronger" condition to the fatal termination. I much regret that in my hasty first visit I omitted to put my ophthalmoscope in my pocket and therefore was unable to view the fundi.

I venture these somewhat sketchy notes for your readers in the hope that each clinical observer of this diabetic phase may add his mite, thereby increasing the sum of truth and the benefit of future records.

I am, Sir, yours faithfully, Woodford Green, Essex, Dec. 11th, 1909. HUGHES R. DAVIES.

THE JOHN HERBERT WELLS FUND.

THE following is the seventh list of subscriptions to the John Herbert Wells Fund. Further contributions will be gratefully received by the Earl of Dalhousie and Mr. Julian G. Lousada, honorary secretaries and treasurers of the fund, at 16, Old Broad-street, E.C., or by ourselves at this office:—

	£	٠.	u.		æ	ě.	и.
Esculapius Lodge	10	10	0	Professor A. H. White	2	2	0
Dr. William Hill	5			Dr. Hughlings Jackson,			
Lord Willoughby de				LL.D., F.R.S		2	
Eresby, M.P	5	5	0	Mr. and Mrs. J. W. Gill		10	
Right Honourable				Mrs. A. Drury		1	
Marquis of Zetland				Miss F. A. Goodenough		1	
Lord Leconfield	5	0	0	Messrs. Price and King		1	
Mr. Evelyn Heseltine				Mrs. Forsyth		1	
Mrs. Broucke				Dr. S. G. Scott		1	
Mr. James Mackee				Mr. W. C. Biss	1	0	
Mrs. Mosenthal	2	2	0	, Mr. Gerald H. Hardy	1	0	0

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

The following appointments are notified:—Fleet-Surgeons: H. W. Macnamara, C. Bradley, A. G. W. Bowen, and J. C. Durston to the *President*, additional, for three months' hospital course; J. K. Robinson to the *Casar*; and J. Moore to the *Shannon*. Staff-Surgeons: E. T. P. Eames, W. R. Trythall, F. F. Lobb, J. Boyan, E. O. B. Carbery, and A. R. H. Skey to the *President*, additional, for three months' hospital course; C. H. Rock to the *Indus*; E. Arkwright to the *Blenheim*; J. E. H. Phillips to the *Endymion*; K. H. Jones to the *Dida*; J. Lindop to the *Excellent*; and W. J. Codrington to the *Cornwall*, on recommissioning. Surgeons: E. R. L. Thomas, W. C. B. Smith, T. E. Blunt, G. E. Hamilton, and H. S. Turner, to the *President*, additional, for three months' hospital course; J. Barrett to the *Detiance*, lent temporarily; W. N. Blatchford to the *Vernon*, additional, for the *Niger*; B. S. Robson to the *Haleyon*; J. Hadwen to the *Dominion*; J. C. Orwin to the *New Zealand*; and H. C. Devas to the *Cornwall*, on recommissioning.

ROYAL ARMY MEDICAL CORPS.

Captain Dudley S. Skelton, from the Seconded List, is restored to the establishment (dated Dec. 11th, 1909).

Captain A. E. F. Hastings has been detailed as medical officer of the first and second camps of artillery training at Bargarh.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Women Doctors and the Infirmary Board.

THE question as to whether women should be admitted to resident appointments at the Manchester Royal Infirmary has become a burning one. A recent report from the board of the hospital announcing its decision against the appointment of lady doctors to resident medical or surgical posts in the Manchester Royal Infirmary has called forth much criticism. Two of the adverse reasons given, that "the patients do not desire their services," and that the infirmary "cannot provide accommodation," have been treated with scant respect by the friends of those aggrieved. A local weekly paper says: "The report of the committee has been scathingly condemned and pitilessly analysed; its bad logic has been exposed, its departure from facts marked, and its weakness ridiculed." A committee has been formed to support the movement to "secure justice for the women doctors who ought not to be barred out merely for sex reasons." The Northern Association of Medical Women have discussed the matter. They meet the arguments of the board that no male patients and very few female patients preferred to be medically treated by a woman; that in a general hospital the services of medical women were not, upon the whole, as valuable and beneficial as those of men; that the board would not be justified in incurring the additional expense which would be necessary in order to provide accommodation for women medical officers. The reply is to the effect that the patients whose opinion was asked by those in authority at the infirmary were not in a position to give an unbiassed answer; that figures can be given from hospitals with mixed staffs to show that there is a demand for the services of medical women; that the male surgical patient is not the only one to be considered; that there are female wards where the services of a medical woman would be particularly desirable; and that there is ample scope for medical and surgical work for a resident woman apart from the male surgical patients. They say also that the additional accommodation could be prowided at a small cost, and suggest that the advice of a medical woman as to this matter "might be sought with advantage." It may here be pointed out that the claimants for women's rights allowed the planning and building of the infirmary to go on, so far as is known, without pressing the point that there should be provision for women medical residents, which was a tactical error on their part, as never in the history of the institution had the question of women medical residents been brought before the board, or even thought of. The committee for the purpose of securing the admission of qualified medical women to resident posts in the infirmary consists at present of representative members of numerous associations-viz., the Manchester Association of the Federation of University Women, the Manchester Association of Registered Medical Women, the National Union of Women Workers, the Women's Local Government Association, the Women's Trades Union Council, the Women's Co-operative Guild, and a number of "influential men and women." Whether the pressure thus brought to bear upon the infirmary board will be effectual or not remains to be seen. Women can fairly say that when they pay the same fees and are allowed to go up to the same examining boards after going through the same training as men, and when they obtain the same legal qualifications, they should be allowed the same opportunities for practical work in the hospitals. But the world is not governed by logic, for which many seem to be thankful, and there may be reasons why such appointments as are desired would lead to difficulties in working and to less efficient treatment.

Dec. 21st.

UNIVERSITY OF SHEFFIELD.—The Council at its last meeting made the following appointment: Mr. Graham S. Simpson, F.R.C.S., to the Lectureship in Operative Surgery. At the same meeting the Pro-Chancellor (Mr. George Franklin) and the Vice-Chancellor (Sir Charles Eliot) were appointed representatives of the University on the executive committee of the Modern University Congress.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Royal College of Surgeons of Edinburgh.

THE premises of the Royal College of Surgeons of Edinburgh have been in the hands of builders and carpenters for many months past, but have emerged from their hands in a condition which has given satisfaction to all concerned. The old hall in which the Fellows met was quite unbecoming the dignity of such a venerable College, but the new hall, which has been built above it, is in every respect suitable. On the ground floor there is now a long suite of rooms opening off each other and used as libraries, readingrooms, council-room, and writing-rooms. Entrance to the hall above is by the staircase which used to lead to the museum. The museum has been extended lead to the museum. southwards and eastwards by taking in buildings which adjoined the College. A suite of small rooms is fitted up as a laboratory, under the management of the curator of the museum, and furnished with microphotographic apparatus and other necessaries. The entire premises have been redecorated. All the additions and alterations were completed in time for the annual dinner of the College, which was held on Dec. 14th, when the chair was occupied by the College President, Mr. J. M. Cotterill, and amongst the guests were Lord Rosebery and Lord Balfour of Burleigh. Rosebery proposed the toast of "The College" in the felicitous and graceful way which is expected of him on such occasions. He spoke of his forebear, Gilbert Primrose, having been the first recorded Fellow of the College of Surgeons of Edinburgh, and he showed the mortar which had been used by him and bore engraved upon it "Gilbert Primrose, chirurgeon, 1569." He then referred to the state of Scotland at the time when the College got its first charter; and he traced the relations of the surgeons with the barbers. He spoke of the requisites of surgery, and in proposing the toast of the College he associated with it the name of Joseph Lister as well as that of the President. The President replied to the toast, and intimated that Lord Rosebery had been made an Honorary Fellow of the College. On Wednesday evening the President and Fellows of the College gave a reception in their new and renovated premises, which was attended by a large and influential gathering of citizens, when it was felt unanimously that the officials of the College could be warmly congratulated on the skill with which the changes effected had been conceived and worked out.

Compensation for Iuberculosis.

At the annual conference of the Scottish Chamber of Agriculture and Affiliated Societies heldin Glasgow recently, the members were of opinion that where animals apparently sound are exposed for sale in good faith and are, after slaughter, condemned on account of tuberculosis, compensation should be paid therefor out of Imperial funds, and also that the compensation payable under the Tuberculosis Order which comes into force on April 1st next should be a charge, not on local rates, but on the national Exchequer.

Additions to Dundee Royal Infirmary

At the quarterly meeting of the governors of the Dundee Royal Infirmary held on Dec. 13th the chairman asked the governors to sanction several schemes involving expenditure, chief of these being the erection of a new out-patient department. For the sum of £3800 a building could be had, he said, equal to the wants of the infirmary for many years to come. Mr. J. K. Caird, to whom they already owed the Maternity Hospital and the Cancer Hospital, not to mention minor gifts, had offered the sum of £2400 towards the scheme. Accordingly the board asked the governors to sanction the expenditure, of which, owing to Mr. Caird's generous gift, only £1400 would fall on the infirmary funds. It was unanimously decided that the erection of the new out-patient department should be proceeded with.

Sidlaw Sanatorium to be Closed.

The executive committee of the directors of the Sidlaw Sanatorium appointed to consider the financial position of the institution met on Dec. 16th. It was found that while an additional £500 per annum would be sufficient to meet the present deficit, a very much larger sum would be required to place the institution on a really satisfactory basis. They were of opinion that it would be impossible to raise such an

adequate sum by private subscription. The committee accordingly came to the unanimous decision that it would be unwise to attempt to continue the work of the sanatorium under existing conditions and it was agreed to close the institution on Jan. 31st.

Dec. 20th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Treatment of Maluria.

In the treatment of malaria M. Lemanski strongly recommends intramuscular injections of quinine in preference to administration by the mouth. In speaking on this question at a recent meeting of the Therapeutical Society he pointed out the advantages of the intramuscular method, specifying the rapidity of action, the certainty of absorption, and the absence of unpleasant after-effects or of troubles due to the irritating action of quinine on the stomach. There was also a notable reduction in the amount of quinine required. because the intramuscular administration of a total quantity of 8 or 10 grammes would put an immediate stop to even the longest and most violent attacks, attacks which would not always completely yield to daily doses of 2 or 3 grammes continued even for a fortnight. In some of the various forms of malaria it will often be necessary along with the quinine to give subcutaneous injections of arrhenal and extract of cinchona. In certain cases of malarial hepatic disease, or enlargement of the spleen, or cachexia, much advantage may be derived from hydrotherapy or a course of Vichy treatment. M. Lemanski also said that opotherapic treatment deserved special mention, for daily doses of 60 or 100 grammes of fresh raw spleen were very beneficial to patients suffering from extreme enlargement of the spleen associated with chronic malaria.

Hare Gases in Thermal Springs.

At a meeting of the Academy of Sciences held on Dec. 13th M. Moureu and M. Lepape stated that in the course of their researches on thermal springs they had found that krypton and xenon existed in 26 French springs, including those of Aix-les-Bains, Plombières, Luxeuil, Maizières, Bourbon-Lancy, Bussang, Grisy, Saint-Honoré, La Bourboule, Néris, Bagnères-de-Bigorre, Bagnères de Luchon, Dax, Raux-Bonnes, Cauterets, Salins-Moutiers, La Chaldette, and Uriage.

Dec. 20th.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

Operative Pneumothorax in Phthisis.

Dr. Lucius Spengler of Davos has published a series of 40 cases of operative intervention in phthisis for the production of pneumothorax. The operation was first proposed in 1843 by James Carson and taken up again in 1888 by Fortanini, Spaeth, and Murphy independently of each other. Dr. Spengler recommends the operation solely in severe one-sided affections and according to the method of Murphy and Brauer. He reports 25 satisfactory, 6 fairly good results, 6 indifferent ones, and 3 deaths. In 2 of the latter the disease progressed rapidly after the operation. In the third case an air embolism into the brain took place which resulted in death in three days. A detailed treatise on this subject will shortly be published.

Prevention of Acute Ophthalmia.

Dr. Auguste Dufour treated this important subject in a paper read at a recent meeting of the Medical Society of the Canton of Vaud. Acute ophthalmia attacks 400 children annually in Switzerland, 64 of whom suffer definite loss of vision. Of late years the number is on the increase owing to the negligence of midwives and parents. Dr. Dufour recommends steps to be taken by the Swiss Federal authorities to make general preventive measures such as exist in the cantons of Zürich, Bern, and Fribourg. The following resolutions were unanimously passed:—

1. The midwives are to be reminded of their stringent duty to call in medical advice in case of purulent secretion of the genital tract of the mother and of the eyes of the infant.

 Instructions are to be distributed to all the midwives in Switzerland. Similar printed instructions are to be given gratuitously to the parents by the registrar of births.

Zurich, Dec. 18th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Acquittal of a Dental Surgeon Charged with Culpable Negligence.

In a case recently tried before the High Court of Justice the decision of the court, delivered on Nov. 17th, was to the effect that a surgeon is not legally responsible for injurious consequences arising out of an operation which has been conducted in accordance with accepted operative methods. The circumstances were as follows. A business man consulted Dr. Maurice Ronay, a dental surgeon, on account of a broken molar tooth, which was hurting his tongue. Dr. Ronay accordingly began to file off the point of the tooth in question, but during the operation the file slipped off the tooth, not only cutting across the sublingual artery, but also making a wound which measured 5.5 centimetres in length and 1.5 centimetres in breadth. The injury was so severe that the patient had to be conveyed to a sanatorium, where Professor Hültl made an incision measuring 18 centimetres in length on the face, and through this he ligatured the torn vessel. The patient stayed four weeks in the sanatorium and afterwards had to go to a climatic health resort on account of an attack of pleurisy and pneu-monia owing to blood from the sublingual artery finding its way into the trachea. The Attorney-General said that the dental surgeon ought to have used either Pappenheim's or Herbst's tongue protector, and that in failing to do so he was guilty of culpable negligence. Dr. Ronay, in defending himself, said that the accident was the consequence of the patient not following his instruction to keep his tongue on the other side. He further stated that it was not customary in such operations to use either Pappenheim's or Herbst's tongue protector, and to the best of his belief these instruments were not employed, even in the dental clinic of the University of Budapest. The judge thereupon sent for the director of the dental clinic, who corroborated what had been said by Dr. Ronay, and the latter was accordingly acquitted on the charge of culpable negligence. In commenting on the case the judge remarked that a person who submits to an operation must reckon with the possibility that untoward consequences may follow it.

The Antivivisection Movement in Hungary.

In Budapest the opponents of physiological research are endeavouring to revive the old argument that vivisection is useless for the advancement of medical science, and may even be the cause of disastrous errors. A society has been formed for the propagation of these views, the members including several persons well known in society and in the fashionable world. It has not yet, however, made much progress, and at the first meeting held recently in the town hall the attendance was limited.

The Opening of the New Internal Clinic No. 11.

The recent opening of the new Internal Clinic No. II. is an important addition to the medical institutions of Budapest. The buildings occupy an area of 5000 square metres, with a frontage of 80 metres in length; they are four storeys in height and contain 168 beds. The lecture-hall is spacious, airy, and fitted up with every requisite for modern methods of teaching. Apparatus for showing projection pictures, an X ray laboratory, and chemical and bacteriological laboratories are provided. The wards for the reception of patients are admirably designed and fitted up; their sanitary arrangements leave nothing to be desired, and their excellence in all respects is unanimously recognised by the foreign visitors. The nursing of the patients is done by Red Cross sisters.

Dec. 18th.

THE SURGICAL AID SOCIETY.—At the annual meeting of this society, held at the Mansion House under the presidency of the Lord Mayor, it was stated that the year's income amounted to £30,499, against an expenditure of £21,683, which was employed in the supply of 39,204 appliances to 25,424 patients.

NOTES FROM INDIA. (FROM OUR OWN CORRESPONDENTS.)

House-to-House Vaccination.

In a report on vaccination in the Punjab during the past year, Lieutenant-Colonel C. J. Bamber, I.M.S., the Sanitary Commissioner of that province, states that while in most districts the people as a whole have no objection to primary vaccination there is a strong prejudice against the operation of revaccination, partly because it is considered unnecessary and partly because in the case of boys it may interfere in a slight degree with their work. Another factor making against the operation is said to be the lack of interest displayed by municipal members, ziladars, lambardars, and other civil subordinate officials. In the districts of Kangra, Ferozspore, Gujrat, Shahpur, and Muzaffargarh, the decrease in vaccination statistics is directly ascribed to want of energy on the part of those who might be expected to set a good example. Lieutenant-Colonel Bamber, in the course of his report, throws out a suggestion which meets with the approval of the Lieutenant-Governor to the effect that house-to-house vaccination might be introduced experimentally in a few places. "This," he says, "has proved a great success in England in popularising vaccination and is very likely to prove equally successful in this country. This would be also a good method for the distribution of quinine. This measure will meet with opposition from some of the vaccination staff, but the people will undoubtedly welcome a measure that will save them from the exertion and annoyance of taking their children to a distance.

The Distribution of Quinine.

A recent United Provinces gazette contains a resolution on the sale and distribution of quinine as a prophylactic against malarial fever. The Lieutenant-Governor accepts the principle that quinine should not be distributed at public expense (save in charitable dispensaries) unless this measure is necessary to combat a severe epidemic of malaria. From past experience it is calculated that in case of an epidemic the amount that can be distributed among 1,000,000 people is from 1500 to 2000 pounds. As regards the distributing agency, his honour desires the hearty cooperation · of every official. All touring officers should receive a supply for distribution, but for systematic distribution during a severe epidemic non-official agency must neces-sarily be utilised, and in this matter the district boards are primarily responsible. Instructions are given for the procedure to be adopted in arranging for this systematic distribution of quinine. It is considered that except in the case of a severe epidemic the best method of making quinine readily acceptable is by the ex-tension of the pice packet system. The Lieutenant-Governor approves the Commissioner's proposal to increase the amount of quinine sold for a pice from 7 to 9 grains. Additions to agencies for the sale of these packets are under consideration, and arrangements have been made for the experimental issue of the drug in tablet form, three tablets of 3 grains each being contained in a packet. It is quite possible that the larger the sales the greater will be the loss to Government, as it is not yet certain that 9 grains can be sold profitably for a pice $(\frac{1}{4}d.)$. But, whatever the loss, Government is willing, indeed anxious, to incur it in the effort to encourage the use of the prophylactic.

Health of Eastern Bengal and Assam.

Unlike Bengal and many other parts of India, the most prevalent disease in Assam and in parts of Eastern Bengal is due to intestinal parasites. It is under this head that the Inspector-General of Hospitals places the largest number of admissions into dispensaries, which totalled 562,590, or 17.2 per cent. of the total number of patients treated in the dispensaries of the new province during 1908. Malarial fevers and diseases of the skin come next with 547,122, or 16.7 per cent., and 526,528, or 16 1 per cent. respectively. We are not told what the species of the parasites were that attacked such a large number of persons in the new province, nor the nature of the skin diseases, which come third in order of frequency of admissions into the dispensaries. Malarial fever, as might be expected, was responsible for the has been recognised as privat-docent of Neurology.

usual number of attacks one is accustomed to associate with the major portion of the new province; but it is curious to find that, of the total number of malarial fever cases, only 48 were diagnosed as kala-azar, against 61 in the preceding year. This would tend to show that this dread disease is not so prevalent as might have been thought, as it is intimately associated with Assam. There is no reference to "blackwater fever" under this head, but perhaps it is classed under some other head. There was a marked decrease in the number of cholera and diarrhoea patients admitted. The civil surgeon of the Naga Hills reports that goitre is extraordinarily common throughout the district. There is a curious belief prevalent among the natives of Assam that goitre is directly due to the eating of a species of yam, called locally "sootnie." It is not apparent that this general belief has been investigated by medical officers. There is occasionally a substratum of truth in such local beliefs, so that this idea might well be confirmed or exploded by competent investigation.

Plague.

The mortality from plague in India considerably decreased during the week ending Nov. 13th, the total number of cases being 5002, resulting in 3901 deaths. In Bombay there were 647 deaths; in Madras, 91; in Bengal, 202; in the United Provinces, 1122; in the Punjab, 400; in Burma, 22; and in the Central Provinces, 677.

Nov. 25th.

Medical Rews.

VICTORIA UNIVERSITY OF MANCHESTER.—At examinations held recently the following candidates were successful in the subjects indicated :-

THIRD M.B. EXAMINATION.

THIRD M.B. EXAMINATION.

General Pathology and Morbid Anatomy.—K. D. Bean, C. E. Butterworth, Norman Duggan, Jane C. Miller, Manfred Moritz, Lovel Moss, W. Howarth Parkinson, John Rothwell, William Stirling, J. S. B. Stopford, *G. K. Thompson, and William Warburton.

Pharmacology, Therapeutics, and Hygiene.—O. R. Allison, C. B. Davies, E. R. Eatock, W. II. Kauntze, T. W. Martin, Newton Matthews, Lovel Moss. H. G. Peake, S. B. Radley, G. E. Sawdon, C. M. Stallard, and J. P. Stallard.

Hugiene.—C. E. Butterworth

Hygiene.-C. E. Butterworth. SECOND M.B. AND CH.B.

B. B. Berry, † A. G. Bryce, L. T. Challenor, Geoffrey Fildes, C. L. Graham, George Jackson, T. P. Kilner, J. A. Lees, P. H. Midgley, L. W. Sparrow, C. F. White, and A. G. Wilkinson.

Anatomy.—C. T. G. Bird, G. C. Dixon, and W. H. Wood.

DIPLOMA IN DENTISTRY (THIRD EXAMINATION). Vernon Ditcham, S. I. Fillingham, F. B. Preston, Norman Vickers, and R. S. Ward.

Anatomy, Dental Anatomy, and Histology.—Wilfrid Jackson.

* Distinction in Pathology. † Distinction in Physiology.

University of Liverpool.—At the examination for the Diploma in Tropical Medicine held recently, the following candidates were successful :-

B. R. Armstrong, M.B., Ch.B.; G. Beatty, M.B., C.M.; C. L. Chevallier M.R.C.S., L.R.C.P.; W. Fleming, M.B., Ch.B.; H. M. Hanchell, M.R.C.S., L.R.C.P.; S. A. Henry, M.A., M.B., B.C.; F. A. Inness, M.A., M.B., Ch.B.; A. F. Jackson, B.A., M.B., B.C.; S. M. Kaka, M.R.C.S., L.R.C.P.; A. A. D. McCabe-Dallas, L.M., Lic. Med.; K. B. Shroff, L.M. & S.; Violet A. Turkhud, M.B., B.S.; and F. Yen, M.D.

Foreign University Intelligence .-Borne: Professor A. Siegrist, Director of the University Ophthalmic Clinic, has declined an invitation to Strasburg as successor to Professor Schirmer.—Berlin: Dr. Ernst Weber has been granted the title of Professor.—Bonn: Dr. Prym has been recognised as privat-docent of Pathological Anatomy and General Pathology.— Göttingen: Dr. Göppert has been appointed Extraordinary Professor of Children's Diseases.— Marseilies: Dr. Treille has been appointed Clinical Professor of Tropical Diseases, a newly created chair.—New Orleans (Tulane University): Dr. Henry W. Stiles has been appointed Adjunct Professor of Anatomy.—Padua: Dr. Annibale Preto has been recognised as privat-doesn't of Operative Medicine. -Philadelphia (Medico-Chirurgical College): Dr. J. Hamilton Small has been appointed Adjunct Professor of Bacteriology. Strasburg: Dr. Georg Ledderhose, Extraordinary Professor of Surgery, has been entrusted with the courses of lectures on Forensic and Social Medicine. - Turin: Dr. G. Roasenda

University College (University of London). —On Dec. 17th a new department of botany was opened at University College by Mr. D. H. Scott, Ph.D., Vice-Chancellor of the University. The suite of 15 rooms has been made available by the migration of the old physiological department to the new institute of physiology.

Apothecaries' Hall of Ireland.—The preliminary examination for candidates seeking this licence will take place on Monday, Jan. 3rd, 1910. The quarterly examinations will be held on the following dates: First professional, Monday, Jan. 3rd, 1910; second professional, Thursday, Jan. 6th; third professional, Monday, Jan. 10th; and final professional, Wednesday, Jan. 12th.

EARTHQUAKE IN ARMENIA.—Our Constantinople correspondent writes that according to a telegram from Bitlis a violent earthquake has completely destroyed the locality of Ernit. One village disappeared from the face of the earth and four others suffered greatly. 70 houses have been levelled with the ground and 40 persons perished under

DEATHS OF EMINENT FOREIGN MEDICAL MEN. The deaths of the following eminent foreign medical men are announced:—Dr. A. O. Lindfors, professor of gynsocology in the University of Upsala.—Dr. Heinrich Adler, editor of the Wiener Medizinische Wochenschrift, aged 61 years.—Dr. Niels Peter Schierbeck, docent of hygiene in the University of Copenhagen.—Dr. Antonio Ripamonti, prival-decent of neurology in the Florence Medical School and councillor in the Commune of Milan.

Drainage of St. Petersburg.—On the subject of the drainage of the Russian capital a correspondent of the Novoe Vremya, after pointing out the exceptional death-rate of the town, 28 per 1000, with that of other capitals of the world—e.g., Moscow, 25; Rome, 18; Vienna, 17; Paris, 17; Berlin, 15; and London, 15—and enumerating the practically endemic position of some of the infectious diseases that rage there and the threatened permanence of cholera, which has held its position since autumn of last year (1908), proceeds to describe the drainage system prevailing, to which, making allowance for the poverty of the working classes, he ascribes most of the terrible mortality recorded. The chief cause, he says, is the exceedingly dirty condition of the ground of the town and its rivers and canals. The sewage, both and liquid, is carried in a most primitive way through badly constructed wooden tubes to the rivers and canals that run through the town. Much of the filth leaks through the tubes into the soil and, further, the system is so badly levelled that the liquid impurities gather by gravitation in places and form sickening pools. On the rare occasions when these tubes are cleaned out—usually by shovels—the filth is flung on to the open ground to infect the surrounding atmosphere for a greater or less time. Much of the sewage is removed in imperfectly equipped carts, and in the sparsely inhabited parts of the town the men simply throw it out on the roads or into the local canals. Some collections, particularly the Glucho-oserskaya, flow in a stream into the Volchovka river and thence into the Obvodnoma canal, thus flowing back into the town. This collection has not been disinfected for the last 20 years. The effect of this neglect on the soil of St. P. tersburg has been such that some of the ground taken from the courtyard of the Nikolaieff Military Hospital, on chemical analysis, yielded seven times as much nitrogen as the soil taken from cemetery graves. The ground water near the Kriukoff canal has a strong smell of sulphuretted hydrogen, and has been known frequently to cause men who have been engaged digging foundations to swoon. The rivers and canals are simply open sewers. To what extent the town water is infected may be judged from the fact that the Fontanka river, even in the coldest weather, does not freeze in the "lower strata." The only advantage of the present system, says the writer of the article, is its cheapness, and that is why the question of the drainage of the capital, though under debate since 1864, has not been decided. He believes that the limits of nature are being approached, and that without radical measures the city must undergo a vital and economic disaster.

BOOKS, ETC., RECEIVED.

Baillière, Tindall, and Cox, London.
Pulmonary Tuberculosis and Sanatorium Treatment. Ten Years' Observation and Work in Open-air Sanatoria. C. Muthu, M.D., M.R.C.S., L.R.C.P. Price 3s. 6d. net.

Bennett, Coleman, and Co., The Times Press, Bombay.

Transactions of the Bombay Medical Congress, 1909. Edite
Lieutenant-Colonel William Brnest Jennings, M.D., D.I.
I.M.S., General Secretary of the Congress. Price not stated. D.P.H.,

BLACK, ADAM AND CHARLES, London.
Who's Who. 1910. Price 10s. net.
Who's Who Year Book. 1910. Price 1s. net.
The Writers' and Artists' Year Book. 1910. Price 1s. net.
The Englishwoman's Year Book and Directory. 1910. Edited by
G. E. Mitton. Price 2s. 6d.

FROWDE, HENRY, Oxford University Press, London.

Michael Servetus. By William Osler, M.D., F.R.S. Price 1s. net. GRIFFIN, CHARLES AND COMPANY, LIMITED, London

The Year Book of the Scientific and Learned Societies of Great Britain and Ireland. Price 7s. 6d.

AZELL, WATSON, AND VINEY, LIMITED, London.

Hazell's Annual for 1910. Edited by Hammond Hall. Price 3s. 6d.

LONGMANS, GREEN, AND Co., London, New York, Calcutta, and

ONGMATS, GREER, AND CO., AND C

SWAN SONNENSCHEIN AND Co., LIMITED, London.

Remedial Gymnastics for Heart Affections used at Bad-Nauheim. Being a Translation of "Die Gymnastik der Herzleidenden," von Dr. med. Julius Hofmann und Dr. med. Ludwig Pöblman, Berlin und Bad-Nauheim. By John George Garson, M.D. Edin. Price 5s. net.

VIGOT FRERES. Paris.

La Photothérapie: ses Avantages dans le Traitement du Lupus Vulgaire. Par le Dr. Léon Friedmann. Price Fr.3.

Voss, Leopold, Hamburg und Leipzig.

S. LEPOLD, Hamourg und Leipzig.
Umfang und Art des jugendlichen Krüppeltums und der Krüppe fürsorge in Deutschland. Nach der durch die Bundesregierungen erhobenen amtlichen Zählung. Im Auftrage und mit Unterstützung des preuss. Kultusministeriums, der deutschen Zentrale für Jugendfürsorge und des Krüppel-Heil-u. Fürsorgevereins für Berlin-Brandenburg. Bearbeitet und herausgegeben von Dr. Konrad Biesalski. Price, paper, M.30; bound, M.32.

WHITAKER, J., AND SONS, LIMITED, London.

An Almanack. For the Year of Our Lord, 1910. By Joseph Whitaker, F.S.A. (Whitaker's Almanack.) Price 2s. 6d.

WILEY, JOHN, AND SONS, New York and London. (CHAPMAN AND HALL, LIMITED, London.)

Food Inspection and Analysis. For the Use of Public Analysts, Health Officers, Sanitary Chemists, and Food Boonomists. By Albert E. Leach, S.B. Second edition, revised and enlarged. Price, cloth, \$7.50 or 31s. 6d. net.

YEAR BOOK PUBLISHERS, Chicago.

The Practical Medicine Series.

of Gustavus P. Head, M.D.

Therapeutics, Preventive Medicine, Climatology. Edited by George F. Butler, Ph.G., M.D., Henry B. Favill, A.B., M.D., and Norman Bridge, A.M., M.D.

Series, 1909. Price not stated.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANGET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication

CANNEY, J. R. CAMPBELL, M.B., B.C., has been appointed Resident Medical Officer at University College Hospital.

CLIFFORD, HAROLD, M.B. LOND, F.R.C.S. Edin., has been appointed Registrar to the St. Mary's Hospitals, Manchester.

COLLINS, G. F., L.R.C.P. Irel., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Sutton Bridge District of the county of Lincoln.

FITZWILLIAMS, DUNCAN C. L., M.D., Ch.M., F.R.C.S. Edin., F.R.C.S. Eng., has been appointed Surgeon-in-Charge of Out-patients at St. Mary's Hospital.

GORDON, S. G., L.R.C.S., L.R.C.P. Irel., L.M., has been appointed Assistant Resident Surgeon at the General Dispensary, Nottingham.

HOBES, EDWARD COOMER, M.R.C.S., L.R.C.P. Lond., has been appointed House Physician to the West London Hospital, Hammersmith.

appointed House Physician to the West London Hospital, Hammersmith.

McCully, D., M.R.C.S., L.R.C.P., has been appointed House Physician at University College Hospital.

MacManon, A. P., M.B., B.S.R.U.I., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Clondalkin District of the county of Dublin.

Rayner, H. H., M.B., B.Ch. Vict., F.R.C.S. Eng., has been appointed Honorary Surgeon for Children at the Northern Hospital, Manchester.

Shattock, C. E., M.R.C.S., L.R.C.P., has been appointed Obstetric Assistant to University College Hospital.

SHAW, W. F.. M.D. Vict., has been appointed Pathologist to the St. Mary's Hospitals, Manchester.

SIMPSON, GRAHAM, F.R.C.S. Eng., has been appointed to the Lectureship in Operative Surgery in the University of Sheffield.

WHITE, CLIFFORD, M.D., B.S. Lond., M.R.C.P. Lond., F.R.C.S. Eng., has been appointed Obstetric Registrar to University College Heapital Hospital.

Pacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BATLEY, BOROUGH OF.—Medical Officer of Health and Medical Inspector of School Children. Salary £300 per annum.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—House Surgeon for six months. Salary at rate of £20 per annum, with board and residence.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Senior House Surgeon. Salary £25 per annum.

BOURNEMOUTH, ROYAL BOSCOMBE AND WEST HANTS HOSPITAL.—House Surgeon. Salary £30 per annum, with board, lodging, and washing.

washing.

BRISTOL ROYAL INFIRMARY.—Honorary Dental Amesthetist.

BUXTON, WYE HOUSE ASYLUM,—Assistant Medical Officer.

£120 per annum, all found.

CANCER HOSPITAL, Fulham-road, S.W.—Assistant Amesthetist.

Salary

95 witness per annum.

CANCER HOSPITAL, Full maintrious, D. W. - Instant.

25 guineas per annum.

CHARTHAM, KENT COUNTY ASYLUM.—Third Assistant Medical Officer.
Salary £145 per annum, with board, quarters, attendance, and washing.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant.

BAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Physician. Salary at rate of £75 per annum, with board and residence.

FARRINGDON GENERAL DISPENSARY AND LYING-IN CHARITY, Bartlett's Buildings, Holborn-circus, E.C.—Honorary Physician.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £50 per annum, with board, residence, and laundry.

laundry.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—
House Surgeon, unmarried, for six months. Salary £30, with
board and residence.

board and residence.

HULL ROYAL INFIRMARY.—Casualty House Surgeon. Salary at rate of £60 per annum, with board and lodging.

INDIAN MEDICAL SERVICE, India Office, London.—Thirteen Commissions in His Majesty's Indian Medical Service.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.—Research Students on Malaria, Parasitology, Pathological Chemistry. Salaries £150 to £250 per annum. Also Research Assistant at the Runcorn Laboratories. Salary £120.

LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—House Surgeon. Salary £50 per annum.

MANCHESTER CHILDREN'S HOSPITAL, Gartside-street.—Assistant Medical Officer. Salary £100 per annum.

MANCHESTER ROYAL INFIRMARY.—Medical Registrar. Salary £70 per annum.

annum.

MEDICAL MISSION HOSPITAL, Balaam-street, Plaistow, E.

MEDICAL MISSION HOSPITAL, Balaam-street, Plaistow, E.—Assistant Doctor (female) for six months. Board, residence, and laundry.

MONTREAL, ROYAL VICTORIA HOSPITAL.—Pathologist.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.—Physician.

NAVAL FORCES IN THE UNITED KINGDOM.—Two Dental Surgeons. Salary £1 per diem, and travelling expenses.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN,—Honorary Physician to Out-patients.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician. Salary £50 per annum, with board, lodging, and washing.

SOUTHAMPTON, FREE EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and residence.

YARMOUTH COUNTY BOROUGH.—Medical Officer of Health. Salary £400 per annum.

Births, Marriages, and Meaths.

BIRTHS.

CORNWALL.—On Nov. 28th, at Westcliffe, Coonoor, the wife of Major J. W. Cornwall, I.M.S., of a son.

HOTCHKIS.—On Dec. 20th, at Mid Dykebar, Paisley, the wife of Robert Dunmore Hotchkis, M.D., of a son.

TOWNSEND.—On Dec. 12th, at Naval-terrace, Sheerness, the wife of Surgeon Evelyn R. Townsend, R.N., of a son.

MARRIAGE.

St. John-Twigg.—On Dec. 18th, at St. Peter's, Cranley-gardens, Winston St. Andrew St. John, M.R.C.S., L.R.C.P., to Violet Julia Louisa, second daughter of Henderson James Twigg.

DEATHS.

BRUMWELL.—On Dec. 15th, at Barden, Shanklin, Isle of Wight, Joseph Cownley Brumwell, M.D., J.P., late of Burnley, aged 86. Turner.—On Dec. 17th, at 11, Heathfield-gardens, Chiswick, Ann Louiss, widow of the late William Hall Turner, M.R.C.S., L.S.A. (Guy's), in her 91st year.

N.B.— A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Rotes, Short Comments, and Answers to Correspondents.

THE CAMPAIGN OF THE NATIONAL FOOD REFORM ASSOCIATION.

THE committee of the National Food Reform Association has issued a circular calling attention to the widespread physical degeneracy of the people of Great Britain as revealed in the evidence before the recent Inter-Departmental Committee on Physical Deterioration; the very general ignorance of household management, and particularly respecting the choice and preparation of food; and the close connexion between improper, inadequate, and unscientific feeding and the drinking habits of the people, to which the same committee refers. The association asks for support in its efforts to bring this serious state of things to the notice of Parliament by (1) urging the Government to publish, in a popular and easily accessible form, full information as to the nutritive value of foodstuffs, as is done in the official bulletin issued by the Office of Experiment Stations in connexion with the U.S.A. Department of Agriculture; (2) supporting a proposal for a Government inquiry into the feeding of the army and navy, both at home and abroad, the inmates of prisons, workhouses and other institutions, and of underfed scholars, with the object of procuring a maximum efficiency with a minimum expenditure of public money; (3) endeavouring to secure the more systematic and scientific teaching of cookery, hygiene, and domestic economy in schools and continuation classes, these subjects being, as far as possible, made compulsory for the older girls, as recommended by the Inter-Departmental Committee; (4) demanding the provision, in every dwelling let for the occupation of a family, of a grate suitable for cooking; (5) advocating the passing, at the earliest possible date, of a Milk Bill on the lines of that introduced by the President of the Local Government Board; (6) asking that it be made compulsory for each patent medicine to bear a label setting out in detail the ingredients of the same, their proportions, and the diseases they profess to cure; and (7) endeavouring to ensure that the legislation on the subject of inebriates, promised by the Home Secretary for next session, shall take into account the evidence as to the efficacy of the dietetic treatment of inebriety furnished by the Salvation Army Homes for Women Inebriates.

THE MANUFACTURE OF NITROBENZOLS AND ANILINE COMPOUNDS.

To the Editor of THE LANCET.

SIR,-With reference to the query on p. 1870 two references are-Effects of Dinitrobenzene and other Nitro-substitution Products, by R. Prosser White, M.D. (Oliver's "Dangerous Trades," p. 475); Observations on the Condition of the Blood in Men Engaged in Anilin Dyeing and Manufacture of Nitrobenzine and its Compounds, by W. Malden, M.D. (Journal of Hygiene, vol. vii., October, 1907).

I am, Sir, yours faithfully, Home Office, London, S.W., Dec. 21st, 1909.

To the Editor of THE LANCET.

SIB,-Your correspondent "S. F. C." will find information upon the first of these two substances in an article entitled "The Poisonous Properties of Naphthalene and the Aromatic Compounds," THE LANCET, August 31st, 1901; also vide "Dangerous Trades," by Thomas Oliver, Chapter XXXII. Experimental inquiry into the local and constitutional effects of aniline and its salt is at present much needed.

Wigan, Dec. 18th, 1909.

I am, Sir, yours faithfully, R. PROSSER WHITE.

INDOOR BED TENTS.

In the Scientific American of Dec. 4th a lady contributor describes two methods by which persons sleeping in an ordinary bedroom may breathe the external atmosphere and not the air of the apartment. The method which she prefers is that of the fresh-air tent fastened inside the window. The side of the bed near the top is placed close to the open window. The tent, which is made of heavy canvas or awning cloth, comes down from the inside of the window across the bed over the pillow, so that the sleeper when his head is under the tent can breathe the fresh air from the window, while the rest of the body is in the bed covered by the bedclothes and in a warm room. A little celluloid window in the side of the tent next to the room allows the user to see into the room and to converse with whoever may be there, and two persons can sleep in the same bed with only one of them being under the tent. If wished, the sleeper may wear a flannel hood the cape of which covers the shoulders and protects them if the bedclothes should slip off.

A GARBAGE-MONGER PUNISHED.

An elderly man, described as illiterate, and to whom the magistrate's clerk had some difficulty in explaining the nature of the charge which he had to answer, was recently summoned at the Guildhall which he had to answer, was recently summined to the children police court as the owner of the carcasses of four pigs seized and condemned at the Central Meat Market. The defendant, Henry Butler, was stated to be a pig and poultry dealer at Alphamstone in Suffolk, and out of 12 carcasses of pigs sent by him on the same day to London to serve as food for its imbabitants, four were so unmistakeably tuberculous that the alderman who heard

the charge, and who happened also to be the magistrate who condemned them informed the defendant, that without who condemned them informed the defendant, that without claiming to be an exert, he had found their condition perfectly apparent at once o his "unskilled eyes." It was suggested with some reason by the Assistant City Solicitor, who prosecuted, that if the defendant we so ignorant that he did not appreciate the nature of the meat he as consigning to the London market, there was a stage of ignorant or carelessness at which such a mental condition became criming. On heling seattened to make fine of 240 condition became crimin. On being sentenced to pay a fine of £40 with £4 costs or to go t prison for a month, the defendant observed his only assets were a wold horses, and philosophically declared his intention to "take ti month."

Medical Diar for the ensuing deek.

PERATIONS.

WEHATIONS.

METHOLITAN HOSPITALS.

MONDAY (77th).—Londor(2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), S George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Soho-equer (2 P.M.), City Orthopsed (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), Bt. Mark's (2.30 P.M.), Children, Gt. Ormond-street (9 A.M.), Bt. Mark's (2.30 P.M.), Children, Gt. Ormond-street (9 A.M.), Maior 2 P.M.).

West London (2.30 P.M., London Throat (9.30 A.M.), Royal Free (2 P.M.), Guys (1.30 P.M.). Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Children, Middlesex (1.30 P.M.), St. Thomas's (3.30 P.M.), Gy's (1.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (2.30 P.M.), London (2.30 P.M.), University College 2 P.M.), St. George's P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (30 A.M. and 2 30 P.M.), Introat, Golden-square (9.30 A.M.), Samaritan (30 A.M. and 2 30 P.M.), Tottenham (2.30 P.M.), Central London Throat and H (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Opthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat at Bar (Minor, 9 A.M., Major, 2 P.M.), Central London Throat at Bar (Minor, 9 A.M., Major, 2 P.M.), WEDNESDAY (39th).—St. ktholomew's (1.30 P.M.), University College (2 P.M.), Bt. George's (Phihalmic, 1 P.M.), St. Mary's (2 P.M.), N.M. (2 P.M.), Experies (2 P.M.), Bt. George's (Phihalmic, 1 P.M.), St. Mary's (2 P.M.), N.M. (2 P.M.), Cancer (2 P.M.), Metropdan (2.30 P.M.), London Throat (2.30 P.M.), Westminster (2 P.M.), Metropdan (2.30 P.M.), London Throat (9.30 A.M.), Guy's (1.30 P.M.), Cancer (2 P.M.), Metropdan (2.30 P.M.), London Throat (9.30 A.M.), Guy's (1.30 P.M.), Cormond-street (9 A.M. a) 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), Jest London (2.30 P.M.), Children, Gt. Ormond-street (9 A.M. a) 9.30 A.M., Dental, 2 P.M.), Middlesex (3.30 P.M.), University Clege (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London P.M.), King's College (2 P.M.), Tottenham (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M.), Guy's (1.30 P.M.), West London (2 P.M.), King's College (2 P.M.), Tottenham (2.30 P.M.), London Throat (9.30 A.M.), Gaymaritan (9.30 A.M.), Gaymaritan (9.30 A.M.), Gaymaritan (9.30 A.M.), Gaymaritan (9.30 A.M.), Gaymaritan (9.30 A.M.), Gaymaritan (9.30 A.M.), Gaymaritan (9.30

EDITORAL NOTICES.

IT is most important the communications relating to the Editorial business of TH LANCET should be addressed seachesizely "To THE EDIR," and not in any case to any gentleman who may be suposed to be connected with the Editorial staff. It is urgent necessary that attention should be given to this notice.

It is especially requested the carly intelligence of local events having a medical interes or which it is desirable to bring under the notice of therefession, may be sent direct to this office.

Loctures, original articles, nd reports should be written on one side of the paper lly, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUITED THAT THE NAME OF THE AUTHOR, AND IF POSE LE OF THE ARTICLE, SHOULD BE WRITTEN ON THE LOCKS TO FACILITATE IDENTI-PICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or nows paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET should be addressed "To the Manager."

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page for the current half-year is published in this issue, which completes the second volume of the year 1909.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1909 will be ready shortly. Bound in cloth, gilt lettered, price 18s., carriage extra.

Cases for binding the half year's numbers are now ready. Cloth, gilt lettered, price 2s., by post 2s. 3d.

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion what-ever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and not to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

Until the end of the present year copies sent by post will be charged at the rate of $7 \pm d$. inland and 8d. abroad.

Commencing with the issue of Jan. 1st, 1910, the rates of subscriptions, post free from THE LANCET Offices, will be :-

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London, W.C.

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SOLE AGENTS FOR AMERICA-Messis. WILLIAM WOOD AND Co., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS. (Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 22nd, 1909.

Date.	Barometer reduced to Sea Level and 32° F.	Direc- tion of Wind.	Rain- fall.	Solar Radio in Vacuo.	Maxi- mum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Dec. 16 17 18 19 20 21 22	30·16 29·66 29·30 29·42 29·51 29·81 28·92	S.E. S.E. N.W. S. S.W. W. S.K.	0·01 0·25 0·09 0·02 	39 44 49 62 52 49 54	39 44 43 43 38 49 53	35 37 40 37 29 27	35 41 39 35 	37 41 41 37 30 29 49	Overcast Overcast Cloudy Fine Cloudy Foggy Raining

Communications, Letters, &c., have been received from

- A.—Mr. K. S. Agnihotri, Panhala; Ardath Tobacco Co., Lond.; The After-Care, Association, Lond.; The All-India Hospital Assistants' Association, Banga-lore City, General Secretary of.
- A.—Dr. J. S. Bolton, Nottingham;
 Mr. N. L. Basak, Drug, India;
 Mr. C. A. G. Browne, Lond.;
 Bernard Beer Co., Lond.; Mr.
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